MONTHLY REPORTS

OF THE

DEPARTMENT OF AGRICULTURE,

FOR

THE YEAR 1869.

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OF
PHILADELPHIA

EDITED BY J. R. DODGE, STATISTICIAN.

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OF THE

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FOR

JANUARY,

1869.

WASHINGTON:
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MONTHLY REPORT.

WASHINGTON, D. C.,
January 30, 1868.

SIR: I herewith submit for publication the monthly report of this division for January, including a statement of the comparative yield and prices of the farm crops of 1868, from returns made January 1, with extracts from correspondence, and other matter relating to cattle diseases, pork packing, the sugar trade of the United States in 1868, the trade of New York, trade of Chicago, prices of produce, reports of live stock receipts at New York, Boston, Chicago, and St. Louis, scuppernong wine analysis, forests, and facts from various sources.

J. R. DODGE, *Statistician.*

Hon. HORACE CAPRON,
Commissioner of Agriculture.

YIELD AND PRICES OF FARM CROPS.

The accompanying tables show the estimated yield and average prices (on the 1st of January, 1869) of the principal crops of the past year, and are designed as the basis of calculations for the annual tables of production.

The yield of wheat per acre in New England is scarcely equal to that of the previous season, except in Vermont. The average yield of New York is placed at 14.6 instead of 14.5 last year. New Jersey gives one-tenth of a bushel less, and Pennsylvania three-tenths more; Virginia four-tenths of a bushel more, and the more southern Atlantic States all make a decline in the average. Texas and Tennessee report a smaller yield than last year, while Arkansas claims an advance from 9.2 to 13.5 bushels. Kentucky and West Virginia make no material advance, and Ohio scarcely holds the previous average. A small increase appears in Indiana, Illinois, and Wisconsin, and a still more marked result is shown in Minnesota. An increase is made in Iowa and Kansas.

The decline in the price of wheat is quite noticeable, in twelve months, amounting to 42 cents per bushel in New England, 56 cents in New York, 47 cents in New Jersey, 45 cents in Pennsylvania, 71 cents in Ohio, 77 cents in Illinois, 48 cents in Iowa, with differences less striking in the southern States, which grow cereals only for home consumption. In the central and populous parts of the west the prices are this year lower relatively to the more western and northwestern States than last year; as Illinois compared with Iowa, $1 97 to $1 43 last January; $1 20 to 95 cents now. The price of barley is, on the contrary, higher than in January last, in most of the States. Oats maintain their former rate in some of the New England States, but show a decline in the middle

and most of the western States, except in Kansas, where they are higher than last year.

The variation in prices of corn in the different sections may be seen at a glance in the following comparison:

	January, 1868.	January, 1869.
Massachusetts	$1 53	$1 32
New York	1 32	1 12
Maryland	1 09	87
Georgia	96	91
Mississippi	1 09	74
Ohio	82	66
Illinois	68	43
Kansas	55	99

The crop in Kansas was in 1867 very heavy, and last season unusually short.

An examination of the tables will disclose a considerable reduction in the price of potatoes, owing to an increased production as much as to the general tendency to a decline in prices of all farm products.

Winter wheat.—A small increase of acreage of winter wheat is reported, barely enough to equal the increase in population. The largest increase is in Missouri, Arkansas, and Kansas. In condition the crop indicates nearly or quite an average, except in Wisconsin, Michigan, West Virginia, Tennessee, Alabama, with a slight reduction in New York, Connecticut, and a few other States. On the whole the crop may be said to have obtained a fair start, which is all that can be claimed for it at present.

Table showing the average price and yield per acre of the principal crops of the United States for 1868, comparative amount of winter and spring wheat, and the area and condition of winter grain.

STATES.	WHEAT.				RYE.		BARLEY.		OATS.	
	Average *yield* per acre in 1868, stated in bushels.	Average *price* per bushel on 1st day of January, 1869.	How many tenths of the usual crop are winter wheat.	How many tenths of the usual crop are spring wheat.	Average *yield* per acre in 1868, stated in bushels.	Average *price* per bushel on 1st day of January, 1869.	Average *yield* per acre in 1868, stated in bushels.	Average *price* per bushel on 1st day of January, 1869.	Average *yield* per acre in 1868, stated in bushels.	Average *price* per bushel on 1st day of January, 1869.
Maine	10	$2 40	.4	9.6	15	$1 61	16.1	$1 26	22	$0 82
New Hampshire	11.7	2 42	1.2	8.8	12.8	1 58	21.6	1 47	26.5	76
Vermont	16	2 26	.7	9.3	14.8	1 43	23	1 44	30	75
Massachusetts	15.5	2 40	4.3	5.7	16.1	1 66	20.1	1 56	24.1	90
Rhode Island	.....	.....	.....	.....	16.6	1 85	23	1 60	28	77
Connecticut	15.5	2 00	7	3	14.5	1 48	20	1 26	27.7	82
New York	14.6	2 08	6.6	3.4	15.1	1 37	21.4	1 78	26	74
New Jersey	13.9	2 11	10	.....	13.5	1 50	.....	.....	22.4	69
Pennsylvania	12.8	1 98	9.3	.7	13.2	1 32	21.4	1 64	27.8	64
Delaware	12	1 90	10	.....	.....	.....	.....	.....	8	60
Maryland	10.2	2 09	10	.....	12.1	1 35	23.5	1 22	18	64
Virginia	8.4	1 90	10	.....	8.3	1 18	.....	.....	17.8	54
North Carolina	5.9	2 00	9.3	.7	7.4	1 29	15.6	1 25	13	65
South Carolina	5.6	2 25	9.5	.5	5	1 58	.....	.....	9.7	85
Georgia	5.6	2 20	9.9	.1	6.9	1 70	15.5	2 15	12.5	79
Florida	9	2 75	10	.....	10	1 75	.....	.....	11.5	1 00
Alabama	6.1	1 98	9.9	.1	5.8	1 69	10.1	1 83	11.7	88
Mississippi	9.1	2 19	8.6	1.4	10.5	1 97	.....	.....	15.3	1 01
Louisiana	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Texas	6	2 25	9	1	11.8	1 59	11	2 16	26.6	90
Arkansas	13.5	2 00	9.8	.2	13.3	1 06	.....	.....	22.5	80
Tennessee	6.6	1 88	9.7	.3	9	1 25	18.3	1 43	17.4	63
West Virginia	10.7	1 88	9.4	.6	13.6	1 22	17.2	1 86	24.7	51
Kentucky	8.5	1 86	9.9	.1	11.5	1 22	16	1 67	22	48
Missouri	14	1 49	8.5	1.5	18.5	96	24.2	1 74	32.9	43
Illinois	11.5	1 20	5.9	4.1	16.2	93	25.8	1 36	31.9	39
Indiana	11.2	1 50	9.1	.9	14.9	1 06	20.5	1 57	26.5	46
Ohio	11	1 65	9	1	13.6	1 14	22.5	1 47	29	50
Michigan	12.5	1 64	8.9	1.1	18.1	1 09	23.3	1 56	30.1	50
Wisconsin	13	1 00	1.8	8.2	18.6	90	24	1 35	32	49
Minnesota	15	83	.2	9.8	20.6	68	25	1 14	36	48
Iowa	14	95	.6	9.4	19	85	26	1 24	33	35
Kansas	15.6	1 35	5.9	4.1	20.8	1 03	23	98	25	57
Nebraska	15.5	96	.1	9.9	18.3	1 00	25	1 41	30.4	54

Table showing the average price and yield per acre of the principal crops of the United States for 1868, *&c.*—Continued.

STATES.	CORN.		BUCKWHEAT.		POTATOES, (solanum tuberosum.)		POTATO'S, (batatus edulis,) sweet		LEAF TOBACCO.	
	Average *yield* per acre in 1868, stated in bushels.	Average *price* per bushel on 1st day of January, 1869.	Average *yield* per acre in 1868, stated in bushels.	Average *price* per bushel on 1st day of January, 1869.	Average *yield* per acre in 1868, stated in bushels.	Average *price* per bushel on 1st day of January, 1869.	Average *yield* per acre in 1868, stated in bushels.	Average *price* per bushel on 1st day of January, 1869.	Average *yield* per acre in 1868, stated in pounds.	Average *price* per pound on 1st day of January, 1869.
Maine	29.8	$1 38	23	$0 96	130	$0 78	.....	.....	.....	.....
New Hampshire	40.8	1 43	20	93	132	71	.....	.....	.....	.....
Vermont	33.5	1 34	14	96	135	60	.....	.....	.....	.....
Massachusetts	37	1 32	13.2	1 08	116	.93	.....	.....	1,300	$0 23
Rhode Island	27	1 65	.....	.....	101	1 07	.....	.....	.....	.....
Connecticut	34	1 35	18.2	1 20	117	91	.....	.....	1,450	25
New York	32	1 12	19.7	1 01	94	76	.....	.....	800	12.5
New Jersey	37.5	99	16.7	1 28	97	97	92	$1 26	.....	.....
Pennsylvania	35	1 00	16.5	1 09	88	93	90	1 66	.....	.....
Delaware	25	85	20	1 25	75	1 00	50	1 50	.....	.....
Maryland	27.7	87	18.7	1 20	94	93	107	1 28	560	10.8
Virginia	19.3	76	18.4	.98	74	74	98	1 07	783	8.5
North Carolina	14.3	78	15.6	83	76	89	83	66	657	16.7
South Carolina	10.2	1 00	.....	.....	101	1 55	102	79	.....	.....
Georgia	12.7	91	.....	.....	102	1 48	102	69	585	30
Florida	10.5	1 41	.....	.....	110	1 70	150	52	.....	.....
Alabama	10 8	86	.....	.....	61	1 51	72	54	566	28
Mississippi	17.1	74	.....	.....	65	1 45	110	58	783	33.3
Louisiana	22	75	.....	.....	162	1 75	145	67	.....	.....
Texas	25	62	.....	.....	61	1 50	149	55	466	32
Arkansas	30.5	63	.....	.....	63	1 32	141	89	900	11.6
Tennessee	25.3	49	11.4	1 21	73	75	64	90	815	16.4
West Virginia	35	75	21.8	1 01	69	90	60	1 55	611	17.1
Kentucky	32.7	47	15	1 23	80	67	67	1 06	705	12.7
Missouri	30.3	57	17.3	1 03	90	90	104	1 54	796	11.3
Illinois	34.2	43	16.6	1 07	71	81	91	1 41	757	9.1
Indiana	34	52	19.3	95	88	75	71	1 82	705	10.5
Ohio	34	60	17.3	1 07	79	84	80	1 66	814	7.6
Michigan	33	76	19.4	82	94	56	.....	.....	.....	.....
Wisconsin	33	58	18.5	81	77	72	.....	.....	.....	.....
Minnesota	33.5	64	19.4	1 03	151	61	.....	.....	.....	.....
Iowa	37	37	17.2	1 05	96	63	88	1 75	.....	.....
Kansas	18	99	17.5	1 27	85	94	112	1 79	.....	.....
Nebraska	22.9	69	11.3	1 25	66	1 05	.....	.....	.....	.....

Table showing the average price and yield per acre of the principal crops of the United States for 1868, *&c.*—Continued.

STATES.	HAY.		SORGHUM MOLASSES.		WINTER WHEAT.		WINTER RYE.		WINTER BARLEY.	
	Average *yield* per acre in 1868, stated in tons.	Average *price* per ton on 1st day of January, 1869.	Average *yield* per acre in 1868, stated in gallons.	Average *price* per gallon on 1st day of January, 1869.	Average amount sown compared with 1867.	Condition of the crop compared with an average.	Average amount sown compared with 1867.	Condition of the crop compared with an average.	Average amount sown compared with 1867.	Condition of the crop compared with an average.
Maine	1.02	$12 00	.....	.....	9.8	9.8	10	10	.....	.....
New Hampshire	1	13 50	.....	.....	9.6	10.2	9.4	10	.....	.....
Vermont	1.02	14 50	.....	.....	9.3	9.6	10	9.8	.....	.....
Massachusetts	1.37	18 37	100	$1 37	10	10	9.7	10.1	.....	.....
Rhode Island	1.12	20 00	.....	.....	.....	.....	10	10	.....	.....
Connecticut	1.15	17 25	125	85	10	9.6	10	9.6	.....	.....
New York	1.35	15 00	.....	.....	10.3	10.1	9.8	10	10	10.1
New Jersey	1.40	19 00	70	93	10.1	9.4	10.1	9.6	.....	.....
Pennsylvania	1.35	16 00	92	80	10.5	10.1	9.8	10	10.3	10.1
Delaware	1.25	20 00	80	55	10	9	10	10	.....	.....
Maryland	1.28	16 77	98	75	10.1	9.6	9.8	9.5	.....	.....
Virginia	1.22	13 00	79	58	11.8	10.6	10.4	10.4	.....	.....
North Carolina	1.25	15 00	72	57	10	9.8	10	9.5	9.6	10
South Carolina	.95	17 00	44	72	10.7	9.1	10	9.1	10	9
Georgia	1	21 99	88	57	11.5	9.3	9.9	9.7	10.1	9.7
Florida	.....	.....	160	62	8	10	10	6	.....	.....
Alabama	1.66	19 28	88	76	10.3	8.9	9.1	9.3	10.4	9.6
Mississippi	1.25	17 00	73	84	9	9.6	9.4	10	8.6	9
Louisiana	2	10 00	.....	.....	.....	.....	.....	.....	.....	.....
Texas	1.25	10 00	107	92	7.5	10.6	8.6	10.2	8	10.3
Arkansas	1.25	16 00	98	61	13.1	10.3	10.2	9.1	.....	.....
Tennessee	1.25	15 50	90	63	10.9	9.6	9.7	9.7	10.7	10
West Virginia	1.25	15 00	95	76	11	9.9	9.6	9.8	8.6	10
Kentucky	1.27	13 25	96	62	10.6	10.7	10.4	10.4	10.2	10.2
Missouri	1.45	11 00	106	63	13	10.8	10.1	10.7	10.3	10.5
Illinois	1.40	10 00	93	68	10	10.8	10.1	10.4	9.7	10.7
Indiana	1.35	11 09	96	66	10.7	11.1	10.3	10.7	10	10.3
Ohio	1.30	13 80	112	75	10.6	10.8	10.1	10.4	10	10.1
Michigan	1.25	15 00	80	79	10.7	9.4	10.2	10	10.1	10.1
Wisconsin	1.20	11 00	124	78	9.7	9.5	9.8	10	9.3	10.3
Minnesota	1.40	7 00	103	90	10.2	10.2	10.2	10	10	11
Iowa	1.50	6 50	117	73	10.2	9.9	10.1	10.3	10.5	13.3
Kansas	1.45	8 16	98	73	13	11.6	10.8	10.4	10	9.2
Nebraska	1.87	5 40	126	97	.....	.....	12.6	10.3	.....	.....

EXTRACTS FROM CORRESPONDENCE.

FRUITS ON THE HUDSON.

Orange county, N. Y.—The fruit region of the Hudson extends from the Highlands on the south to Kingston on the north, a distance of about 40 miles, embracing the towns on the west bank of the river. The towns of Marlboro, Loyd, and Newburg are most noted for the extent and variety of small fruits. The slaty soil of Marlboro is especially adapted to the production of the Red Antwerp raspberry. Not less than 500 acres are cultivated in the town, giving a gross product of $300,000 per annum. An acre of Antwerps in full bearing is valued at $1,000. Good Antwerp land is worth from two to five hundred dollars per acre. They require dry soil, high manuring and good cultivation. The bearing canes need winter protection, which is afforded by bending them down and giving them a slight covering of earth. This is often done by having a boy hold them down and turning a furrow of earth over them. The wood which has fruited is cut out after the fruiting season is over. New canes for next year's fruiting are raised each year. There have been some indications of mildew on the plants the past two summers, occasioned, we think, by the extreme heat and excessive moisture in July and August. The disease is not very prevalent, and we hope a change of seasons will cause it to disappear. The Antwerp culture in this section only extends back about 25 years, yet there are many patches in the town of Marlboro which have been in bearing 20 years and are still productive. Almost every landholder in the town has an Antwerp patch, and since their introduction and extensive cultivation in the town the price of real estate has advanced at least one-half. Almost every Antwerp grower likewise cultivates strawberries, as the same packages will answer for both, the strawberry season generally being over by July 4, when the Antwerp picking commences and lasts till about the middle of August. The Wilson strawberry is most in favor with us at the present time as a market berry, and the annual product per acre is about two-thirds that of the Antwerps. Plants of the strawberry and Antwerp meet with ready sale at $5 per thousand for the former and $30 to $40 per thousand for the latter. New York city, 60 miles distant, is our market, where they are sold at wholesale by commission merchants.

FRUITS IN UTAH.

Kane county, Utah.—Our soil is principally sandy loam, in some portions the sand prevailing, yet quite productive in wheat, corn and potatoes, the sandier portion excellent for sorghum and cotton. Apples, peaches, pears, plums, grapes, and all the varieties of small fruits that have been tried do exceedingly well. As to apples, the Limber Twig has the preference as a keeping apple. We have in some of our orchards over 40 varieties from the States, with a number of varieties of seedlings which have been raised in Utah, some of which are not excelled by any that we have tried. Peaches are principally seedlings, still superior to any raised in the northern part of the Territory, for the trees appear to be perfectly at home in our soil and climate, and seem to vie with each other which shall produce the most luscious fruit. I have lived here seven years and have known but one failure, and that through frost when peaches were in bloom, which is something unusual. Pears and plums are equally fine. Grapes are generally of the Los Angeles or California variety, which is considered the standard at present. We are introducing a great many varieties that have not yet been proved, with a number of seedlings that promise well; we have introduced the Fiher Tagus, which

promises well to be our raisin grape. William A. Martindale, president of the society, had vines three years old from the cuttings that bore 25 pounds on an average, and some vines on his arbor, same age, 50 pounds; these were the Los Angeles or California. By the Rio Virgin river cutting the Wasatch range of mountains, we are protected from the heavy northern winds and snows; consequently we have to irrigate our land at a very heavy expense.

WHEAT.

Leavenworth county, Kan.—Fall wheat is best suited to our wants, though considerable spring wheat is raised, and to some extent preferred. The only objection I hear urged to fall wheat is the freezing out. By using the drill this can be obviated. Fall wheat the past year yielded exceedingly well. One crop of 100 acres sowed broadcast upon sod, averaged 26 bushels per acre, and a crop of seven acres yielded 37¾ bushels per acre. The grain shrunk somewhat from effects of rust and chinch bug.

Baltimore county, Md.—The majority of farmers are improving in wheat culture; more manures are applied, the drill is used, and the ground put in proper condition. These farmers mostly had slight losses from either midge or rust; this we call the proportionate acreage of good culture. The proportionate acreage of bad culture is too late seeding and without manure. It can be stated that not less than one-fourth of the entire crop is seeded annually in this imperfect manner. These farmers are always unlucky with their wheat crop, generally harvesting less than half an average crop.

King George county, Va.—Farmers of the Rappahannock have thrown into market an unusually large portion of the corn crop. The steamboats have been heavily laden ever since the crop has been fit for shipment, and large quantities await shipment at various landings. The price has averaged about 90 cents per bushel of 56 pounds, being 30 cents less than at the same time last year.

Burlington county, N. J.—We have had no snows to protect winter grain thus far in the season; for some reason it did not start off as well as usual in the autumn.

Smythe county, Va.—Last fall's sowing of wheat is looking very fine at present.

Stafford county, Va.—Whilst the amount of wheat sowed the past fall far exceeds that of the previous year, it is far short of what it was before the war.

Putnam county, W. Va.—The culture of wheat, after having been nearly suspended for about two years on account of the ravages of the midge, was partially resumed two years ago and has now nearly attained its former acreage. Late maturing varieties are still nearly destroyed, but some early varieties, as the Tappahannock or Boughton, and especially the *midge-proof*, are now pretty generally sown, and have proved tolerably remunerative. Late varieties, in the absence of the midge, are much more prolific than the early wheats, but in the presence of that pest the former are all worthless to us. Will the midge ever disappear from a district while the farmers continue to cultivate those varieties of wheat upon which the grub feeds?

Stanley county, N. C.—Our farmers had become convinced that early-sown grain would tiller more, ripen earlier, be less exposed to rust, and yield a greater average at harvest time; and they had shaped their work accordingly. But the early-sown crops were so much injured by the depredations of the grasshoppers during our late falls, that late sowing has again become the order of the day, with the result this year, owing probably to the very cold weather in the early part of December, of a

very backward coming up of the seed. Whole fields this day do not yet show a spear above the ground. More pains than usual have been taken in applying manures and getting the ground in order.

Stokes county, N. C.—Wheat has been almost a failure for three years; consequently there is not much sown.

Abbeville district, S. C.—In this county, I may say in the State, wheat is distinguished by the two classes of early and late wheat, and generally the time for sowing does not vary more than two or three weeks. The month of November is the time for seeding. The late wheat is sowed the early part of the month, and early the latter part. Successful wheat-growers, do not think that a full crop, of either variety, need be expected from seeding later than November. We would prefer to sow in the month of October, and would always do it, but for the fly, which sometimes injures it when sown in that month.

Union county, N. C.—Our farmers were late sowing wheat last fall, many of them not finishing until late in December; consequently much of it has not made its appearance yet. We hope that it will come the first warm spell in January. Farmers report that they have gathered fine crops after the seed had lain in the ground for weeks without sprouting.

Newton county, Ga.—Farmers are late in getting in their wheat, which is unusually backward. The ground has been more thoroughly prepared than usual.

Dawson county, Ga.—Our winter wheat was never put in later or looked much worse as a general thing. Our mode of culture here has been, and is now with exceptions, to sow wheat after a crop of corn, and put in with a common bull-tongue plough, and bestow no other labor except to harvest it. Myself and a few others have turned our stubble land, both oat and clover stubble, with two-horse ploughs, and harrowed in our wheat and then run a roller over it. The wheat put in in this manner looks more regular and more promising.

Robertson county, Tenn.—A considerable portion of the wheat crop, say one-third, was sown later than usual, and about one-half of the late sowing has not come up yet on account of the early winter; that which has come up looks well. The soil was prepared rather better than usual.

Fayette county, Ky.—More than ordinary care was bestowed upon the preparation of the soil for the fall-sown crops. The result so far is an unusually fine appearance. We now have a cheering prospect for the next harvest.

Chardin county, Mo.—We have at least 100 per cent. more wheat sown this season than in any previous year, and the prospect for a good crop was never more flattering at this stage of growth. Missouri is a wheat State, but owing to want of transportation this crop has not been so much a staple as tobacco, hemp, &c. The wheat crop of 1868 was good, reaching a high average per acre. Oats were fine; corn, fair; tobacco, not half a crop and of inferior quality, much of it being badly frosted.

Calloway county, Mo.—A drought injured the corn and potatoes very much, but fall rains made plenty of grass, and brought up the fall-sown wheat and rye, and they now look very well. Fully twice the usual amount of wheat was sown last fall.

Morris county, Kansas.—Last year we had a very poor prospect for wheat, and this year we have a remarkably good prospect.

Atchison county, Kansas.—There is a large breadth of winter wheat sown, and it looked quite promising to the 15th November; from that to the 20th December, the ground was covered with a very damp, heavy snow to the depth of 15 inches and quite cold most of that time. About

the 19th and 20th the snow went off in a hurry; it then turned cold and froze severely and so continued till the 26th, which we fear will be bad for the wheat. Wheat was sown here all the way from the 15th September to the 10th of November.

St. Clair county, Ill.—Owing to the rains sowing was not commenced until the 1st of October, but was finished during that month. Wheat was never put in better. We had a fine Indian summer and wheat looks as well as usual. I believe the flooding rains had a very good effect, as they caused all the wheat and weed seeds to sprout and grow, whereby they would be destroyed, and also a great many insect broods.

Hancock county, Ill.—Winter grain was largely sown; seasonable rains and weather more than usually propitious, not subjected to freezing till snow covered the ground, leaving the crop in excellent condition.

Portage county, Wis.—There being no snow on the ground to protect winter grain, it is generally thought the cold of the past month (15° below zero) has injured it. Nearly the same circumstances existed last year, and when the snow went off in the spring the crops looked green and fine, but as soon as the warm sun struck it so as to be felt the leaves withered, showing to my mind that the cold of December killed it. Grain smothered by too heavy snow shows it at once by a bleached appearance.

Clinton county, Mich.—Land for wheat was last fall in better than average condition. Drought aided cultivation in killing weeds, and farmers felt the necessity of making land fine and in good condition, else wheat would not germinate. Wheat was sown in good season, but for lack of moisture grew very slowly and is not now more than one quarter as large as it ought to be. The winter thus far has been quite favorable.

Ottawa county, Mich.—Winter wheat is not so forward as usual at the commencement of winter, owing to the cold fall, but on the other hand there has not been a surplus of water to kill the wheat in spots as sometimes occurs, so that the prospect thus far is very good for a wet season. No loss as yet has occurred by freezing out. There is a manifest improvement in the preparation of the soil for wheat by thorough culture.

TAPPAHANNOCK WHEAT.

Auglaize county, Ohio.—I had from the Department three years ago a quart of Tappahannock wheat which had increased in 1868 to seven bushels in two seasons. It is the finest and earliest variety we have ever had in this section. The farmer who sowed it thinks he will have over 100 bushels for sale next season. He was offered $4 per bushel for it last fall.

Georgetown, S. C.—The Tappahannock and Mediterranean wheat sent me last year failed entirely from rust.

SWEDISH OATS.

Brown county, Ohio.—The pound of white Swedish oats furnished me two years ago last spring by the Department produced seven bushels, weighing 45 pounds to the bushel. After two years of cultivation I find the quality equal to the original, weighing 45 pounds and yielding largely to the acre. The straw is very strong, standing up well against storms and wet, and the variety seems admirably adapted to this climate.

COTTON AND SUGAR.

Morehouse parish, Louisiana.—You will notice a marked change in my estimate of the cotton crop which is attributable to the fact that the yield of lint to a given quantity of seed cotton has been most remarkable, and

to the further fact that the general yield of seed cotton has been greater than was anticipated, considering the experience of the past two years. The crop was planted early, the long dry season was well adapted to the making of the crop, while the worm made its appearance much later than last year; consequently our crop is a fine one, and has been made at less expense than ever before, and will greatly relieve our impoverished people.

Columbia county, Florida.—The cotton (sea island) crop of this portion of the State was very promising up to the month of July last, when the cotton caterpillar made its appearance, and by its ravages reduced the crop fully one-third. The average yield, so far as I can learn, is not over 400 pounds of seed cotton to the acre.

The sugar crop from cane has been very fair, the average yield being about 1,000 pounds to the acre. Some lands in this county have the past year produced 2,500 pounds of sugar, besides about 150 gallons of sirup, to the acre.

Arkansas county, Arkansas.—The cotton crop has made a better return than I expected in November, but the best that I can hear of is three and one-half bales to the hand. My own crop will be about 200 pounds lint to the acre, but I have some men cropping with me who planted sandy land that have made 450 pounds per acre. I have come to the conclusion that it will make no difference how large a crop will be made, but three and one-half to four bales to the hand will be picked. My cotton book of 1860 shows that a negro man averaged 1,000 pounds per week for 20 weeks; some weeks he lost two days from rain. This is 15 bales; now it takes five men to pick that much cotton.

Saint James parish, Louisiana.—The sugar planters are nearly all done making sugar, except a few who will lose some cane for the want of wood. The cane has yielded very well, and the planters are all well satisfied with the result. I am glad to say that I was not mistaken in the information I sent to the Department. I have from authentic sources that cane has yielded three hogsheads of sugar to the acre, but the average in this parish is about one hogshead and a half. The freedmen have worked well and have done better than I had expected. The fact is that the freedmen are well treated and are punctually paid for their labor; they all seem well satisfied and willing to work. There will be a great demand for labor the coming season, which will cause wages to be higher than last year.

Hale county, Alabama.—Contracts with freedmen the same as last year, viz: one-fourth of the crop, the owner of the land furnishing everything. The estimated yield and profits are as follows, for two hands and one mule—the average cultivation, 30 acres:

Eighteen acres cotton, estimated yield 6 bales (500 lbs.) at 20 cents net		$600 00
Twelve acres corn, estimated yield 24 bushels, at 75 cents		180 00
		780 00
Expenses—use of mule	$25 00	
Food for mule	90 00	
Blacksmithing	10 00	
Rations for hands	80 00	
Wages of two hands, one-fourth of $780	195 00	
		400 00
Net profits		380 00

Hands frequently make four bales. The above is about an average.

SWEET POTATOES, GRAPES, TEA PLANT, ETC., IN FLORIDA.

The crop of sweet potatoes has been extraordinarily good, some farmers making as much as 600 bushels to the acre. I deem the average crop to have been bout 400 bushels to the acre.

The cultivation of the orange and grape is becoming more extensive, though I fear this county is rather too far north for the former. The orange trees, throughout the whole of the northern portion of Florida, were seriously injured by the severe cold of December 25, when the mercury fell at this place to 12° above zero, and many of our small lakes were frozen nearly, if not quite over, with thin ice. It is doubtful if anything like a crop will be returned this year. Most of the small trees of from one to two years old are killed to the ground.

The cultivation of the grape has proved very successful in this vicinity. The Scuppernong yields probably the best. Dr. T. E. Griffin, near this place, from six vines, and only one-half the crop gathered, manufactured 45 gallons of superior wine with the aid of a hand-press.

I enclose a specimen of tea from plants sent me by the Department in 1860, which are growing finely. I have propagated some from cuttings and also from the seed. The plants are now seeding. The leaves when cured are very fragrant. The plant is not affected by cold.

I also send a small cutting of the bark from one of several cork trees I raised from acorns procured from Portugal, and sent me by the Department in 1860. One of the trees is about 18 inches in circumference, and 16 to 18 feet high. They stand the climate well.

KEEPING SWEET POTATOES.

Fayette county, Tenn.—The sweet potato is one of the crops upon sandy loamy soils that yield incredibly where attention is paid them, and return a fine profit, selling usually at the beginning of the year at from $1 to $1 50 per bushel, and from $2 to $5 at bedding season. Great difficulty is encountered in keeping them, as they must be kept at uniform temperature, and are very sensitive to frost. The most successful mode for keeping them is the old pioneer "*dirt bank*" or hill, covered with common boards to protect from weather and rain, after this manner: Elevate the bed upon which the potatoes are to be placed about six inches above the surrounding level; upon this put about two inches of dry hay, then place three boards upright so as to form a triangular tube, and around this pour the roots selected, excluding all that have been injured in digging or prematurely rotted. After this requisite quantity is placed on the hill, cover over with dry straw about two inches and cover with dirt about six inches, leaving the triangular tube open for the heated air from the usual sweating process to escape; and when this sweating has ceased, and when the weather becomes cool or cold, stop up the tube with hay to regulate the temperature, keeping them cool and dry; and when cold freezing weather begins put on an additional layer of earth, at least 12 inches, and more hay on the tube. Having placed a cover over the hill, inclined to the north as low down as the hill will permit, open the hill only on pleasant days on the south side, and replace as soon as practicable the straw or hay and earth.

MAST.

Morehouse parish, La.—The mast this year is the heaviest known for years in this section. The ground in the forests is covered with acorns, which will serve as a substitute for thousands of bushels of corn which would otherwise have been required in the fattening of hogs.

Clark county, Ark.—There is an abundance of acorns this year, and the hogs will fatten in the woods.

CROPS.

Jefferson county, W. Va.—Our Jefferson county, West Virgina, correspondent supplies the following figures for his county for the year 1868:

Name of product.	Number of acres to each.	Total yield.	Average per acre.	Average price.	Total value of products.
Indian corn, bushels	15,880	198,500	12.5	$1 00	$198,500 00
Wheat, bushels	17,505	192,555	11	2 00	385,110 00
Rye, bushels	426	4,686	11	1 40	6,560 40
Oats, bushels	2,072	48,277.6	23.3	65	31,380 44
Buckwheat, bushels	40	480	12	1 25	660 00
Beans, bushels	6	90	15	2 50	225 00
Potatoes, Irish, bushels	135	9,450	70	1 50	14,175 00
Potatoes, sweet, bushels	0.2	10	50	1 50	15 00
Turnips, bushels	10	1,500	150	50	2,750 00
Sorghum, gallons	70	3,150	45	90	2,835 60
Wine, gallons	3.3	165	50	2 00	330 00
Leaf tobacco, pounds	3.5	840	240	10	84 00
Hay, tons	6,190	9,285	1 5	16 00	148,560 00
Total	42,341				789,124 84

By reference to the monthly report of your Department for January, 1868, it will be seen that the total acreage is slightly less than last year, a decrease in the average yield of most of the principal crops, and a decrease in the total value of a quarter of a million dollars.

DISEASES AMONG STOCK.

Greenville county, S. C.—"Joe," a fine bull, one year old, was taken alarmingly ill last week, manifesting extreme pain, accompanied with frothing at the mouth, weakness and stupidity and general torpor and inaction, with cold extremities. He was with difficulty driven under shelter, where he laid at the point of death for four days. He was given one dose of Epsom salts and ginger, followed in the evening by a dose of warm sirup and water, with four tablespoonsfull of ashes. When I heard of Professor Gamgee's prescription, "a pound of Epsom salts, an ounce of aloes in four ounces of sulphur, and two ounces of ginger, the whole mixed in water and poured down the throat of the sick animal," another dose was given of salts, ginger, and sulphur, which was repeated the third day, and on the fourth day "Joe" got upon his legs again and chewing the cud. It had been noticed that the older cattle this year have not eaten the corn stalks in the bottoms as usual, but that "Joe" had been looking very full. We had a very wet season last year, and an unusual amount of smutty corn was produced.

Johnson county, Iowa.—A new sort of cattle disease has broken out in this county. It is said to be dissimilar to the cattle disease so generally prevalent throughout the country, judging from the symptoms. Some think it caused by something the animals have eaten, while others think it a species of cholera. I do not think it will become very prevalent.

Beaver county, Pa.—Sheep are looking badly, and a great number must die before spring. But few farmers are raising lambs. Cattle are increasing in numbers; horses looking well, and more colts being raised than in former years.

Holton, Kansas.—The "black leg," an inflammatory lameness speedily ending in death, has killed some young cattle here. No remedy known.

Morehouse parish, La.—The "black tongue" has made its appearance among the deer in the swamps and is killing numbers of them, and it is feared that the disease may extend to the cattle.

CATTLE DISEASES.

The Connecticut Board of Agriculture, at a meeting at Bridgeport, January 12, 1869, adopted the following resolutions:

Resolved, That the investigation of the Texan cattle disease should be followed up in Texas in order to determine with precision the cause of the malady, and if any means can be adopted for its prevention.

Resolved, That the Connecticut Board of Agriculture learn with alarm and regret of the wide-spread prevalence of contagious *pleuro-pneumonia* in cattle, and respectfully urge on Congress the necessity for the appointment of a commission of investigation and the early adoption of measures for eradicating the disease.

PORK-PACKING.

The following figures represent the amount of pork-packing in the States mentioned, (with the exception of about half a million hogs in Chicago not included in the Illinois statement,) up to January, as gathered from the Cincinnati Price Current. This is a less number than was packed last year at the same date, and fears are expressed that the total quantity may not equal the result of last year's packing. Adding the figures for Chicago and other points not named, it is certain that at least two millions of hogs have been packed in the States mentioned. The second column gives the totals of the entire packing of last season in the same States.

	Packed to date.	Total last season.
Illinois	139,698	237,109
Indiana	202,655	214,830
Kentucky	176,000	153,280
Ohio	412,367	475,684
Iowa	88,172	137,444
Wisconsin	108,000	163,495
Missouri	315,379	326,211
Total	1,442,271	1,708,035

Up to February 1, (as the report goes to press,) the total packing in 152 places, including Chicago, is reported at 2,122,693 hogs, with a probable increase to 2,400,000, against 2,781,180 last season. Should the hogs average the same weight as those of last year, which is somewhat doubtful, this would indicate a falling off of 14 per cent.

Let us see how this tallies with the estimate of the number of stock hogs on hand last autumn in the monthly report of September last. It was as follows:

STOCK HOGS.—A considerable reduction is noted in the number of fattening hogs, and also in their condition as to size and weight, as compared with the average of former years. This is especially true in the southern States, Louisiana alone showing increased numbers; of the western States, only Missouri, Nebraska, Kansas, and Minnesota report above or up to an average stock. Indiana reports 9 tenths; Illinois, 8.5; Ohio, 8.9; Wisconsin, 9.5; Iowa, 9.3; Michigan, 9.7; Kentucky, 9; West Virginia, 9.1; the New England States, 9.5; and the Middle States, 9.4.

Thus, Illinois, the center of the hog market, showed a reduction of 15 per cent., and other corresponding States nearly as much. Thus is the

prediction of the Department figures verified, and those who relied upon its information have been saved from loss in their contracts and purchases. The above is the only statement made relative to hogs for fattening, misapprehensions of newspaper writers to the contrary notwithstanding.

SUGAR AND MOLASSES TRADE OF THE UNITED STATES.

The following figures, taken from tables made up for the New York Shipping and Commercial List, show the total receipts of foreign and domestic cane sugar, unrefined, at the ports named, for the year ending December 31, 1868, as compared with those of the preceding year:

	1868.	1867.
	*Tons.**	*Tons.**
Received at New York	259,073	203,642
Received at Boston	62,237	40,886
Received at Philadelphia	66,121	50,658
Received at Baltimore	53,458	35,241
Received at New Orleans	19,706	16,094
Received at other ports	10,380	9,280
Total receipts of foreign	470,975	355,801
Stock on hand at beginning of the year	25,746	54,244
Total supply	496,721	410,945
Shipments to Canada, inland	8,246	6,231
Stock on hand at end of this year	488,475	403,814
	41,942	25,746
Total consumption of foreign sugar	446,533	378,068
Estimated crop of Louisiana and Texas	23,000	22,500
Total consumption of foreign and domestic sugar†	469,533	400,568

*2,240 pounds. †Not including Pacific States and Territories.

BEST AVAILA

The receipts at the port of New York were derived from the following sources:

	1868.	1867.
	Tons.	*Tons.*
Cuba	262,952	173,942
Porto Rico	20,140	16,481
Demerara	11,591	1,873
Barbadoes	2,232	2,574
St. Croix	2,254	998
Martinique and Guadalupe	1,528	985
British West Indies	427	515
Dutch and other West Indies	319	246
Brazil	3,778	1,638
Manilla	8,886	3,129
Java and China	218	761
European and other foreign ports	211	276
Total receipts of foreign, direct	258,539	203,418
Receipts of milado	534	224
Texas		59
Louisiana	823	296
Other coastwise ports	1,113	2,417
Total receipts	261,009	206,414
Stock on hand at beginning of the year	13,006	31,926
Total supply	274,015	238,340
Exports, foreign	7,291	4,897
Stock on hand at end of the year	266,724	233,443
Taken from this port for consumption	26,169	13,006
	240,555	220,437

The following table will show the average prices of the different varieties of sugar named at the port of New York for the past four years:

	1868.	1867.	1866.	1865.
New Orleans refining grades	$10 62	$10 06	$10 75	$18 75
Cuba, fair to good refining grades	11 32	11 11		
Porto Rico refining grades	11 41	11 11	10 67	14 98
Havana, white	14 77	14 72	15 15	18 36
Havana, brown, Nos. 7 and 9	11 07	10 70	10 56	13 33
Manila	11 06	10 65	10 31	12 73
Brazil	11 35	10 67	10 71	12 98
Melado	7 87	7 40	7 13	9 22

The total consumption of sugars of all descriptions throughout the United States is given as follows:

	Tons of 2,240 lbs.
Cane sugar consumed in the United States on the Atlantic	469,533
Cane sugar consumed in the Pacific States and Territories	18,500
Sugar made from molasses	32,000
Maple sugar	23,000
Total consumption in 1867	543,033
	467,268
Increase in 1868, (about 16¼ per cent.)	75,765

VAILABLE COPY

The sugar product of the world is estimated at 2,299,600 tons, of which Cuba produced nearly one-third. The consumption for the same period was 2,007,700 tons, of which Great Britain and her colonies consumed about 680,700 tons, and the United States 467,268 tons.

MOLASSES FROM CANE.

	1868.	1867.
	Gallons.	*Gallons.*
Total receipts of foreign	55,502,989	47,446,505
Stock on hand, beginning of year	2,396,200	2,254,340
Total supply	57,899,189	49,700,845
Exports to Canada	1,819,220	528,180
Stock on hand at close of year	56,079,969	49,172,665
	3,492,000	2,396,000
Total consumption of foreign	52,587,969	46,776,465
Crop of Louisiana, Texas, &c	3,370,000	3,000,000
Total consumption*	55,957,969	49,776,465

* Pacific States and Territories not included.

The total annual consumption in the United States, with the proportion of foreign since 1850, is given as follows in gallons:

Year.	Total consumption.	Foreign.	Year.	Total consumption.	Foreign.
1868	55,957,969	52,587,969	1859	54,260,970	28,293,210
1867	49,776,465	46,776,465	1858	45,169,164	24,795,374
1866	45,140,110	43,840,110	1857	28,508,784	23,266,404
1865	35,185,038	34,335,038	1856	39,608,878	23,014,878
1864	32,410,325	28,582,325	1855	47,266,085	23,533,403
1863	37,569,088	26,569,088	1854	56,493,019	24,437,019
1862	62,668,400	25,650,400	1853	55,536,821	28,576,821
1861	40,191,556	20,383,556	1852	48,257,511	29,417,511
1860	47,318,877	28,724,205	1851	43,948,018	33,238,278

In addition to the consumption of cane molasses, it is estimated that from 23,000,000 to 25,000,000 gallons of sugar-house sirups and about the same quantity of sorghum and maple sirups, making the total consumption of all kinds of molasses and sirups the past year about 100,000,000 gallons.

TRADE OF NEW YORK.

The receipts of the principal agricultural products during three years at New York were as follows:

	1866.	1867.	1868.
Wheat flour ..... barrels..	2,720,835	2,602,892	2,860,726
Corn meal ..... barrels..	263,833	228,417	285,683
Wheat ..... bushels..	5,729,912	9,640,131	12,988,147
Rye ..... bushels..	1,314,943	765,376	773,351
Oats ..... bushels..	8,811,064	8,030,807	10,221,590
Barley ..... bushels..	5,695,485	2,669,724	2,853,043
Peas ..... bushels..	552,730	668,457	378,423
Corn ..... bushels..	22,189,532	14,979,277	19,053,615
Cotton ..... bales..	671,794	658,911	662,994
Pork ..... packages..	129,880	160,014	99,985
Beef ..... barrels..	70,855	104,633	91,442
Cut meats ..... packages..	100,629	105,134	79,615
Butter ..... packages..	493,061	551,791	502,906
Cheese ..... packages..	742,441	1,302,132	1,736,584
Lard ..... tierces and barrels..	96,750	155,025	102,732
Lard ..... kegs..	8,817	13,763	15,093

The exports during the same period were as follows:

	1866.	1867.	1868.
Wheat flour ..... barrels..	900,084	867,122	1,020,522
Rye flour ..... barrels..	7,552	11,754	7,459
Corn meal ..... barrels..	149,773	136,653	184,117
Wheat ..... bushels..	522,669	4,450,963	5,775,109
Rye ..... bushels..	248,646	454,096	153,093
Oats ..... bushels..	1,190,583	120,195	94,340
Barley ..... bushels..	1,329,842	886,863	----------
Peas ..... bushels..	282,992	684,853	189,167
Corn ..... bushels..	11,679,394	7,981,748	6,002,825
Cotton ..... bales..	381,092	436,800	326,941
Hay ..... bales..	33,503	24,013	38,557
Hops ..... bales..	3,111	3,451	18,317
Pork ..... barrels..	92,352	84,221	82,628
Beef ..... barrels..	28,149	17,235	26,430
Beef ..... tierces..	28,749	38,603	50,004
Cut meats ..... pounds..	29,478,691	33,034,800	36,336,799
Butter ..... pounds..	1,985,423	4,479,456	987,362
Cheese ..... pounds..	38,379,669	53,429,518	41,233,806
Lard ..... pounds..	25,283,303	51,728,801	44,490,487
Rice ..... tierces..	81	133	253
Rice ..... barrels..	9,379	13,192	19,352
Tallow ..... pounds..	15,511,296	18,285,429	13,282,433
Tobacco, crude ..... packages..	104,975	153,601	86,737
Tobacco, manufactured ..... pounds..	5,619,926	7,027,353	7,380,413

TRADE OF CHICAGO.

	Receipts.		Shipments.	
	1868.	1867.	1868.	1867.
Flour, barrels	2, 092, 553	1, 814, 286	2, 239, 497	1, 859, 995
Wheat, bushels	16, 549, 250	13, 090, 868	10, 367, 880	10, 360, 458
Corn, bushels	25, 396, 523	23, 018, 827	23, 771, 330	20, 213, 790
Oats, bushels	14, 449, 476	10, 988, 617	13, 019. 757	9, 732, 146
Rye, bushels	1, 367, 461	1, 386, 204	1, 134, 571	1, 063, 623
Barley, bushels	1, 510, 719	2, 246, 446	788, 760	1, 630, 950
Seed, pounds	26. 841, 510	25, 416, 123	14, 978, 250	11, 263, 227
Broom-corn, pounds	5, 238, 916	4, 203, 161	4, 483, 148	3, 693, 605
Cured meats, pounds	18, 229, 514	11, 607, 264	74, 552, 705	80, 780, 853
Beef, barrels	115	1, 004	50, 707	84, 835
Pork, barrels	47, 510	71, 331	160, 422	168, 783
Lard, pounds	10, 053, 521	9, 837, 362	25, 022, 063	34, 514, 305
Tallow, pounds	1, 934, 688	2, 866, 471	4, 355, 242	7, 519, 267
Butter, pounds	4, 636, 338	2, 813, 699	3, 011, 646	2, 169, 367
Dressed hogs, No	370, 840	297, 816	198, 499	113, 697
Live hogs, No	1, 688, 189	1, 672, 494	999, 324	741, 463
Cattle, No	323. 850	326, 826	206, 357	202, 058
Hides, pounds	27, 776, 982	22, 983, 017	21, 985, 899	20, 721, 963
High wines, barrels	22, 742	41, 660	36, 117	50, 684
Wool, pounds	11, 962, 525	9, 523, 707	11, 001, 836	10, 546, 213
Lumber, feet	992, 566, 000	861, 912, 000	562, 960, 000	522, 113, 000
Shingles, No	536, 936, 000	431, 261, 000	456, 306, 000	401, 815, 000
Lath, No	147, 835, 000	143, 847, 000	98, 433. 000	102, 609, 000
Salt, barrels	683, 622	441, 734	473, 954	461, 979

PRICES OF PRODUCE.

The following comparative prices of certain agricultural products on the first of January for twelve years past in New York city are from the record made by the Journal of Commerce:

	1858.	1859.	1860.	1861.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.
Wheat flour, State, bbl	$4 25	$4 30	$4 30	$5 35	$5 50	$6 20	$6 70	$9 90	$8 00	$10 25	$9 50	$6 80
Wheat flour, western, bbl	4 25	4 60	5 20	5 30	5 50	6 25	6 90	10 45	8 90	11 35	9 55	6 60
Rye flour, bbl	4 00	3 75	4 00	4 00	3 87½	4 50	6 00	.....	5 75	7 00	8 75	.....
Corn-meal, Brandywine, bbl	3 25	3 40	3 90	3 15	3 00	4 50	6 00	8 80	4 60	5 25	6 50	5 50
Wheat, Michigan, bush	1 20	1 25	1 50	1 45	1 50	1 47	1 59	2 65	2 60	3 20	3 20	2 12½
Wheat, California, bush	.....	.....	.....	.....	.....	.....	.....	.....	.....	3 00	3 05	2 15
Wheat, No. 1 spring, bush	95	83½	1 16	1 18	1 30	1 30	1 46	2 29	1 87½	.....	2 45	1 70
Rye, western bush	1 10	78	92	75	83	85	1 27	1 73	98	1 23	1 80	1 50
Oats, State, bush	43	53	46½	37	42	70	92	.....	62	69	87	78
Oats, western, bush	46	55	45½	38	42	69	93	1 09	62	64	84	76
Corn, old wst'n, mix'd bush	65	78	90	72	64	78	1 30	1 87	95	1 12	1 41	1 10
Corn, new southern, bush	62	75	88	72½	68	.....	.....	2 08	98	1 15	1 40	1 05
Cotton, middl'g, Orleans, lb	9	12⅜	11⅛	12⅝	35½	67½	81	1 19	52	35	16	26
Hay, shipping, 100 lb	65	80	1 00	90	36	67½	81	.....	53	36	16½	26½
Hemp, Manilla, lb	7	6½	6½	5⅝	77½	80	1 40	1 50	80	1 28	1 20	90
Hops, lb	10	15	16	25	7½	8½	12⅜	18½	12	12	10½	11½
Pork, mess, bbl	15 40	17 60	16 37½	16 00	20	22	30	50	60	60	60	20
Pork, prime, bbl	13 00	13 00	11 75	10 50	12 00	14 50	20 00	41 00	29 12	19 12	21 00	28 00
Beef, plain western, bbl	12 50	9 50	9 50	9 00	8 50	12 00	15 00	35 50	23 00	17 00	18 00	22 00
Beef, prime mess, tierce	10 00	9 00	9 00	6 00	11 00	13 00	12 00	21 50	18 00	16 00	16 00	14 00
Beef hams, extra, bbl	15 50	15 00	14 50	14 00	5 50	20 00	23 00	.....	.....	.....	32 00	28 00
Hams, pickled, lb	8½	7½	9½	8	14 50	15 50	18 00	26 50	33 00	35 00	32 75	32 00
Shoulders, pickled, lb	6½	6½	6½	5½	6	7	10	20	16	12½	12	15½
Lard, western, lb	9½	11½	10½	10⅝	4½	5½	8	18	13	10	8½	11
Butter, western, lb	16	18	16	14	8½	9¾	12	24	19½	13	12½	17½
Butter, prime, State, lb	20	20	20	18	15	20	26	45	35	32	45	40
Cheese, fine factory, lb	8	9	11	10	19	23	29	60	40	43	.....	48
Rice, good, 100 lbs	3 25	3 50	4 20	4 00	7 00	7	12	16	24	18¾	17	15
Seed, clover, lb	9½	9½	8½	8½	7½	10½	.....	.....	*8½	†9	8½	19½
Sugar, Cuba nav, lb	7	7	7⅞	6½	8½	9½	12	26	13	13	12⅝	9½
Sugar, refined bards, lb	10⅜	9½	10	5½	10½	13½	16½	28½	18½	15	16⅜	13
Tallow, lb	10	10½	10⅜	9½	9⅜	10½	12	17½	13¾	11½	10½	11½
Wool, Ohio fleece, lb	27	42	40	30	50	62	80	95	70	60	48	11¼
												57

*Gold. †Currency.

LIVE STOCK RECEIPTS AT NEW YORK.

	1868.	1867.
Beeves	293,101	289,831
Milch cows	5,382	3,334
Veal calves	82,935	69,542
Sheep and lambs	1,400,623	1,162,859
Swine	976,511	1,079,343
Total	2,758,552	2,603,777

The cattle were supplied from the following sources, Illinois sending about 56 per cent. of the whole number:

Source of supply.	Number.	Source of supply.	Number.
Illinois	165,668	Iowa	1,950
New York	28,757	Connecticut	2,705
Ohio	27,308	Michigan	1,506
Kentucky	19,375	West Virginia	1,346
Indiana	14,650	Kansas	818
Texas and Cherokee nation	11,300	Nebraska	266
Missouri	9,781	Massachusetts	249
Pennsylvania	3,455	New Jersey	200
Canada	3,068		

The average price of beeves for the year was 15⅜ cents per pound.

LIVE STOCK AT CHICAGO.

We are indebted to George T. Williams, assistant secretary, for the following reports of receipts and shipments of live stock at Union Stock yards, Chicago, Illinois, for the year ending December 31, 1868:

RECEIPTS.

Source of supply.	Cattle.	Hogs.	Sheep.	Horses.	Mules.
Illinois Central railroad	60,902	354,946	65,014	200	2
Chicago and Rock Island railroad	35,616	218,029	16,324	20	.....
Michigan Central railroad	2,215	15,274	6,942	83	74
Pittsburg, Fort Wayne, and Chicago railroad	444	5,869	2,684	429	141
Columbus, Chicago, and Indiana Central railroad	1,392	3,857	5,436	16	.....
Chicago and Alton railroad	64,952	260,145	41,324	96	17
Chicago, Burlington, and Quincy railroad	108,901	574,468	69,497	293	.....
Chicago and Northwestern railroad	46,758	302,140	42,687	71	.....
Michigan Southern railroad	796	30,444	19,498	418	.....
Driven into yards	2,548	1,616	2,069	.....	58
Total	324,524	1,706,782	270,875	1,626	292

SHIPMENTS.

Illinois Central railroad	2,951	1,029	1,715	52	.....
Chicago and Rock Island railroad	2,521	332	421	108	127
Michigan Central railroad	51,840	167,299	47,428	54	.....
Pittsburg, Fort Wayne, and Chicago railroad	82,331	462,352	15,711	20	.....
Columbus, Chicago, and Indiana Central railroad	9,842	36,584	1,557	5	.....
Chicago and Alton railroad	2,727	1,110	.....	50	.....
Chicago, Burlington, and Quincy railroad	1,092	.....	3,092	40	38
Chicago and Northwestern railroad	4,151	1,711	2,310	1,355	121
Michigan Southern railroad	58,529	349,912	9,539	153	.....
Total	215,987	1,020,329	81,773	1,837	286

LIVE STOCK OF ST. LOUIS.

The following table shows the receipts and shipments of live stock a St. Louis for the year ending December 31, 1868:

RECEIPTS.		SHIPMENTS.	
Cattle	148,403	Cattle	40 110
Sheep	110,269	Sheep	9 2
Hogs	304,669	Hogs	

LIVE STOCK RECEIPTS AT BOSTON.

	1868.	1867.	1866.
Cattle	102,421	103,706	118,083
Sheep	482,874	414,813	400,546
Swine	131,773	111,448	128,498

SCUPPERNONG WINE.

The following is the result of an analysis of a sample of Scuppernong wine received at the Department:

Suspended matters	0.13	
Alcohol, (by weight)	10.23	
Alcohol, (by volume)	12.50	
Fruit sugar, (*i. e.*, glucose)	2.5	5.40
Cane sugar	2.9	
Extract	8.02	

FORESTS.

Hon. J. M. Edmunds, late Commissioner of the General Land Office, communicates the following paper upon a subject meriting more attention than it has yet received:

THE USES OF FORESTS.

The progress of population and settlement, not only on this, but on the other continents, has demonstrated the fact that that country only is desirable and practicable as the habitation of civilized man which is clothed with, or is in the vicinity of forests.

Besides furnishing the best and most economical material for the convenience and many of the necessities of civilized society, forests fertilize and moisten the earth, soften and modify the climate, and protect men, animals, and vegetation from the blighting effects of the unbroken rays of the sun, and dry and sweeping winds, which everywhere prevail on extended treeless plains, deserts, or wastes. So marked and universal are these effects, that even the casual observer may trace with accuracy, by the absence or abundance of animal and vegetable life, the line between the rainless regions of the earth and those which are enriched and fertilized by the outpouring of the rain clouds, which in our country, except upon the mountain plateau, everywhere abound.

To the pioneer, forests are a necessity. They supply building material, tools, carriages, fuel—in fact are the reliance of the frontier settlers for almost all domestic purposes, nor can a substitute be found which is within the means and accessible to the advance settlements. It is not until the facilities of economical transit, and the capital and skill of the miner and manufacturer have occupied the country, that the various substitutes for timber, for multifarious domestic uses, can be obtained even by the more opulent, and for the indigent, structures and implements of timber must, under the most favorable circumstances, continue to be the main reliance.

It is true, that for buildings, vessels, bridges, and many other structures, and for machinery, tools and utensils of almost every description, stone, brick, iron, and other expensive materials, have been substituted for timber in the older and wealthier communities; but it is not true that these inventions, numerous and important as they are or may be, have diminished or will lessen the consumption of timber. It must be borne in mind, in this connection, that new uses have been found for timber as well as for its more durable and expensive substitutes; that, while in the older sections of the country its use has been discontinued for many purposes, it has been applied to new and varied uses by a large and rapidly increasing population, and that more, much more, is now annually consumed than at any former period since the settlement of this continent.

If, then, forests are essential for domestic uses, and their consumption annually increasing in the ratio of population; if they are essential for the protection of men, animals, grains, grasses, and fruits, as none will deny, but all admit, what should be done to stay their waste; and what should be the policy of the nation and people relative to their growth and preservation?

THEIR WASTE.

Till within a short period the advancing column of population has been composed of those who have been forced to contend with the densely timbered region east of the Mississippi, carrying with them habits and tastes unsuited to the vast treeless plains now facing our frontier settlements.

Upon the first settlement of the continent communities were weak and scattered, the open prairies of the west were unknown and inaccessible, timber for every purpose was abundant and free, forests were the great hindrance to progress and cultivation, the immense growth on the Atlantic and western slope of the Alleghanies was disproportioned to the wants of the population, facilities for its transport to the seaboard did not exist, and its destruction was an apparent necessity. The inconveniences of a treeless waste were unknown and the consequent prospective value of the forests unthought of and unappreciated. For generations the advance settlers continued the war of destruction upon the most extended and valuable forest on the globe. And thus it is, that the whole people of the country, after having been taught that they could not live with the forests, have now to learn that they cannot live and prosper without them.

While the war upon the timber reserve was conducted with the greatest vigor, the population was sparse and poor, yet, after a century and a half of toil it has worked entirely through this almost impenetrable wilderness, leaving but scattered fragments behind, and now, confronting a treeless waste, is forced to draw its supplies of an essential commodity, which requires a century for reproduction, from a diminished and constantly and rapidly diminishing supply, and this for a population tenfold greater than that with which our career as a nation was commenced.

Now, the demand, the need for indispensable forest products, comes from both ways; then it came from neither. Now, there is a vast population to consume; then, there was only a feeble one to destroy. Now, the forest cannot supply the demand for its products without certain prospective exhaustion; then, it did not afford space for settlement and cultivation except through its destruction. Until recently, as new sections of the country were approached by the settlers, new sources of timber supply were opened; now, the country to be peopled is the most destitute, and the advance of settlements but increases the demand upon the already diminished reserve.

Except in the mountain regions, nearly the whole vast surface, from the Atlantic to the Mississippi, has been despoiled of its primeval forest growth by preparation for and subjection to cultivation; and it is only the inarable mountain lands which have been permitted to reproduce the forests of which they have been denuded. Even this is not due to the foresight or prudence of the people, but to the poverty of the soil and the obstacles to cultivation presented by a broken surface. Nowhere are the flat, arable lands been left to reproduce the forest growth. The inviting fertility of the soil, the great length of time required for forest reproduction, the avarice of the people, and a rapidly increasing population, have all combined in the appropriation of the land to such uses as promise immediate returns. And such is the policy still prevailing throughout the whole of the lately timbered region.

The absolute waste is less than formerly, but the waste and consumption are far greater than at any former period, and no considerable effort has anywhere been made to produce, nor is any such effort likely to be made until the people meet with actual destitution, and its legitimate accompaniments of sweeping winds, parching droughts, and impoverished or unproductive fields. Fortunately, some of the more advanced settlers on the great plains have already gained this experience, in time, it is hoped, to impress upon the whole country the importance of immediate precaution and action.

It must not be forgotten that, to this time, our forests have met the demands and destruction only of a gradually rising population—from three to thirty-eight millions—which was, for nearly the whole period, driving deeper into an unbroken primeval supply; whereas the people have now gone through and surrounded this great timber reserve, and already entered on the margin of the vast treeless plains and plateau, with three-fourths of the original store

consumed, the demand accelerated, and the number of consumers rapidly rising from 38,000,000 to 50,000,000. Only a simple mathematical calculation is necessary to determine the proportion which the demand and supply will bear to each other at the close, as compared with the commencement, of this century.

Extend the time for another 50 years, with the added population, and our forests will be exhausted, the demand for their products quadrupled, and the country and people suffering for the protection which forests would afford.

Maine, Michigan, Wisconsin, Minnesota, and Florida are the only States east of the Mississippi which now export any appreciable quantity of timber more than they import, and the reserve in these States is being rapidly cut away to supply the markets from the Atlantic to the Rocky mountains, and from the great lakes to the gulf. But a few years will elapse before the reserve in these exporting States will be reduced to, or below, the demands of their own people.

The mountain and plateau region, occupying the interior of the continent, has only a moderate supply in the valleys and gulches, and upon the foot-hills and lower mountain elevations. No supplies can be drawn from this region for the older States, or even for the great plains, without exausting a reserve which is already below the immediate prospective demand.

In the Pacific States and Territories there is still an adequate supply, but not beyond the early prospective wants of their own people. The States bordering the Mississippi on the west have no surplus, and most of them are at this moment importing to meet the demands of even their sparse population. What sources are they to draw from when the number of their people shall be doubled, and the forests of Michigan, Wisconsin, and Minnesota shall have been exhausted—events which will occur at or about the same time?

Arizona, New Mexico, Colorado, Wyoming, Montana, Idaho, and Dakota have but a meagre supply, not sufficient for a population as dense as now occupies Ohio, Indiana, or Illinois.

Only the newly acquired Territory of Alaska remains to be considered. Very little is known of its timber resources, but in much the largest portion it *is* known that its rigorous climate precludes the growth of valuable forests, and it is not too much to presume that the timber in that Territory will be insufficient to meet the demands of the trade now opening with the great populations of China and Japan.

Considering, then, the present and prospective forest products in this country only in the light of their necessity and economy for domestic purposes, is it not time that waste should cease and production begin? But considering forests and their effects as essential to the protection of men, animals, fruits, and grain, and their value in inducing moisture, protecting the soil and tempering the climate, is it not doubly important that every section of the country should retain if it has them, and if it has them not, should immediately engage in their production, at least to the extent of supplying local use and protection?

THEIR PRESERVATION.

The growth of forests is a slow process and promises appreciable returns only at a distant period, but their preservation may be entered upon at once, not only without cost but with immediate advantage. And this is perhaps all that would be required in the whole of the recently timbered region east of the Mississippi. In all this region wanton destruction should be immediately stopped, and upon all lands not required for cultivation the spontaneous growth of timber should be permitted and reproduction should be encouraged, and if need be commanded by protective statutes. In all the mountain ranges, on abrupt hillsides, along the borders of streams, lakes, and water-ways, in swamps, surrounding every farm, in every village, around every rural cottage, school-house, and church, on the sides of every highway, and railroad, in every cemetery, and on public parks, squares, and grounds, the growth of forest trees should be promoted by their protection, and by planting where they do not spontaneously spring up.

These precautions alone would save the country from the fearful effects of the absence of forests. They would afford protection from destructive winds and shield crops, animals, and soil from the burning and unbroken rays of the sun, and would in a brief period answer a part of the demand for domestic use, and to that extent relieve the scanty remains of the original reserve from the increasing draught of a growing population.

But one additional measure of preservation and growth might with advantage be adopted, and that is to devote a larger area to the planting or reproduction of forests and take compensation by the superior cultivation of the diminished surface. There are few cultivators who would not doubly gain by the adoption of such a policy.

The construction of railroads and railroad machinery is a heavy draught on the timber reserve, but this is more than compensated by the ready and economical transit which these roads afford for the products of the coal mines from the interior to the centres of population and mechanical industry. And as an additional means of shielding the timber reserve from exhaustion, the most effective will be the construction of railroads from the densely populated regions to the coal deposits and operating them upon a principle which shall so cheapen transit as to induce the substitution of coal as fuel, not only in the manufacturing districts, but in the well-peopled agricultural sections. But on the great western plains and plateau,

now practically destitute of both forests and people, a system of planting and production must be early commenced, or the advance of population into that region will be materially retarded. It must be shown by experiment that forests will grow and that they will afford the protection and induce the moisture essential to agricultural prosperity, and this before settlers will incur the discomforts and hazards incident to their absence. And here we are brought to the consideration of the possibility of clothing these naked plains with life-giving and perpetual forests and the measures which will best and soonest accomplish that desirable and essential end.

THEIR GROWTH.

In all of the States east of the Mississippi it needs but that the hand of destruction shall be stayed, and that a sufficient area shall be set apart on which forests shall be permitted, and their growth protected; for on almost every acre the roots or germs necessary to reproduction still exist, and where they do ot, the ground will be readily seeded from the adjacent forests. The fertility of the soil and the moisture of the climate, superadded to these local advantages, would, with the simple permission of man, very soon reclothe the waste fields and places with abundant forests, which would prove a source of wealth and comfort to succeeding generations. Why, then, shall this policy not prevail? Why shall it not be embraced by the people and sanctioned and encouraged by statesmen? Certainly no subject is more worthy the attention of both, and no great measure of public economy can be entered upon with so little inconvenience, without cost, and which promises such incalculable advantages in the future.

THE PLAINS AND PLATEAU.

The great treeless plains within the United States and Territories, and between the Mississippi on the east and the Pacific on the west, present an untimbered surface of 1,400,000 square miles; and even this estimate is deemed too low by the most careful observers. It is upon the basis that, in that region, skirting the water courses and within the mountain ranges, there are 600,000 square miles not wholly without timber, which is probably true, but it is equally true that at least one half this surface, 300,000 square miles, can furnish but a very meagre supply, and that of an inferior quality.

It will be seen that the totally destitute surface in the timberless region exceeds by more than 400,000 square miles the whole of the once heavily timbered section through which our people have passed.

Having considered what may be done in the latter region towards the protection and reproduction of forests, the inquiry as to the timberless section only remains to be answered. Certain it is that it must, to some extent, be supplied with forests, or it cannot be successfully and densely peopled. Is this practicable? It is practicable, and for the following reasons:

1st. Except in the volcanic regions, which occupy but an inconsiderable surface, the soil is everywhere fertile and productive, and contains all the necessary food for plants and forests. Along the mountain ranges and the border of streams and lakes are fringes of timber, protected from the annual fires which devastate the plains by the moisture from the water courses and the melting snows.

2d. These belts of timber demonstrate the adaptability of the soil and climate to forest productions, and will strew the adjacent plains with plants and seeds, which require only protection to become forests, in their turn furnishing plants and seeds for the circle thus enlarged, and bringing moisture to protect and quicken their growth. Thus, by the simple process of protection, forests may be gradually extended over the great plains, from all the mountains and water courses bordering on or traversing these naked wastes. By plowing large tracts in the vicinity of these timbered belts, and leaving the upturned soil uncultivated to receive the seeds scattered by the birds and wind, the growth of forest plants would be aided and multiplied to an indefinite extent, and thus millions of trees might be grown in place of the hundreds which now struggle up through the unbroken prairie sward.

3d. To the extent that planting has been intelligently performed on the plains, the production of forests has been a success. Trees to the number of millions have been produced from the seed of almost every forest species, by the unaided efforts of a single association in Nebraska; and individual settlers, for the protection of their homesteads, orchards, and crops, have planted with success, though upon a limited scale. Enough, however, has been accomplished to demonstrate the feasibility of clothing the plains with forests by individual and associated efforts.

With these facts and suggestions, the necessity and utility of forest preservation and culture are submitted to the American people, and especially to that portion of them engaged in agricultural pursuits, as measures of paramount importance, and demanding their immediate and considerate attention and decisive action.

FACTS FROM VARIOUS SOURCES.

An Umatilla county, Oregon, correspondent writes that he has an ox six years old which measured, when taken up on the 15th of November last, 17 hands and 3 inches in height, 8 feet 8 inches around the smallest place back of the shoulders, 9 feet 9 inches around the bulge of the ribs, and 8 feet 11 inches just before the hips; this was just as he was taken off the grass, without ever having been fed, winter or summer, except a little before he was four years old. Weight not known, there being no scales in the neighborhood.

[In answer to the correspondent we give the weight and measurement of the celebrated short-horn ox "Constitution," raised by John Saunderson, of Franklin county, Massachusetts, and slaughtered in 1862: live weight, 3,300 pounds; dead weight, 2,473 pounds; 6 years old; length from horns to root of tail, 9 feet 3 inches; height, 6 feet 3 inches; girth back of shoulders, 10 feet 8 inches; girth front of hips, 11 feet 6 inches; breadth across, 3 feet 6 inches. In 1796 a Durham ox, six years old, weighed 3,024 pounds, and after being exhibited for five years dislocated a hip, and after two months suffering and losing much flesh was slaughtered, the dead profitable weight of meat, hide, and tallow, reaching 2,620 pounds.]

The village of St. Albans, Vermont, near lake Champlain and the Canada line, is becoming as celebrated for its dairy products and mineral waters, as it was notorious a few years since for "the raid." During the year 1868 the shipments of butter from that village, mostly on Tuesdays, amounted to 2,606,880 pounds, worth at the depot 40 cents per pound, or $1,042,752. The shipments of cheese amounted to 948,270 pounds, worth 14 cents per pound, or $132,757 80. Mineral water to the amount of 28,204 dozen quart bottles, worth in the aggregate $105,765, was also sent from that depot. The total receipts for the three articles named amount to $1,281,274. The butter and cheese went to the Boston market; the spring water to all parts of the world.

Grand Isle, in Lake Champlain, the largest of the islands composing the county of Grand Isle, Vermont, has an area of 18,153 acres. An intelligent and long-time resident gives a census of some of the products of the island in the year 1868, as follows:

Wheat	14,123 bushels.	Oats	38,564 bushels.
Buckwheat	12,892 "	Corn	18,958 "
Barley	3,514 "	Beans	1,272 "
Peas	1,443 "	Potatoes	12,868 "
Apples, common	15,840 barrels.	Rye	271 "
Apples, from grafts	1,343 "	Wool	51,563 pounds.

Our F yette county, Tennessee, correspondent says there never has been a more disastrous season for farm stock, there having been great havoc among horses and mules, attributable to the feeding of rotten or immature grain.

An Arkansas correspondent writes:

If we can prevail on Congress to put a tax of $2 on each dog it will enable the south to raise sheep enough to feed themselves and pay their proportion of the national debt. It seems hard that a portion of our people should be allowed to hold a lot of filthy dogs to prey upon the industry of the country. You will do us incalculable good if you will use your endeavors to get a law to tax all dogs.

The chicken cholera destroyed from $600 to $700 worth of poultry in Jefferson county, West Virginia, during 1868. One farmer lost his entire stock of chickens and turkeys.

The grasshoppers took the buckwheat and early sowed fall wheat in Douglas county, Kansas.

Peanuts are reported as the principal money crop of Surry county, Virginia. Large quantities are raised and the crop is remunerative.

Large quantities of sweet corn are raised and canned in Cumberland county, Maine, the crop paying from $80 to $125 per acre.

Our Kendall county, Texas, correspondent writes that not less than fifteen mowing machines were at work on the prairie in that immediate vicinity (Boerne) during the past season, an encouraging mark of improvement in farm operations.

The product of the precious metals in the United States during 1868 is estimated at $66,500,000, divided as follows: California, $20,000,000; Nevada, $18,000,000; Montana, $12,000,000; Idaho, $6,000,000; Oregon, $5,000,000; Colorado, $4,000,000; Washington Territory, $1,000,000; Arizona, $250,000; and New Mexico, $250,000.

The inspections of leaf tobacco at Baltimore for the year 1868 amounted to 37,959 hogsheads against 58,996 hogsheads for 1867, and the exports were 32,800 hogsheads in 1868 against 61,930 hogsheads for 1867, showing a falling off of about 36 per cent. in inspections and about 47 per cent. in exports; of the tobacco inspected 27,064 hogsheads was Maryland, 9,644 hogsheads Ohio, and 1,251 hogsheads Kentucky and other kinds.

The total exports of petroleum from the United States in 1868 reached 99,281,750 gallons against 67,052,029 gallons in 1867, being an increase of nearly 50 per cent.

ITEMS FROM CALIFORNIA.

About a year ago a farm of 160 acres was purchased in Plumas county at a cost of $3,700. The crops raised in the past year were 1,500 cwts. of wheat, 2,000 cwts. of barley, 1,000 sacks of potatoes, 140 cwts. of flaxseed, and $120 worth of mustard seed gleaned from the wheat. The barley sold for $2 per cwt., realizing enough to pay for the farm. The flaxseed sold at $4 per cwt. The entire products of the farm sold for $7,500, or twice the cost of the farm.

The hop crop of California in 1867 reached 457,000 pounds, as reported by the county assessors. The estimated cost of planting, cultivating, picking, and baling 20 acres in this crop is given as follows in the Stockton (San Joaquin county) Independent: 1,400 poles, $1,400; hop roots, $400; planting and cultivating, $300; picking and drying, $250; press for baling, $50; two ploughs and cultivators, $50; 6 hop boxes, $60; 2 crowbars, $5; 40 hop sacks, $40; a pair of horses, $200; wagon and harness, $200—$2,955. Returns: Twenty acres of hops, 1,500 pounds to the acre, 30,000 pounds, at 37½ cents per pound, $11,250. The crop of 1866 sold at from 70 to 80 cents per pound, and that of 1867 realized 50 cents per pound in the domestic markets.

The wheat exportations from San Francisco from June 30 to December 31, 1868, reached 4,770,857 centals against 4,049,992 centals for same time in 1867; and of flour 145,891 barrels against 153,387 barrels in 1867.

The Sacramento Bee says:

We are told that one man in Berryesa valley hired 2,000 acres of land last year, laid it down in wheat, raised 75 bushels to the acre, and at two cents per pound his profit would be over $50,000. Many men we hear of hired land last year in the lower valleys, expended a few thousands in seed and labor, and cleared from $5,000 to $15,000 each.

The steam plough Mayflower (Standish's new patent) is said to be doing its daily work upon the farm of W. Kellebor, near Pacheco, with the regularity of any well-trained team. About 20 acres is the average daily amount of ground cut by the plough, and but for the tendency of the boiler to foam when crowded beyond a certain point, nearly twice that quantity could be equally well done. The boiler has less tendency to foam than at the outset, when it was entirely new, and is improving in that respect with use; but the inventor is satisfied that the difficulty will be overcome entirely with a boiler differently constructed.

There promises to be a large increase in the culture of the silk-worm in California the present year. The State offers a premium of $300 for every 100,000 cocoons made during the season, and it is estimated that not less than from 40,000,000 to 50,000,000 cocoons will be the result, costing the State about $100,000, which might be largely increased, but for the lack of food for the worms.

The Sacramento Bee says that "from the foot-hills about the city of Nevada to the bay of San Diego, the soil and climate is as well adapted to the product of silk as of wheat, with the probabilities that the production of silk will be by far the most profitable. The demand for mulberry cuttings is great, and eggs are not to be had at any price, the surplus of last season having been sent to Europe. There will be eggs enough, however, after the first crop in the spring."

A California correspondent, writing in reference to silk culture in that State, says that he is informed that there is at this time a very superior variety of the silk-worm cultivated in Georgia. If any of our Georgia correspondents can give us any information upon this point we shall be pleased to hear from them.

The Bulletin announces the arrival at San Francisco of a brig from Tahiti, with about 30,000 pounds of fungus gathered on the trees in the southern part of the Society islands, and packed in bags woven from slips of booroa bark, the same wood from which the orange crates are made. This fungus is in appearance like very thin and dirty India-rubber, and is to be shipped to China for use in making "soup" in the celestial kingdom. The value is about 12½ cents per pound at the islands, and about 100,000 pounds are produced there annually.

William Bikler, of Sonoma county, California, whose ranch embraces from 6,000 to 8,000 acres, has recently drained Tule lake, covering nearly 300 acres, by digging a deep canal about one and a half miles long, at an expense of from $20,000 to $30,000. The soil is exceedingly rich, being decomposed vegetable matter. The editor of the California Farmer acknowledges the receipt of nine potatoes, grown on this reclaimed land, the largest of which weighed 5½ pounds and measured 25 inches in circumference. The nine weighed 25 pounds and 7 ounces.

METEOROLOGY.

[Compiled in the Department of Agriculture, from reports by observers for the Smithsonian Institution. Notes of weather, &c., up to January 16, and tables to January 18. All received after these dates will only be used in the Annual Report, and by the Smithsonian Institution.]

DECEMBER, 1868.

Table showing the highest and lowest range of the thermometer, (with dates prefixed,) the mean temperature, and amount of rain and melted snow, (in inches and tenths,) for December, 1868, at the stations and by the observers named. Daily observations at 7 a. m., and at 2 and 9 p. m.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MAINE.				°		°	°	*In.*
Steuben	Washington	J. D. Parker	8	38	27	— 8	22.0	2.10
West Waterville	Kennebec	B. F. Wilbur	8	39	31	— 7	19.5	1.60
Gardiner	do	R. H. Gardiner	8	39	27	—10	20.9	2.04
Standish	Cumberland	John P. Moulton	21	38	25, 27	— 2	21.3	2.06
Norway	Oxford	Howard D. Smith	8	36	27	—18	16.6	2.06
Cornish	York	Silas West	21, 22	34	27	— 8	18.5	2.96
Cornishville	do	G. W. Guptill	21	36	27	— 1	19.5	2.65
Averages							19.8	2.21
NEW HAMPSHIRE.								
Stratford	Coos	Branch Brown	21	33	27	—20	13 9	2.45
Shelburne	do	F. Odell	8	36	27	—26	16.2	2.19
North Barnstead	do	C. H. Pitman	10	54	25	0	22.8	1.69
Goffstown Centre	Hillsboro'	Alfred Colby	21	39	25	0	24.0	1.48
Averages							19.2	1.95
VERMONT.								
Lunenburg	Essex	H. A. Cutting	21	32	27	—30	13.8	2.45
North Craftsbury	Orleans	Rev. E. P. Wild	21	35	19, 27	—10	14.5	2.51
Randolph	Orange	Chas. S. Paine	17, 21, 22	33	27	—24	16.6	2.82
Woodstock	Windsor	Doton & Miller	21	34	27	—25	14.5	2.50
St. Albans	Franklin	A. H. Gilmour	21	35	19	—19	15.3	.....
West Charlotte	Chittenden	Miss M. E. Wing	21	39	24, 25, 26	0	21.9	1.23
Middlebury	Addison	H. A. Sheldon	21	36	27	—13	18.8	1.09
Averages							16.5	2.10
MASSACHUSETTS.								
Kingston	Plymouth	G. S. Newcomb	21	52	25, 27	10	31.0	3.10
Topsfield	Essex	S. A. Merriam	7	43	25, 27	2	23.1	1.21
Georgetown	do	S. A. Nelson	22, 29	42	25	0	23.5	3.15
Newbury	do	John H. Caldwell	21	44	25	2	24.9	.....
Milton	Norfolk	Rev. A. K. Teele	21	48	27	4	37.2	1.55
Cambridge	Middlesex	Rev. J. B. Perry	21	42	27	3	26.0	.....
North Billerica	do	Rev. E. Nason	28	48	26	1	25.4	.....

Table showing the range of the thermometer, &c., for December—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MASS.—Continued.				°		°	°	In.
West Newton	Middlesex	John H. Bixby	21	45	27	2	26.3	0.88
New Bedford	Bristol	Samuel Rodman	21	48	25	6	28.5	2.23
Worcester	Worcester	Jos. Draper, M. D.	21	44	25, 27	3	23.9	1.85
Meredon	do	Jno. G. Metcalf, M. D	21	44	27	1	22.5	.....
Lunenburg	do	G. A. Cunningham	21	40	25	— 1	22.6	1.53
Amherst	Hampshire	Prof. H. S. Snell	21	46	27	— 5	22.8	1.47
Williams College	Berkshire	Prof. A. Hopkins	21	38	25	0	21.8	2.49
Hinsdale	do	Rev. E. Dewhurst	21	36	19	— 2	19.5	1.89
Averages							25.3	1.94
RHODE ISLAND.								
Newport	Newport	Wm. H. Crandall	21	46	25	5	26.4	2.54
CONNECTICUT.								
Pomfret	Windham	Rev. D. Hunt	21	40	24, 25	4	25.0	1.10
Columbia	Tolland	Wm. H. Yeomans	21	40	24, 27	4	25.7	.....
Middletown	Middlesex	Prof. John Johnston	21	41	25	3	23.5	2.38
Colebrook	Litchfield	Charlotte Rockwell	21	33	11, 24	— 1	19.5	.....
Waterbury	New Haven	Rev. R. G. Williams	21	44	25	2	25.1	3.31
Brookfield	Fairfield	Rev. S. W. Roe	21	48	25	— 2	25.7	3.50
Averages							23.8	2.57
NEW YORK.								
Moriches	Suffolk	E. A. Smith & daugh's	21	54	25	8	32.3	3.92
South Hartford	Washington	G. M. Ingalsbe	21	38	27	—13	21.9	3.15
Garrison's	Putnam	Thomas B. Arden	17	44	24	7	25.2	2.02
Throg's Neck	Westchester	Miss E. Morris	21	48	25	8	28.4	.....
White Plains	do	O. R. Willis	2, 8	50	24	9	28.5	.....
Deaf and Dumb Inst.	New York	Prof. O. W. Morris	21	43	25	10	28.1	4.27
Columbia College	do	Prof. Chas. A. Joy	21	41	25	10	28.0	2.02
Flatbush	Kings	Rev. Eli T. Mack	21	46	25	11	28.9	2.42
Newburgh	Orange	Jas. H. Gardiner	28	44	24	8	26.9	2.14
Minaville	Montgomery	Prof. J. W. Bussing	21	34	19, 27	— 5	18.1	3.46
Gouverneur	St. Lawrence	C. H. Russell	20	39	27	—26	19.3	1.77
North Hammond	do	C. A. Wooster	20, 21	42	24	— 8	20.5	1.97
Houseville	Lewis	Walter D. Yale	20	37	24	— 8	18.2	3.37
South Trenton	Oneida	Storrs Barrows	18	38	26	—10	20.3	5.30
Cazenovia	Madison	Prof. Wm. Soule	20, 29	37	19	— 7	22.2	5.57
Oneida	do	S. Spooner, M. D.	20	40	24	6	23.0	4.00
Depauville	Jefferson	Henry Haas	20	40	24	— 4	20.7	2.90
Oswego	Oswego	Wm. S. Malcolm	20	40	19	6	24.6	5.12
Palermo	do	E. B. Bartlett	20	39	19	— 6	20.0	6.80
North Volney	do	J. M. Patrick	20	40	19	— 3	22.6	.....
Nichols	Tioga	Robert Howell	29	43	12	1	25.3	.....
Newark Valley	do	Rev. Sam'l Johnson	20	40	11	— 8	22.0	3.10
Rochester	Monroe	H. W. Mathews	20	41	24	7	25.8	3.23
Little Genesee	Allegany	Daniel Edwards	20	43	11	—14	22.1	2.45
Suspension Bridge	Niagara	W. M. Jones	20	49	24	6	25.1	2.60
Buffalo	Erie	Wm. Ives	20	40	24	7	25.4	2.25
Averages							24.0	3.29

Table showing the range of the thermometer, &c., for December—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
NEW JERSEY.				°		°	°	*In.*
Paterson	Passaic	Wm. Brooks	21	42	25	5	26.7	4.52
Newark	Essex	W. A. Whitehead	21	43	25	8	28.1	3.85
New Brunswick	Middlesex	Geo. H. Cook	17	42	25	9	27.3	3.32
Trenton	Mercer	E. R. Cook	21	47	25	11	31.2	5.13
Moorestown	Burlington	Thos. J. Beans	20	45	24	11	29.2	2.98
Dover	Morris	Howard Shriver	17, 21, 28	42	11	6	28.0	4.87
Haddonfield	Camden	Samuel Wood	20	45	24	15	30.2	3.52
Newfield	Gloucester	E. D. Couch	7	50	25	10	29.7	.....
Greenwich	Cumberland	R. C. Sheppard	7	50	13	15	32.1	2.92
Vineland	....do	Jno. Ingram, M. D.	21	50	24, 25	10	29.9	4.40
New Germantown	Hunterdon	Arthur B. Noll	17, 21, 28	40	11, 25	8	28.0	1.80
Newton	Sussex	Thos. Regasus, M. D.	17	46	11, 24	6	23.9	2.45
Averages							28.7	3.61
PENNSYLVANIA.								
Nyces	Pike	John Grathwohl	28	43	11	— 8	21.5	1.95
Fallsington	Bucks	Ebon'r Hance	28	43	24, 25	13	29.7	3.30
Philadelphia	Philadelphia	Prof. J. A. Kirkpatrick	21	45	24	18	32.6	4.27
Germantown	... do	Thomas Meehan	7	45	25	12	28.7	.....
Horsham	Montgomery	Miss Anna Spencer	30	46	13, 24	11	28.3	2.10
Plymouth Meeting	....do	H. M. Corson	20	47	24	12	29.5	1.19
Dyberry	Wayne	Theodore Day	17	38	11	— 9	21.8	.....
Whitehall	Lehigh	Edward Kohler	5, 21, 28	39	11	1	27.1	.....
Factoryville	Wyoming	R. Sisson	17	38	11	— 4	23.6	1.85
Reading	Berks	J. Heyl Raser	6	44	11, 13	11	30.1	.....
Parkesville	Chester	Dr. F. Darlington	20	44	13	12	29.6	2.42
West Chester	....do	Dr. Geo. Martin	28	48	13	13	30.5	3.14
Silver Spring	Lancaster	H. G. Bruckhart	20	45	26	7	29.0	.....
Mount Joy	....do	J. R. Hoffer	15	47	26	10	30.8	.....
Harrisburg	Dauphin	John Heisely, M. D.	6, 18	38	26	15	28.7	2.82
Fountain Dale	Adams	S. C. Walker	17, 21	42	11	9	27.7	3.10
Tioga	Tioga	E. T. Bentley	17, 20	36	24	—11	17.7	2.05
Lewisburg	Union	Prof. C. S. James	17	41	11	0	24.9	2.14
Ickesburg	Perry	Wm. E. Baker	17	46	11	0	26.3	2.55
Grampian Hills	Clearfield	Elisha Fenton	20	38	13	— 4	20.5	4.55
Johnstown	Cambria	David Peelor	6	47	11	3	26.7	2.90
Franklin	Venango	Rev. M. A. Tolman	20	50	10, 12	0	24.7	3.07
Connellsville	Fayette	John Taylor	20	52	12	0	26.4	.....
New Castle	Lawrence	E. M. McConnell	20	51	11	7	27.0	.....
Beaver Seminary	Beaver	Rev. R. T. Taylor	20	53	11	10	30.7	3.10
Canonsburg	Washington	Rev. W. Smith, D. D	20	57	11, 12	7	28.3	1.69
Averages							27.0	2.68
MARYLAND.								
Woodlawn	Cecil	Jas. O. McCormick	21	55	13	10	29.6	3.61
Annapolis	Anne Arundel	Wm. R. Goodman	21	52	13	12	35.9	3.08
St. Inigoes	St. Mary's	Rev. J. Stephenson	20	52	13, 25	18	33.4	2.70
Emmittsburg	Frederick	Eli Smith	9	52	11	8	28.7	.....
Mt. St. Mary's Coll.	....do	Prof. C. H. Jourden	17	42	12	11	28.3	2.26
Averages							31.2	2.91

Table showing the range of the thermometer, &c., for December—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max temp.	Date.	Min. temp.	Mean temp.	Rain fall.
VIRGINIA.				°		°	°	*In.*
Surry C. H.	Surry	B. W. Jones	20	67	13	10	37.6	.....
Johnsontown	Northampton	C. R. Moore	21	58	13	15	37.4	.....
Comorn	King George	E. Tayloe	.....	.....	25	10	.....	1.42
Mt. Solon	Augusta	J. T. Clarke, M. D.	20	62	13	2	34.1	6.00
Lynchburg	Bedford	C. I. Merriwether	20	55	12	14	37.4	.....
Snowville	Pulaski	J. W. Stalmaker	20	63	12	0	30.0	6.10
Wytheville	Wythe	Rev. Jas. A. Brown.	18	50	12	—10	29.5	3.20
Staunton	Augusta	J. C. Covell	20	51	12	9	32.0	2.67
Averages							34.0	3.88
WEST VIRGINIA.								
Romney	Hampshire	W. H. McDowell	28	52	13	4	28.5	.....
White Day	Monongalia	W. H. Sharp, M. D	{17,19,} {20,28}	50	12	10	33.3	.....
Averages							30.9	.....
NORTH CAROLINA.								
Kenansville	Duplin	Prof. N. B. Webster	.....	.....	.....	.....	.....	.....
Goldsboro'	Wayne	E. W. Adams, A. M.	18, 20	65	25	15	41.2	1.33
Raleigh	Wake	Rev. F. P. Brewer	20	63	12	12	38.7	3.60
Oxford	Granville	W. R. Hicks, M. D.	20	56	12	8	34.0	1.55
Albemarle	Stanley	F. J. Kron	20	64	25	4	35.5	4.44
Statesville	Iredell	Thos. A. Alison	20	55	12	0	32.1	4.75
Asheville	Buncombe	E. I. Aston	20	60	12	—1	33.5	.....
Do	....do	J. T. E. Hardy, M. D.	20	62	12	0	34.0	.....
Averages							35.6	3.13
SOUTH CAROLINA.								
Gowdysville	Union	Charles Petty	19	65	12	4	38 3	.....
GEORGIA.								
Atlanta	Fulton	F. Deckner & Son	20	62	12	6	37.4	5.12
Macon	Bibb	J. F. Adams	20	69	12	13	41.9	5.32
Averages							39.7	5.22
ALABAMA.								
Opelika	Lee	J. H. Shields	20	67	12	11	44.6	4.12
Moulton	Lawrence	Thos. M. Peters, A. M.	20, 30	56	25	12	39.0	2.96
Greene Springs	Hale	H. Tutwiler, LL. D.	31	69	25	11	43.3	4.19
Havana	...do	S. K. Jennings, M. D.	31	65	25	16	42.6	5.08
Fish River	Baldwin	W. J. Van Kirk	30	69	24, 25	26	.....	2.75
Averages							42.4	3.82
FLORIDA.								
Jacksonville	Duval	A. S. Baldwin	4, 19, 31	72	25	20	57.1	2.05
Port Orange	Volusia	Mrs. E. H. Hawks	31	71	25	22	53.4	.....
Averages							55.1	2.05
TEXAS.								
Columbia	Brazoria	Hennell Stevens	20	81	11	24	51.9	8.84
Waco	McLellan	Edw. Merrill, M. D	19	72	11	18	45.7	4.95
Austin	Travis	J. Van Nostrand	19	74	25	21	48.4	4.96
Averages							48.7	6.25

Table showing the range of the thermometer, &c., for December—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
LOUISIANA.				°		°	°	*In.*
Benton	Bossiere	J. H. Carter	20	76	11	18	44.9	.....
New Orleans	New Orleans	Robt. W. Foster	28	72	25	32	.....	.....
MISSISSIPPI.								
Grenada	Yalabusha	Albert Moore	19	70	25	14	.....	.....
Natchez	Adams	Robt. McCary	19, 29, 30	68	25	16	46.8	4.11
TENNESSEE.								
Elizabethton	Carter	Charles H. Lewis	20	62	12	— 8	32.6	.....
Tusculum College	Green	S. S. and W. S. Doak	19	58	12	— 9	32.2	0.92
Lookout Mountain	Hamilton	Rev. C.F.P. Bancroft	30	58	12	2	39.5	.....
Austin	Wilson	P. B. Calhoun	19	64	12	4	37.3	7.00
Clarksville	Montgomery	Prof. W. M. Stewart	19, 20	59	11, 12	1	33.4	5.37
Memphis	Shelby	Edw. Goldsmith	19	63	11	8	36.6	4.27
Averages							35.3	4.39
KENTUCKY.								
Lexington	Fayette	S. R. Williams	19	58	12	— 2	29.8	3.77
Danville	Boyle	O. Beatty	19	64	12	— 4	35.4	4.13
Louisville	Jefferson	Mrs. L. Young	19	59	12	— 1	31.1	4.01
Clinton	Hickman	Rev. T. H. Cleland	20	55	11	2	28.8	.....
Averages							31.3	3.97
OHIO.								
New Lisbon	Columbiana	J. F. Benner	5, 8	52	11, 12	10	30.3	1.76
Steubenville	Jefferson	Jos. B. Doyle	20	49	12	10	30.1	.....
Painesville	Lake	E. J. Ferris	20	46	12	5	25.8	4.30
Cleveland	Cuyahoga	Mr. & Mrs. G. A. Hyde	20	48	12	3	26.3	1.48
Wooster	Wayne	Martin Winger	20	55	12	2	27.8	0.70
Kelley's Island	Erie	Geo. C. Huntington	20	46	12	1	27.1	0.45
Sandusky	....do	Thomas Neill	20	52	12	0	25.1	0.84
Norwalk	Huron	Rev. A. Newton	20	52	12	0	26.1	0.90
North Fairfield	....do	O. Burras	20	51	12	— 3	26.5	0.69
Westerville	Franklin	Prof. Jno. Haywood	20	51	12	0	27.9	1.45
Marion	Marion	H. A. True, M. D.	20	50	12	— 3	25.0	0.87
Hillsboro'	Highland	J. McD. Mathews	19, 20	49	12	— 1	26.3	2.34
Toledo	Lucas	J. B. Trembly, M. D.	20	44	12	— 3	25.2	1.06
Bowling Green	Wood	John Clarke	20	50	12	— 3	26.2	2.55
Urbana University	Champaign	M. G. Williams	20	50	12	— 6	25.7	1.57
Bethel	Clermont	Geo. W. Crane	20	52	12	— 4	26.7	3.00
Mt. Auburn Institu'n	Hamilton	Prof. S. A. Norton	14	59	12	2	34.0	0.99
Cincinnati	....do	G. W. Harper	19	55	12	0	29.1	2.07
Do	....do	R. C. Phillips	2	58	12	2	33.1	2.12
Cleves	....do	R. B. Warder	19	53	11	— 5	28.1	1.28
College Hill	....do	John W. Hammitt	20	52	12	— 6	27.3	3.96
Jacksonburg	Butler	I. B. Owsley, M. D.	20	52	12	— 9	26.6	2.60
Averages							27.6	1.73
MICHIGAN.								
Monroe City	Monroe	Miss H. I. Whelpley	20	40	12	— 7	20.7	1.30
Litchfield	Hillsdale	R. Bullard	17, 19, 20	36	12	— 2	19.3	2.30
Grand Rapids	Kent	E. S. Holmes, D. D. S	17	44	11, 26	8	24.4	2.27
Northport	Leelenaw	Rev. Geo. N. Smith	16, 17	38	10	10	25.3	1.20
Holland	Ottawa	L. H. Streng	17, 19	42	16	1	26.4	2.29

Table showing the range of the thermometer, &c., for December—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MICHIGAN—Con.				°		°	°	*In.*
Otsego	Allegan	Milton Chase, M.D.	3	44	26	6	27.0	.....
Copper Falls	Keweenaw	Dr. S. H. Whittlesey	17	34	9	— 4	17.2	0.54
Ontonagon	Ontonagon	Edwin Ellis, M. D	16	40	12, 13	0	23.0	.....
Coldwater	Branch	N. L. Southworth	18, 19	40	12	— 8	21.8	.....
Averages							22.8	1.65
INDIANA.								
Vevay	Switzerland	Chas. G. Boerner	19	57	12	— 2	30.1	2.82
Muncie	Delaware	G. W. H. Kemper, M.D	19	54	12	- 5	26.2	0.85
Spiceland	Henry	Wm. Dawson	19	53	12	— 6	26.0	1.25
Columbia City	Whitley	Dr. F. and Miss L. McCoy.	20	40	12	—10	23.5	0.90
Jalapa	Grant	Albert C. Irwin	19	51	11, 12	— 4	27.8	2.18
State University	Monroe	Prof. C. M. Dodd	19	56	12	10	27.4	1.54
Rensselaer	Jasper	Dr. J. H. Loughridge	18	48	11	—18	22.2	1.60
Merom	Sullivan	Thos. Holmes	19	56	11, 12	—11	29 1	2.25
New Harmony	Posey	John Chappellsmith.	19	58	11	— 2	30.9	1.92
Knightstown 2	Rush	D. Deem	19	52	12	—10	24.5	1.53
Averages							26.8	1.68
ILLINOIS.								
Chicago	Cook	J. G. Langguth, jr.	19	48	11	—11	25.3	1.41
Near Chicago	do	Samuel Brookes	19	44	12	—18	20.2	.....
Marengo	McHenry	O. P. Rogers	19	47	11, 12	—13	20.8	1.38
Golconda	Pope	Wm. V. Eldredge	19	66	11	0	34.9	3.30
Belvidere	Boone	C. B. Moss	17	43	11, 12	—16	20.7	1.40
Winnebago	Winnebago	J. W. & Miss Tolman.	17	42	10	—16	18.2	1.30
Rochelle	Ogle	Daniel Carey	19	44	11	—22	20.2	0.80
Wyanet	Bureau	E. S. & Miss Phelps	19	48	11	—18	22.9	1.22
Tiskilwa	do	Verry Aldrich	19	47	11	—14	20.2	0.75
Hennepin	Putnam	Smiley Shepherd	17	45	11	—16	25.0	.....
Elmira	Stark	O. A. Blanchard	19	47	11	—20	17.9	1.36
Peoria	Peoria	Frederick Brendel	19	54	11	—13	25.0	1.81
Springfield	Sangamon	G. M. Brinkerhoff	19	62	11	—18	25.6	.....
Loami	do	Timothy Dudley	19	55	11	—18	24.6	3.10
Dubois	Washington	Wm. C. Spencer	19	60	11	— 8	29.7	2.30
South Pass	Union	H. C. Freeman	19	60	11	—10	30.3	.....
Lombard University	Knox	Prof. W. Livingston	19, 30	46	11	—17	22.0	0.40
Manchester	Scott	Dr. J. & C. W. Grant	19	57	11	—15	26.4	2.25
Mount Sterling	Brown	Rev. A. Duncan	19	57	11	—18	25.0	.....
Andalusia	Rock Island	E. H. Bowman, M. D	19	47	11	—12	22.7	.....
Augusta	Hancock	S. B. Mead, M. D	19	52	11	—19	23.5	2.67
Averages							23.9	1.70
WISCONSIN.								
Manitowoc	Manitowoc	Jacob Lips	17	43	10	— 8	22.0	0.67
Plymouth	Sheboygan	G. Moeller	19	41	10	— 9	19.0	1.10
Bingham	do	Jno. De Lyser	17, 19	42	0	— 8	20.5	.....
Milwaukee	Milwaukee	I. A. Lapham, LL.D	19	48	11	— 8	22.5	0.88
Appleton	Outagamie	J. C. Foye	19	43	10	— 6	21.5	0.93
Waupaca	Waupaca	H. C. Mead	19	42	10	— 8	20.7	.....
Embarrass	do	E. Everett Breed	19	36	12	—13	17.8	1.45
Rocky Run	Columbia	W. W. Curtis	17	44	10	—10	20.0	0.72

Table showing the range of the thermometer, &c., for December—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
WISCONSIN—Con.				°		°	°	*In.*
Edgerton	Rock	Henry J. Shints	19	45	10	—14	18.8	1.15
Bayfield	La Pointe	Andrew Tate	16	40	11	— 6	17.2	.....
Averages							20.0	0.99
MINNESOTA.								
St. Paul	Ramsey	Rev. A. B. Paterson	16, 17, 19	36	11	—17	16.4	0.58
Minneapolis	Hennepin	Wm. Cheney	17	37	10	—19	15.2	0.55
Sibley	Sibley	C. W. & C. E. Woodbury.	16	36	10, 11	—20	13.4	0.65
New Ulm	Brown	Charles Roos	19	38	10	—18	16.0	0.61
Sauk Centre	Stearns	S. Bloomfield	5	33	12	—23	12.7	1.53
Averages							14.7	0.78
IOWA.								
Clinton	Clinton	Dr. J. P. Farnsworth	17	50	11	—15	22.6	1.10
Davenport	Scott	D. S. Sheldon	19	45	11	—17	20.1	1.22
Dubuque	Dubuque	Asa Horr, M. D	17, 19	42	11	—10	20.3	2.18
Monticello	Jones	M. M. Moulton	19	42	11	—18	15.0	0.77
Fort Madison	Lee	Dan'l McCready	19	50	11	—20	25.0	1.84
Guttenberg	Clayton	Jas. P. Dickerson	17	44	11	—22	16.2	.....
Mount Vernon	Linn	Prof. A. Collins	19	44	11	—15	19.4	.....
State University	Johnson	T. S. Parvin, A. M	19	50	11	—18	21.2	1.62
Independence	Buchanan	Geo. Warne, M. D	19	43	11	—22	16.8	(?)
Near Independence	....do	Mrs. D. B. Wheaton	19	44	11	—24	14.5	0.81
Waterloo	Black Hawk	T. Steed	19	42	11	—19	19.0	.....
Marble Rock	Floyd	H. Wadey	19	48	11	—13	19.6	0.95
Iowa Falls	Hardin	N. Townsend	19	42	10, 11	—12	.....	2.46
Algona	Kossuth	James H. Warren	17	43	10	—17	16.2	.....
Near Algona	....do	Ph. Dorweiler	19	38	10	—18	14.4	2.71
Fort Dodge	Webster	C. N. Jorgensen	19	41	10	—18	17.0	1.95
Rolfe	Pocahontas	Oscar I. Strong	19	43	10	—27	12.9	2.07
Fontanelle	Adair	A. F. Bryant	17	42	11	—21	18.8	1.90
Logan	Harrison	Jacob T. Stern	17	45	11	—20	20.0	2.94
Averages							18.3	1.75
MISSOURI.								
St. Louis University	St. Louis	Rev. J. Stractmans	19	59	11	— 4	30.4	2.73
Allenton	....do	A. Fendler, M. D	19	64	11	—10	28.5	3.22
Hematite	Jefferson	John M. Smith	17	66	11	— 6	31.8	3.45
Canton	Lewis	George P. Ray	19	56	11	—12	25.7	2.33
Rolla	Phelps	Homer Ruggles	19	68	11	— 8	29.3	2.56
Jefferson City	Cole	Nicolas de Wyl	19	68	11	—12	26.0	1.60
Hermitage	Hickory	Miss Belle Moore	19	62	11	—14	26.9	3.42
Warrensburg	Johnson	J. E. Pollock	19	59	11	—18	27.6	2.25
Harrisonville	Cass	John Christian	19	54	11	—15	26.0	4.86
Oregon	Holt	William Kaucher	18	55	11	—16	24.0	2.17
Bolivar	Polk	J. A. Rau	19	66	11	—13	30.8	4.65
Averages							27.9	3.02
KANSAS.								
Leavenworth	Leavenworth	J. Stayman, M. D	18, 19, 20	46	11	—19	23.0	2.17
Olatha	Johnson	W. Beckwith	19	54	11	—20	24.2	3.50
Baxter Springs	Cherokee	Ingraham & Hyland	19	70	11	— 6	33.8	3.05
Atchison	Atchison	Dr. H. & Miss Horn	17, 18	59	11	—17	24.3	2.20

Table showing the range of the thermometer, &c., for December—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
KANSAS—Cont'd.				°		°	°	*In.*
State University	Lawrence	Prof. H. F. Snow	19	49	11	—16	24.3	2.13
Holton	Jackson	Jas. Watters, M. D.	17, 18, 20	46	11	—19	25.6	2.70
[illegible] Agricult'l Coll.	Riley	Prof. B. F. Mudge	28	57	11	—16	25.3	0.81
[illegible]cil Grove	Morris	A. Woodworth, M.D.	20	50	11	—15	28.0	3.15
[illegible]osho Falls	Woodson	Mrs. E. W. Groesbeck	19	58	11	—16	24.7	0.70
Averages							25.9	2.27
NEBRASKA.								
Elkhorn	Washington	John S. Bowen	2	45	11	—15	20.5	.....
De Soto	....do	Charles Seltz	17	46	11	—15	19.9	2.00
Bellevue	Sarpy	Mrs. E. E. Caldwell	17	45	11	—20	22.5	6.40
Glendale	Cass	Dr. A. L. & Miss Child	17	45	11	—30	19.4	2.10
Dakota	Dakota	H. H. Brown	16	49	11	—19	20.7	.....
Nebraska City	Otoe	Prof. P. Zahner	17	49	11	—17	23.2	2.58
Omaha Mission	Reserve	Rev. Wm. Hamilton	16	48	10, 11	— 8	24.0	1.50
Omaha	Douglass	Chas. B. Wells	17	50	10	—12	21.8	1.81
Averages							21.5	2.73
CALIFORNIA.								
Monterey	Monterey	C. A. Canfield, M. D.	7	66	9	34	51.8	4.30

NOTES OF THE WEATHER, DECEMBER, 1868.

West Waterville, Me.—Mean temperature of month 5.25° below average of four preceding Decembers; moisture 1.23 inches less than average of five preceding; snow-fall 14 inches, and now 18 inches deep in woods. No rain this month.

Gardiner, Me.—River closed 2d; aurora 13th; month remarkable for steady temperature, dryness, small amount of snow, and low barometer, (on 8th, 28.806.) Mean heat of December for 33 years, 22°; moisture, 4.45 inches; this December 20.46°, and 2.04 inches.

Stanwish, Me.—Faint auroras 10th, 13th; some sleighing 21st, 22d; good after 24th.

Cornish, Me.—Snow-fall 16 inches in December.

Cornishville, Me.—December, average heat for 40 years 21°; this month 19.48°; snow in December 19 inches, now on the ground 8 inches.

Antrim, N. H.—Snow on 2 days in October, 5 in November, and 7 in December; good sleighing all through December.

Shelburn, N. H.—Androscoggin river closed November 30; horses crossed December 2; sleighing good since November 9; snow in woods two feet deep on January 1, 1869.

Lunenburg, Vt.—Month very cloudy, but not usual number of cold, raw, windy days; auroras every fair evening.

North Craftsbury, Vt.—An unusually cold December; temperature of well 40°.

Randolph, Vt.—A steadily cold month; no thaw; 15 inches snow on ground.

St. Albans, Vt.—Seven inches snow in Canada woods on 25th; snow fell to lie a fortnight earlier than usual, and when there was little frost in the ground.

Kingston, Mass.—First skating 3d; many wild geese flying late as 12th, 13th; rain on 4 and snow on 9 days this month.

Topsfield, Mass.—Year closes pleasant, no snow on ground, good wheeling, springs full.

Georgetown, Mass.—Little sleighing, light storms, ice every night but one; ponds, &c., low for the season.

Billerica, Mass.—Sleighing 6th; rain melted the snow 7th; 3 inches snow 27th.

New Bedford, Mass.—Ground slightly frozen, and but little permanent ice formed in December.

Worcester, Mass.—Fair weather 8th to 20th, 23d to 27th, and 30th and 31st.

Mendon, Mass.—Snow 1st, 5th, (5 inches,) 7th, 8th, 20th; Nipmug Great Pond of 107 acres closed first time this season on 11th.

Lunenburg, Mass.—Very little snow on ground; but little sleighing; the coldest year since 1856; December mean heat for 30 years, 28.57°; this year 20.70°.

Amhurst, Mass.—Severe storm of wind, snow, and rain 7th; after the 5th tolerable sleighing through December.

Williamstown, Mass.—A wintry month, with good sleighing nearly throughout.

Columbia, Conn.—Snow on 5th, 10 inches; 23d, 2 inches; 27th, 2 inches; rain on 7th, 20th, 29th.

Middletown, Conn.—Last steamer from New York, 6th; Connecticut river closed 11th.

South Hartford, N. Y.—Lake Champlain closed at White Hall, 1st; canal, 7th; December mild, pleasant; good sleighing; snow-fall 31.5 inches; ground frozen 10 inches.

North Hammond, N. Y.—St. Lawrence frozen over, 25th; very sudden and frequent changes of temperature, and greatest snow-fall, (20.95 inches,) in many years.

Depauville, N. Y.—Faint aurora, 9th; average December temperature for four years, 23.05°; this month 2.3° below; in 1868, rain on 76, thunder storms on 12, snow on 52, sleighing on 82 days; aurora on 39 nights, below zero 21 mornings, between spring and fall frosts 129 days, mean temperature of the whole year 43.4°.

Palermo, N. Y.—Coldest December, and with greatest snow-fall (68.75 inches) in 15 years. The year 1868 has also been the coldest in 15 years; snow-fall 168.5 inches; rain-fall (38.8 inches) was below average. The year was free from untimely frosts, floods, violent storms, &c.

North Volney, N. Y.—A cloudy, stormy month, with about five feet of snow, more than ever known at this season.

Nichols, N. Y.—Cold commenced with the month; by 8th snow was 18 inches deep. The Susquehanna was crossed by teams 16th to 28th.

Little Genessee, N. Y.—A wintry, cloudy month; snow sometimes two feet deep.

Buffalo, N. Y.—Month 4.25° colder than average December mean for 10 years; good sleighing after 4th; harbor closed 9th; but lake open yet at this end.

Newark, N. J.—Month of equable temperature, but 4½° below average of 25 Decembers.

Moorestown, N. J.—Ground not covered with snow this month.

Dover, N. J.—First skating, 3d; canal and ponds closed, 9th; fine sleighing, 11th; slight thaw, 17th; freeze, 18th; rain and slippery walking, 20th.

Newfield, N. J.—Month of much foul and variable weather; mean temperature nearly 2° lower than last December; mean temperature of

1868, 51. 2°; days without frost (April 27 to September 18) 143; mean temperature of those days 69. 8°.

Greenwich, N. J.—Month equably cool; maximum temperature a little lower, and minimum temperature a little higher than usual; mean temperature of 1868, 51. 87°; rain-fall 47.63 inches.

Fallsington, Pa.—Delaware river closed, 13th. Month equably cold, but generally fine weather.

Philadelphia, Pa.—Schuylkill at Market street bridge closed, 24th; rain commenced on 31st, and continued into the new year.

Horsham, Pa.—Ground first whitened with snow, 4th; greater part of month mild with fewer snow and other storms than usual.

Dyberry, Pa.—Snow 4th to 5th, (10 inches,) 7th to 8th, (12 inches,) a robin seen 19th; good sleighing since 4th; snow-fall 25.4 inches; means of 1868, 7 a. m., 38.1°; 2 p. m., 54.40°; 9 p. m. 42.2°; of all, 44. 9°; snow-fall, 121 inches.

Factoryville, Pa.—A straight, cloudy winter month thoughout; winds light; sleighing good; snow-fall 19 inches, and but little has melted away.

Fountain Dale, Pa.—Ice on mill-dam, 12 inches, 8 clear; month cold and snow on ground throughout. 1868, mean temperature 50. 20°; rain-fall, 44.6 inches; snow-fall, 72.9 inches.

Tioga, Pa.—River closed, 4th; pleasant winter month; good lumbering; snow covering ground all the time.

Ickesburg, Pa.—Saw a kingfisher, 12th; peach buds yet safe, 14th.

Grampian Hills, Pa.—Month steadily cool, but no extreme; but two days above 32°, and one the mean above 32°; yet only one below zero. Snow-fall, 45.5 inches, badly drifted; much cloudy weather.

New Castle, Pa.—Month of nearly same temperature as in 1866, 1867.

Woodlawn, Md.—Susquehanna full of ice, 9th; frozen over 11th.

Mt. St. Mary's, near Emmittsburg, Md.—Mean temperature of 1868, 49. 36°. Rainy days, 144; rain-fall, 47.76 inches.

Johnsontown, Va.—Heaviest snow-storm, (all day,) from northeast and north; most of rains this year came from southwest, some from northwest.

Comorn, Va.—Rappahannock frozen over, 12th, for a week; on 22d entirely free from ice again.

Lynchburg, Va.—Two freezes in December, very uncommon here.

Wytheville, Va.—Ground white with snow, first time, 1st; coldest day this year, 12th.

White Day, W. Va.—Snow on 1st, 7th, 8th, 23d, 30th; White Day creek frozen over, 10th; open, 16th; closed, 23d; open, 31st.

Albemarle, N. C.—Wild geese flying south, 24th; from 26th to close no sunshine.

Statesville, N. C.—Thermometer at zero on 12th; lowest known here in December; rain-fall of 1868, 61 inches.

Gowdysville, S. C.—White frost and ice, 1st, 2d, 3d, 6th; very cold, 11th, 22d, 25th; November and December unusually cold for this climate, and winter earlier than usual.

Atlanta, Ga.—December remarkably wet and cold; mean temperature, 37. 4°. Second crop strawberries ripened up to 12th.

Opelika, Ala.—December 31, like spring; frogs singing.

Moulton, Ala.—December 5, white frost, followed by a fair, pleasant day; and, at 2 p. m., a noise like thunder was heard for five minutes. During same day a meteor was seen, the explosion of which was heard 45 miles.

Green Springs, Ala.—On 5th, about 4 p. m., a fire ball seen here, 40

miles S. and at Elyton, N., where its explosion was heard. On 12th and 25th boys skated on pond.

Ocala, Fla.—Severe frosts on 25th and 26th, said to have killed the young orange trees planted last year and this.

Port Orange, Fla.—Ice ¼-inch thick on 25th east of Halifax river, freezing oranges on the trees and killing orange seedlings and other semi-tropical plants.

Jacksonville, Fla.—December average temperature for 15 years 55.90° this December 57.14°, and yet 25th was lower than for several years, doing much injury to semi-tropical trees and plants—most of which, as lemons and oranges, will probably survive and recover in time. Average mean temperature of 15 years 69.56°; of 1868, 66.08°.

Austin, Texas.—Frost on nine mornings, and more rain than in any December since 1857.

Grenada, Miss.—Two inches snow on 26th; three peals of thunder in southwest at noon on 31st.

Natchez, Miss.—Excessive cold 25th; December had 2 clear, 6 rainy, and 23 cloudy days.

Memphis, Tenn.—In 1868 rain fell on 118 and snow on 6 days; melted snow and rain 50.47 inches; above summer heat 159, and below freezing point 73 days. Mean temperature of 1868, 60.15°.

Lexington, Ky.—Mean temperature of 1868, 53.64°; rain-fall 52.79 inches.

Kelley's Island, O.—On 11th ice nearly covered lake between island and Marblehead; Sandusky bay closed 8th; bright diffused aurora 17th.

Hillsboro', Ohio.—Average mean temperature of eight years, (being little more than for 30 years,) 51. 25°; rain-fall, average of eight years, 47. 079 inches. Mean temperature of 1868, 49. 808°; rain-fall, 49. 472 inches.

Urbana, Ohio.—Ice eight inches thick, 18th; aurora, with uniform white light, 18th; snow gone, 20th, after laying 13 days.

Grand Rapids, Mich.—Sleighing 7th, and, except two days, continued good to 31st.

Northport, Mich.—One of the mildest Decembers in many years; scarcely snow enough for good sleighing.

Holland, Mich.—Snow fell on 18 days in December.

Otsego, Mich.—Two feet snow, light and dry, but little drifted; no frost in ground in woods and fields.

Vevay, Ind.—Much ice in the Ohio river, 17th; ground nearly free of frost, 20th; river full of ice, 25th; ice disappearing, 28th.

Merom, Ind.—Wabash river frozen over, 10th; ice left river last night, 20th.

Chicago, Ill.—First snow-storm of season, 1st; river frozen over and navigation closed, 14th.

Belvidere, Ill.—Meteoric display on 11th, from 7 p. m. till after midnight; numerous large meteors, mostly from east and south, and much brighter than in November; brilliant aurora 17th. First part of December severe; after that mild. Mean temperature of 1868, 44. 49°.

Winnebago. Ill.—Averages for 11 years: mean temperature, 46°; rain-fall, 36. 35 inches; snow, 47. 41 inches. For 1868: mean temperature, 45. 02°; rain, 45. 14 inches; snow, 40. 8 inches, without frost. May 20 to September 16, (117 days,) mean temperature 71. 24°.

Hennepin, Ill.—Except four days, (9th to 12th,) month was equable, and good for out-door work.

Dubois, Ill.—The 11th was coldest morning since January 1st, 1864. Mean temperature of December 1° below average of 4 years.

South Pass, Ill.—The cold of 11th killed buds of tender peaches; Early Crawfords supposed to be generally frozen.

Manitowoc, Wis.—River frozen over, 2d; auroras, 10th and 17th.

Plymouth, Wis.—Good sleighing till 18th, when snow disappeared. Averages for four years: December, mean temperature, 20°; rain-fall, 1.5 inch. This December, mean temperature, 19°; rain-fall, 1.1 inch. Mean temperature, (1868,) 42.75; rain-fall, 36.5 inches.

Milwaukee, Wis.—River closed, 2d; opened, 4th; finally closed, 8th.

Embarrass, Wis.—Wolf river closed, 5th; faint auroras, 5th, 10th.

Rocky Run, Wis.—Aurora, 19th. Except from 9th to 12th, the month has been uncommonly mild.

Bayfield, Wis.—Brilliant aurora, with heavy, dark arch, 17th; La Point bay frozen over, 24th.

Minneapolis, Minn.—First sleighing 6th; continued through month.

Sauk Centre, Minn.—Aurora 11th; bright light of pale cherry color; another 18th; pale green tint. Snow on ground 16 inches; 18-inch ice on lakes; ground frozen two feet on prairie.

Clinton, Iowa.—Snow 7th, four inches; river closed 10th, and unusually cold, stormy December.

Monticello, Iowa.—South fork of Maquoketa river frozen over December 12, 1865, 13th, 1866, 1st, 1867, 11th, 1868.

Guttenburg, Iowa.—Mississippi closed 11th; teams cross 26th.

Marble Rock, Iowa.—Coldest days ever known in December, 9th to 12th, inclusive; since then pleasant.

Algona, Iowa.—Coldest December known here; last part pleasant winter weather.

Near Algona, Iowa, (10 miles southwest.)—Aurora 10th and 17th; snow on 9 days, (27.1 inches,) and good sleighing all December.

Rolfe, Iowa.—Diffused aurora 10th; one rainy and 10 snowy days; ground frozen a foot deep.

Fontanelle, Iowa.—From 2d to 6th, 18½ inches snow; coldest December in two years.

Hematite, Mo.—Up to 12th, coldest December ever known here; the whole month unu lly severe, but peaches not yet injured.

Oregon, Mo.—S -storm 6th; roads filled with drifts 7th; faint aurora 17th.

Leavenworth, Kansas.—Peach buds killed 10th; teams cross Missouri river on the ice 11th; coldest weather ever felt in Kansas.

Atchison, Kansas.—Snow storm of 24 hours 6th and 7th; Missouri river closed 11th; opened 19th; closed again 24th; mean temperature of 1868, 53.36°; rain-fall, (including snow,) 37.48 inches; snow 27.5 inches; no frost from April 10 to September 17.

Holton, Kansas.—Coldest morning in Kansas 11th, and December one of the coldest and most disagreeable months known.

Manhattan, Kansas.—Coldest day ever noted here 11th; December was a dry month.

Council Grove, Kansas.—The snow storm of 5th and 6th has no parallel in the memory of "the oldest inhabitant" here.

Elkhorn, Neb.—Snow 2d, 3d, (10 inches;) 4th, 5th, 6th, (4 inches;) 9th, 12th, 26th, 27th, (with distant thunder;) 31st, (1½ inches;) in all 15.5 inches; auroras 17th, 19th.

Glendale, Neb.—From 3d to 13th snowy; drifts 15 feet; roads almost impassable; otherwise good month for business.

Nebraska City, Neb.—Missouri river closed 9th. First week of December cold, and 16 inches snow fell; last three weeks fine winter weather.

MONTHLY REPORT

OF THE

DEPARTMENT OF AGRICULTURE,

FOR

FEBRUARY,

1869.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1869.

MONTHLY REPORT.

WASHINGTON, D. C., *February* 24, 1869.

SIR: I submit for publication herewith tables showing the relative proportion of farm stock of the several States, in comparison with the estimated numbers of last year, with extracts from correspondence, and brief articles upon the following topics: Reports in foreign languages, white Polish oats, the Rocky Mountain goat, the wool trade, productions of California in 1867, California items, the lumber trade of Chicago, international horticultural exhibition, the potato disease, stock diseases in Europe, agricultural statistics of Great Britain in 1868, and meteorology.

Respectfully,

J. R. DODGE, *Statistician.*

Hon. HORACE CAPRON, *Commissioner.*

COMPARATIVE NUMBERS AND PRICES OF FARM STOCK.

Horses have increased slightly in most of the western and southern States, but very little in the middle and eastern—not enough to keep pace with the increase of population in the Atlantic sea-bound States. Nebraska, Kansas, Missouri, Iowa, Minnesota, Wisconsin, and the Pacific coast States exhibit the largest increase. That the numbers are not equal to the demand is shown by the general though small advance in prices.

The increase of mules is also slow in comparison with the rapid aggregation of population, and the range of prices appears to be higher than last year.

The returns of oxen and other cattle point to a positive decrease in New Jersey, Maryland, North Carolina, Florida, Texas, Kentucky, Ohio, Indiana, and Illinois, the diminution amounting to five per cent. in the latter State. In milch cows a reduction is reported in Texas, Ohio, and Illinois, and some of the southern States. A general increase in prices of cattle is reported.

The reduction in the number of sheep appears to be general, the only exceptions being Rhode Island, Tennessee, Missouri, Minnesota, Kansas, and the Pacific States. The loss cannot be much less than 10 per cent. In some States it is placed at 15 or more. The prices of sheep have declined slightly in certain sections, and advanced in others. In Connecticut and New Jersey, where unusual attention has been given to mutton breeds, prices have been fully maintained. In districts where the Merino stock monopolizes sheep-walks, the decline is general and in some sections heavy.

The returns of swine corroborate those of last fall showing the comparative numbers of fattening hogs, and mark a very decided reduction in numbers, amounting to 15 per cent. in a large portion of the Ohio valley. The prices are largely increased in many States—25 or 30 per cent., and not unfrequently 50 or 60 per cent. An inspection of the tables will show a marked advance, the result not only of a reduction in numbers, but of speculation naturally caused by such a state of facts.

NUMBER AND PRICES OF FARM STOCK IN FEBRUARY, 1869.

Table showing the relative proportion, in tenths, of the farm stock of the States named, in comparison with the number in February, 1868, and the prices of the same in February, 1869, for the different ages.

STATES.	HORSES.					MULES.				
	Average *number* of horses compared with that of February 1, 1868.	Average *price* per head of same under 1 year old.	Average *price* per head of same between 1 and 2 years old.	Average *price* per head of same between 2 and 3 years old.	Average *price* per head of same over 3 years old.	Average *number* of mules compared with that of February 1, 1868.	Average *price* per head of same under 1 year old.	Average *price* per head of same between 1 and 2 years old.	Average *price* per head of same between 2 and 3 years old.	Average *price* per head of same over 3 years old.
Maine	10.1	$42 22	$70 27	$97 55	$141 66	.....	.....	.....	.....	.....
N. Hampshire	10.2	35 00	56 66	82 16	109 16	.....	.....	.....	.....	.....
Vermont	10	35 78	58 64	84 21	111 14	.....	.....	.....	.....	.....
Mas'chusetts	10.3	40 71	64 28	95 00	157 50	.....	.....	.....	.....	.....
Rhode Island	10	35 00	55 66	86 66	126 66	.....	.....	.....	.....	.....
Connecticut	9.7	45 00	72 50	108 75	147 50	.....	.....	.....	.....	.....
New York	10.3	42 88	70 50	101 08	138 11	10.1	$45 78	$76 23	$114 84	$151 00
New Jersey	10	58 71	96 42	147 85	161 07	10.2	49 62	95 55	143 50	182 85
Pennsylvania	10.1	45 28	72 34	101 80	140 62	10.3	53 09	86 23	125 92	155 26
Delaware	10	45 00	75 00	100 00	125 00	10	50 00	80 00	110 00	150 00
Maryland	10	43 88	71 22	104 22	136 77	9.6	53 00	89 40	137 16	155 11
Virginia	10.6	34 70	55 93	80 58	104 14	10	41 19	67 00	108 80	125 37
N. Carolina	10	37 43	59 17	87 28	114 89	10.2	42 10	69 71	103 42	129 37
S. Carolina	10.1	36 50	68 90	101 70	135 00	10.7	52 22	79 11	114 30	150 20
Georgia	10.1	45 70	67 30	100 62	135 51	10.7	54 77	86 36	130 00	154 10
Florida	9.5	51 00	71 00	109 00	141 00	9.2	56 66	103 33	158 33	172 50
Alabama	10.5	32 66	55 00	80 83	122 50	10.8	38 50	65 00	113 33	146 66
Mississippi	10.2	35 00	58 63	87 72	135 83	10.8	39 50	66 00	115 50	157 08
Louisiana	10.5	25 83	42 50	77 85	127 14	11	32 50	50 00	106 25	145 71
Texas	9.8	13 11	21 16	29 66	40 94	9.8	16 71	27 50	44 28	69 92
Arkansas	10.5	23 31	37 87	52 85	82 87	10.8	33 42	49 14	69 71	105 12
Tennessee	10.7	45 68	68 86	94 54	118 06	10	51 95	77 13	113 33	139 04
W. Virginia	10.6	35 47	51 90	76 90	100 71	10.3	37 47	57 05	87 38	125 00
Kentucky	10.3	39 62	55 87	74 21	91 17	10.1	47 89	73 76	102 34	127 34
Missouri	11	30 53	46 58	66 20	88 30	10.8	37 37	58 58	80 58	109 76
Illinois	10.4	31 16	47 90	64 29	98 70	10.4	40 53	62 55	91 36	123 17
Indiana	10.3	31 86	49 88	73 09	94 65	10.5	36 95	60 55	88 55	115 76
Ohio	10.2	34 12	53 36	78 33	106 47	9.7	39 90	64 51	92 72	125 82
Michigan	10.6	33 56	57 67	82 06	118 98	10.8	40 71	66 25	90 93	133 92
Wisconsin	10.8	38 57	60 18	82 73	121 73	10.9	40 00	70 33	90 00	140 26
Minnesota	11	38 75	66 07	87 10	132 00	10.6	44 16	70 00	105 83	158 12
Iowa	10.6	38 51	61 74	86 89	118 58	10.8	48 76	72 50	101 76	140 50
Kansas	11.8	31 46	47 82	71 87	106 25	10.8	38 92	55 82	86 00	111 68
Nebraska	12	39 16	61 66	94 16	122 56	10.8	47 50	73 75	115 00	161 66
California	10.8	22 62	33 75	54 00	76 62	10.1	21 58	36 16	58 33	98 75

Table showing the relative proportion, &c.—Continued.

STATES.	OXEN AND OTHER CATTLE.					MILCH COWS.	
	Average *number* of oxen and other cattle, compared with that of February 1, 1868.	Average *price* per head of same under one year old.	Average *price* per head of same between one and two years old.	Average *price* per head of same between two and three years old.	Average *price* per head of same over three years old.	Average *number* of milch cows, compared with that of February 1, 1868.	Average *price* per head of same at this time.
Maine	10.3	$16 27	$27 33	$43 94	$84 44	10.1	$51 38
New Hampshire	10.5	14 83	24 33	40 66	80 83	10.8	55 00
Vermont	10.1	12 92	24 00	39 85	69 16	10.6	50 07
Massachusetts	10	16 37	32 25	54 28	84 37	10.3	67 50
Rhode Island	10.3	17 66	26 66	45 00	93 33	10.6	60 00
Connecticut	10	17 00	32 00	52 00	85 75	10.6	66 66
New York	10	12 72	25 42	44 85	72 94	10.4	54 14
New Jersey	9.9	18 42	35 57	57 42	75 92	10.4	67 50
Pennsylvania	10.2	12 73	23 41	38 42	55 50	10	47 11
Delaware	10	10 00	16 00	28 00	50 00	10	40 00
Maryland	9.8	11 77	20 55	30 66	48 11	10.3	45 44
Virginia	10.4	6 88	13 83	24 46	33 14	10.4	28 76
North Carolina	9.8	4 36	7 61	12 32	18 18	10.1	20 71
South Carolina	10.4	5 97	10 20	14 63	23 95	9.9	23 85
Georgia	10.1	5 44	9 67	14 82	22 80	10.3	22 36
Florida	9.8	3 60	6 00	8 60	16 70	9.8	15 00
Alabama	10.6	5 58	8 66	14 66	20 08	10.7	21 33
Mississippi	10.4	5 70	9 25	13 70	21 75	10.6	22 91
Louisiana	10.1	4 28	6 64	10 14	16 57	10	20 28
Texas	8.7	2 59	3 45	5 36	8 94	9.3	9 12
Arkansas	11	5 11	7 70	11 68	16 21	11.1	21 75
Tennessee	10.5	6 04	10 15	16 84	26 90	11	28 04
West Virginia	10.2	10 57	18 80	30 85	44 66	10.7	34 23
Kentucky	9.7	11 85	20 76	31 59	46 51	9.9	36 46
Missouri	11	8 03	14 95	23 47	36 40	11.4	31 21
Illinois	9.5	9 50	18 22	29 32	46 68	9.7	38 11
Indiana	9.6	8 86	17 72	30 39	44 74	10	36 48
Ohio	9.8	11 62	21 02	34 68	52 64	9.9	43 00
Michigan	10.6	9 60	19 65	32 87	57 08	11	44 62
Wisconsin	10.4	7 48	14 84	25 40	46 92	10.7	37 25
Minnesota	10.7	8 35	14 64	26 64	46 64	11.4	38 53
Iowa	10.7	10 22	17 68	28 72	46 24	11.2	36 13
Kansas	11.3	10 40	17 65	27 81	40 16	12.2	30 67
Nebraska	12	8 33	17 50	32 50	46 66	13.6	41 00
California	10	14 43	18 56	30 00	43 75	11.5	50 31

Table showing the relative proportion, &c.—Continued.

STATES.	SHEEP.			HOGS.		
	Average *number* of sheep, compared with that of February 1, 1868.	Average *price* per head of same under one year old.	Average *price* per head of same over one year old.	Average *number* of hogs, compared with that of February 1, 1868.	Average *price* per head of same under one year old.	Average *price* per head of same over one year old.
Maine	8	$2 38	$3 30	9.5	$10 62	$24 12
New Hampshire	8.3	1 95	2 62	9.5	13 33	34 20
Vermont	8	2 07	2 87	9.1	11 39	23 10
Massachusetts	9.3	2 12	3 79	8.8	11 16	27 80
Rhode Island	10	3 25	4 16	8.6	11 33	25 00
Connecticut	9.7	4 12	4 92	9.5	12 50	29 50
New York	8.5	2 36	3 29	9	9 45	19 75
New Jersey	9.7	4 44	4 67	9.4	11 96	23 84
Pennsylvania	8.9	1 99	2 84	8.7	7 75	19 11
Delaware	9	2 00	4 00	10	6 00	15 00
Maryland	9.5	3 23	3	9.1	6 48	14 34
Virginia	9	1 90	2 57	9.5	3 29	7 70
North Carolina	9.1	1 20	1 88	8.8	3 26	7 56
South Carolina	9	1 20	1 97	10	2 88	7 60
Georgia	9.3	1 17	1 77	9.7	2 84	6 50
Florida	9.5	2 31	2 97	11.4	2 15	6 20
Alabama	9.8	85	1 55	10.8	2 33	8 50
Mississippi	9	1 22	2 13	11.2	3 81	8 35
Louisiana	9.8	85	1 78	10.4	2 35	7 57
Texas	9.5	90	1 55	9.2	1 52	4 05
Arkansas	9.8	1 45	2 50	13	2 63	8 93
Tennessee	10.3	1 56	2 21	10	3 97	8 77
West Virginia	9.8	1 11	1 86	9	3 29	7 75
Kentucky	9.7	1 96	2 77	9	4 46	10 35
Missouri	11.5	1 25	1 97	11	2 70	7 03
Illinois	8.7	1 32	2 05	9	6 15	15 23
Indiana	9.1	1 26	1 76	8.5	4 91	11 56
Ohio	8.5	1 20	1 87	8	6 33	15 53
Michigan	9	1 33	2 05	9.6	5 29	12 40
Wisconsin	9.3	1 69	2 62	8.9	5 35	13 45
Minnesota	10.4	1 61	2 56	9.5	5 54	12 91
Iowa	9	1 31	1 97	10	6 02	14 41
Kansas	10.6	1 91	2 86	9.8	4 95	12 46
Nebraska	10	2 12	2 91	12	4 41	12 33
California	12	1 68	2 82	10.4	4 42	8 82

EXTRACTS FROM CORRESPONDENCE.

PREMIUM CORN CROPS.

Our Warren county, Illinois, correspondent sends the following statement of cost and product of five acres in corn, grown the past season by Adam Rankin, of Monmouth, and for which he was awarded a premium of $50 by the State society, and $20 by the Warren county society:

Yield of the five acres 575 bushels, worth 45 cents per bushel		$258 75
Breaking the ground, team two days	$6 00	
Harrowing and rolling	2 00	
Planting, with Brown's two-horse planter	1 50	
Cultivating three times, with two-horse cultivator	7 00	
One ploughing, with one-horse Diamond plough	3 00	
Hoeing and thinning	12 00	
Gathering and marketing	30 00	
Rent of ground	25 00	
Total cost of crop		86 50
Net profit		172 25

The peculiarities of the season increased the cost $3 to $4 per acre. Part of the work was done more to clear the ground than to cultivate the corn, and there was not a weed allowed to grow on the five acres. These five acres were one corner of a 30-acre field in corn, the total product of which was 3,150 bushels, or an average of 105 bushels per acre. The variety grown is a large white corn, which ripens quite early, and yields about ten bushels per acre more than the best yellow. The crop grew on a deep prairie soil, with but little sand, mostly black loam.

The premium of the Ohio State Agricultural Society for the best crop of corn was awarded to O. Burras, of North Fairfield, Huron county, who furnished the following statement to the secretary:

By 1,213 baskets of corn, at 40 cents		$485 20
By 15 loads pumpkins		15 00
By 2,800 bundles stalks		84 00
Total receipts		584 20
To ploughing	$20 50	
Dragging	7 50	
Marking	2 00	
Planting	3 25	
Seed	5 00	
Cultivating	30 00	
Hoeing	17 00	
Cutting	17 40	
Husking and cribbing	60 00	
Drawing stalks	7 60	
Forty bushels ashes	4 00	
Seventy-four loads manure	22 20	
Total cost		195 95
Net profit		388 25

Profit per acre, $28 76; soil, a sandy loam; pastured previous two seasons; manured with 295 loads barn-yard manure, applied to the poorest parts of the piece, drawn the preceding October and November, and spread as fast as drawn. The corn crop is charged with only one-fourth of the manure, the balance being charged to succeeding crops. The ground was ploughed from seven to nine inches deep during the first two weeks in May; finished planting 22d May; planted in rows north and south, 38 inches apart in the row, thinned to two stalks in the hill, four feet apart the other way. The field was divided in as near halves as practicable without measuring, and ashes applied to one-half, the effect of which was marked, the portion so treated yielding at least 100 bushels of corn more than the other half, although the latter was the best land. The field measured 13½ acres, and yielded 1,213 baskets of corn, 10 of which were weighed, and averaged 40 pounds, and which shelled 34 pounds of corn. Variety of corn, large yellow.

TRUCK FARMING IN NEW JERSEY.

Mr. R. A. Leonard, of Monmouth county, New Jersey, furnishes the following statement of the products of his farm for 1868, which was awarded the first prize by the agricultural society of that county:

RECEIPTS.

From 9 acres of asparagus	$3,042 75
Early potatoes, 15 acres	2,335 25
Grapes, 3 acres	1,470 42
Transient sales	222 09
Hay and straw, 50 tons	1,090 00
Turnips, 500 barrels	1,375 00
Goodrich and Harrison potatoes, 150 barrels	300 00
Dykeman potatoes, 33 barrels	200 00
Watermelons	2,049 33
	12,084 84
Freights and commissions	1,459 67
	10,625 17

EXPENSES.

Guano for asparagus, 1 ton	$84 00	
Guano for melons, 1 ton	84 00	
Guano for turnips, half ton	42 00	
Bone dust for grapes, half ton	25 00	
Plaster, 5 barrels	10 00	
Stable manure for melons, 300 loads, at 65 cents	195 00	
Peat, 30 loads, at $1 50	45 00	
Fish scraps for asparagus, 37 tons, at $12	444 00	
Stable manure, 750 loads, at 65 cents	487 50	
Stable manure, 750 loads, for early potatoes, at 65 cents	487 50	
Stable manure, 300 loads, at 70 cents	210 00	
Street dirt, 30 loads, at 60 cents	180 00	
	2,294 00	
One man, 12 months, at $25	300 00	
Two men, 10 months, at $20	400 00	
One man, 12 months, at $20	240 00	
One man, 10 months, at $17	170 00	
One boy, 9 months, at $10	90 00	
One boy, 9 months, at $9	81 00	
Two women bunching asparagus	60 00	
Women's labor trimming grapes	102 50	
One man occasionally by the day	50 00	
Three months' extra labor, at $16	48 00	
		3,835 50
Profit (nearly $80 per acre)		6,789 67

There is marl on the farm; 300 loads of the stable manure and 300 loads of the street dirt were used to put out young asparagus, with no increase this year.

SORGHUM CULTURE IN CONNECTICUT.

Middlesex county, Connecticut.—I received from the Department of Agriculture the sorghum seed I planted last year. About half the seed was planted on a light, sandy soil, the bog hay being ploughed under. After rolling well and harrowing fine, I made the holes and put in about as much of the scrapings of the yard in each hill as could be carried on a common spade, covering well with the soil, say to the depth of eight to ten inches—more would be better—for I believe that if covered shallow it is likely to burn the young and tender fibres and roots which spread out near the surface. The seed was then put in and covered

slightly. At first the crop looked very feeble, as usual, but as soon as the strong roots found the manure below, a very rapid and astonishing growth followed. The cane did not grow large, but the sirup made from it is of a very light color and of fine quality, though nearly one-half less in quantity than that extracted from the next described lot.

The remainder of the seed was planted on a rich, heavy soil, where tobacco had been raised the previous two years, being heavily manured each year with barn yard manure. No manure was applied for the sorghum crop. After ploughing deep and harrowing fine, the land was let to lay for a week or more, when it was again harrowed, to destroy all weeds that might have started, and then planted without any fertilizer in the hill. Such a growth has never been known in the town. From six rows, 100 paces long, I obtained 30 gallons of sirup.

There is one point, however, which is important: we cannot mature the seed of the kind you sent us, and all others are worthless as compared with this. I have always raised from seed sent from the Department, with the exception of one year. In 1865 the season was very long and dry, and the seed matured, which was planted the next year, but did not germinate well; neither did the cane seem to be like the original. I think we shall be obliged to use our seed for fodder, and get seed for planting from a southern source each year.

VEGETABLES AND FRUITS SHIPPED FROM NORFOLK, VIRGINIA.

Princess Anne county, Virginia.—I send you a short abstract of the exports of fruits and vegetables from Norfolk during the past season, as shown by the secretary of our pomological society, though the society has not yet made up a full report: Strawberries, 1,000,000 baskets; potatoes, 50,000 barrels; peas, 40,000 barrels; cucumbers, 20,000 barrels; squashes, 5,000 barrels; beets, 2,000 barrels; tomatoes, 160,000 boxes; radishes, 40,000 bunches; cabbages, 650,000 heads; melons, 150,000. The estimated value of the articles named is $1,043,200; while the shipments of asparagus, turnips, apples, pears, plums, cherries, &c., reach $41,000 more; making a grand total for the season of not less than $1,084,200.

LABOR IN SOUTH CAROLINA AND GEORGIA.

Spartanburg county, South Carolina.—Never before has there been so great a demand for labor, especially white labor. Even the most worthless of the freedmen readily obtain employment at good wages. There will be greater effort here to raise cotton the coming season than ever before.

Houston county, Georgia.—I have adopted the northwestern system of hiring and working laborers, and have succeeded beyond anticipation, my clear profits on high pine lands having been 14⅛ per cent.; and I have plenty of labor while with my neighbors it is scarce; the once ruling passion to drive being still popular with the landlord but not with the tenant. Our people are now crazed to plant cotton, because of its price, to the exclusion of corn; but with me it shall be the reverse. We want capital here, and northern men with their capital. I was a colonel in the confederate army, but want peace and good-will now to prevail, from which prosperity must flow.

LIME AND THE POTATO CROP.

Clarion county, Pennsylvania.—I wish to state my mode of raising potatoes. About 15 years ago we had the dryest summer I ever saw in western Pennsylvania, having little rain from spring until fall. Discov-

ering that little black insects were eating my potato leaves, I took a watering-can and sprinkled the top with lime-water, and then took a riddle and dusted lime over them profusely. In two weeks I found the insects all at work again, when I repeated the operation. In the fall I had one of the best crops of potatoes I ever saw, while there were very few good potatoes in all our neighborhood.

PLANTING AND HARVEST IN ILLINOIS.

Mr. G. B. Moss supplies the annexed table showing the time of sowing and reaping wheat and oats, planting and husking corn, and harvesting hay, in Boone county, Illinois, in the years named, the dates indicating the commencement of each branch of the operations:

	WHEAT.		OATS.		CORN.		HAY.
	Sowing.	Reaping.	Sowing.	Reaping.	Planting.	Husking.	Mowing.
1857	April 20	August 4	May 4	August 13	May 19	October 16	July 20
1858	March 29	July 23	April 23	July 23	May 13	October 22	July 8
1859	March 25	July 22	April 6	July 18	May 13	October 18	July 11
1860	March 13	July 12	March 17	July 10	April 28	September 2	July 5
1861	March 25	July 25	April 12	July 29	May 7	October 24	July 5
1862	April 11	July 26	April 19	August 1	May 9	November 11	June 14
1863	March 28	July 21	April 6	July 18	May 4	October 19	July 1
1864	April 2	July 12	April 12	July 18	May 4	October 15	July 5
1865	March 28	July 11	March 30	July 26	May 8	October 18	July 5
1866	April 11	July 24	April 21	August 1	May 11	October 2	July 16
1867	April 9	July 27	April 22	August 1	May 11	October 5	July 13
1868	March 24	July 20	April 10	July 24	May 14	October 14	July 6

Average commencement of sowing wheat, April 1st; reaping wheat, July 21st; average time of growth of wheat, 111 days.

Average commencement of sowing oats, April 12th; reaping oats, July 26th; average time of growth, 104 days.

Average commencement of planting corn, May 10th; husking corn, October 14th; average time of growth, 157 days.

CROPS OF OREGON, 1868.

David Newsom, of Salem, Oregon, sends the following estimate of the crops of that State the past season:

Wheat, 5,000,000 bushels; oats, 3,000,000 bushels; barley, 50,000 bushels; potatoes, 500,000 bushels; wheat averaged 22 bushels to the acre, oats 40, rye 25, barley 20, potatoes 100, turnips 175, ratabagas 475, parsnips 175, carrots 100, beans 75, onions 150, peas 25, flaxseed 16, apples 50, pears 25, hay 1½ tons. Pork and beef sell for $6 per hundred weight, net; butter, 35 cents per pound; lard, 10 cents per pound; cheese, 20 cents; beans, 5 cents; onions, 3 cents; potatoes, 1 cent; carrots, 1 cent; parsnips, 2 cents; apples, green, 1 cent; dried apples, 8 cents per pound. The grain crops were good, but for most other crops the season was unfavorable.

Fall wheat now looks well and pastures are becoming green, though grazing is short. A large acreage was ploughed in western Oregon last fall, and farmers appear to be waking up to their true interest—making a large surplus of grain and meats for export. This county is as large as the State of Rhode Island and contains the elements of immense wealth, not appreciated even at home. There are millions of tons of almost pure iron ore, besides almost exhaustless quantities of limestone, rich beds of stone coal, freestone for building, gold, silver, and lead ore; great forests of pine, cedar, fir, hemlock, alder, and oak; with superior water power, and large bodies of rich arable land, good water and grand scenery. The population of the county is about 10,000, about 4,500 of which is in Salem.

There have been extensive fires raging on the Cascade and Coast range of mountains for two months past. Large districts have been destroyed and great damage done to farms and improvements. Much of the time the sun and stars were not visible, and the smoke was so dense that candles were burned all day long in our dwellings. The smoke extended far out on the ocean, and vessels were compelled to lay to, not being able to proceed on their voyage.

CROPS, ETC., IN FLORIDA.

Samuel Fairbanks, of Jacksonville, Florida, reports that in east Florida, and particularly on the St. John's river, truck farming is rapidly extending. Beets, turnips, and green peas are now in market, and tomatoes and Irish potatoes are now being planted. Next month, cucumbers, beans, corn, and sweet potatoes will be put in the ground. Cotton and sugar cane will be planted last of this month and next. The severe cold weather of the last 10 days of December it is thought will in a great measure destroy the embryo or larvæ of the caterpillar, which has been so destructive for the last three years. Planters will, therefore, plant more this season, and it is probable that the crop of 1869 will exceed that of 1868 at least 50 per cent., and if a good crop year, 100 per cent. Sugar cane is always a reliable crop, and was quite large the past year. This also will be increased the coming year. Tobacco planting is confined to two or three counties, and crops were good. Cotton, cane, and tobacco have ruled at good prices, viz: Sea-island cotton, 50 cents to $1 per pound; upland cotton, 24 to 29 cents per pound; sugar, 10 to 12½ cents per pound; tobacco leaf, 20 to 38 cents per pound.

I should judge that the crops of 1868 amount to probably two-thirds of the crops of 1860. Hereafter our crops will steadily increase. One of the great reasons of this increase is that the labor will be more reliable and steady. Emigration, though not rapid, is increasing, and new lands are being opened up. On the whole, I think the year 1869 opens with better prospects than any since the war. I would add that the State Agricultural and Emigrant Association is in active operation. The State commissioner of emigration is now organizing his bureau, and will operate with our State society.

PROFITS OF SUGAR CULTURE IN LOUISIANA.

St. Landry parish, La.—The following statement shows the expenses and net profits of a sugar plantation in this parish the past season:

193 hogsheads of sugar, at $125 net	$24,125
375 barrels of molasses, at $20 net	7,500
3 acres of cane	1,000
	32,625
Wages and rations for 12 hands and other expenses	6,965
Net proceeds of crop	25,660

Land in cultivation: 92 acres of cane, 80 acres of corn; of the cane, 72 acres was ground, and 20 acres saved for seed.

CROPS IN WASHINGTON TERRITORY.

Pierce county, W. T.—The season of 1868 was exceedingly dry, no rain of consequence falling during a period of four months, from the last of June to the last of October, yet our crops were about an average, and generally gathered in prime condition. The winter thus far has been remarkably mild, grass still growing, and many leaves yet on the apple trees, (January 1.) Instances were numerous of 40 bushels of wheat to the acre, but I would not set the average above 25 bushels. Our barley will average 35 bushels, and I have known of 80 bushels to the acre on new land. Oats yield 40 bushels per acre. Hops are attracting the attention of our farmers, and enough have been raised to demonstrate the fitness of the soil and climate for their culture, 5,000 pounds being raised on two acres, but we cannot expect to average that amount.

Corn is not grown to much extent, the nights being too cool; yet we can raise the early varieties. Our pork, however, is principally made from peas, wheat, and barley. Apple trees are much injured here by what is known as the spot, or blight—dead spots appearing on the bark—but the pear trees are free from this disease, and, in fact, from almost any disease. All kinds of fruit trees bear early and profusely in this climate, and of the best quality. Small fruits do exceedingly well.

STOCK, ETC.

Medina county, Ohio.—The annexed table shows the number of horses, (including mules,) cattle, and sheep in this county for the several years named:

Year.	Horses.	Cattle.	Sheep.
1860	8,896	28,967	85,839
1861	9,061	29,145	98,487
1862	8,910	27,241	108,404
1863	8,565	23,790	124,528
1864	7,938	18,159	127,981
1865	7,411	14,088	147,603
1866	7,859	17,130	161,616
1867	7,270	20,898	155,514
1868	7,642	22,292	150,223

Stark county, Ohio.—There were listed for taxation in May last in this county 12,508 horses, 27,737 cattle, 144 mules, 160,000 sheep, and 29,118 hogs. This does not include sucklings of any kind.

Jefferson county, W. Va.—From reliable data I make the following estimates for this county, not including the towns and villages: hogs slaughtered, 7,096; weight of same, 1,171,336 pounds, or an average of a little over 165 pounds; average price, $8 per hundred weight; total value, $93,706 88.

Bates county, Mo.—After three years' settlement, this county presents the following statistics:

Total population of county	10,790	Bushels of wheat	17,919
Horses	5,844	Bushels of corn	488,801
Mules	704	Bushels of oats	65,435
Jacks	18	Bushels of rye	306
Jennets	20	Pounds of tobacco	1,405
Cattle	12,535	Pounds of wool	22,119
Sheep	15,371	Tons of hay, (timothy)	37
Hogs	21,432	Gallons of molasses	35,401

Knox county, Mo.—The assessors' books show that there are in this county 5,228 horses, 938 mules, 14,530 cattle, 23,421 sheep, and 23,318 hogs, valued as follows: horses, $257,904; mules, $47,789; cattle, $248,884; sheep, $29,297; hogs, $60,346; total value, $644,220.

Cross county, Texas.—The stock in this county number as follows: horses, 7,900; cattle, 130,493; sheep, 8,900; hogs, 40,000; no mules.

Union county, South Carolina.—Our people are not raising horses and mules enough to supply the home demand. It is a false economy to buy from abroad when each farmer with very little expense can raise a colt or mule until it is three years old. On a well-managed farm, working about four horses, a colt can be raised each year at a cost at three years old of about $60. Instead of this the farmers prefer buying either old

stock at reduced rates, or stock from Tennessee and Kentucky at prices varying from $150 to $250. Fine mules under eight years old are now selling for cash at $200 to $250 each. I trust our people will soon learn that it is economy to raise their own stock. I am sorry to say that sheep are rapidly disappearing in some sections, for which the dogs and hungry freedmen are blamed. Want of attention at the right time causes the loss of many. Our stock is generally the common sheep of the country, in some instances crossed with the Merino, and considerably to the advantage of the flocks so crossed. Our people are not all awake on the subject of sheep-raising. For our climate it is the cheapest and best meat we can raise. Last year I killed 350 pounds of fair mutton which cost nothing, as the wool from the flock paid all expenses for keeping and feeding. We need some finer and better stock to cross with. We are doing a little in the way of raising hogs. Our farmers are beginning to learn that bacon at 25 cents per pound will pay, and many of us are endeavoring to make at least enough to supply our own tables as well as the hands in our employ.

SHEEP.

Ottawa county, Michigan.—I have to report a large diminution in the number of sheep in this county. They have paid well for five or six years until last season, but are now considered the poorest stock for our farmers. It is impossible to make the keeping of sheep a paying business at the present time, either for mutton or wool—$2 50 per head being the highest price for the best mutton-sheep on the 1st of December last.

Wyoming county, Pennsylvania.—A decrease of six-tenths in sheep has taken place during the past year. Wool is lower than ever before in this county—33 to 35 cents for brook-washed wool. This causes a great decline in the number of sheep, as farmers do not take into consideration the benefit of sheep to their farms in improving the land for crops, but put on other cattle for quick returns.

Onondaga county, New York.—You will see by my report that the sheep are less in number than in any previous return. Wool has been low and thousands of sheep have been slaughtered. The only increase of stock has been in cows, which are fast sweeping other stock from our farms. Butter and cheese pay better than any other product on lands situated at any considerable distance from market. Wool-growing is about over in this section unless the price is largely advanced.

Niagara county, New York.—The slaughter of sheep still continues, so that I think there are not much over six-tenths the number of two years ago. The decline is caused by the low prices of wool and the comparative high prices of grain and pork.

Walworth county, Wisconsin.—The number of old sheep has materially diminished. Thousands have been slaughtered for their pelts, and the high price of other meats will cause many hundreds, and probably thousands, to be slaughtered during the early spring.

Rutherford county, Tennessee.—Sheep can be profitably raised here, and numerous attempts have been made to increase the product; but it seems utterly impossible under existing circumstances. The dogs outnumbered the sheep, two to one. Every negro family has from one to three families of dogs—curs of mean and low degree. Our legislature has been appealed to again and again without any good results.

Fayette county, Tennessee.—Our sheep are gradually disappearing, due to worthless curs.

Putnam county, Florida.—The raising of sheep here is impracticable, from the fact that nearly every negro and many whites keep a lot of half-starved curs which they call "hunting dogs," but all the evidence of their hunting qualities that I have yet seen is that they will destroy a flock of sheep in about 20 minutes.

DISEASES AMONG STOCK.

Coffee county, Tenn.—The decrease of three-tenths in hogs is due to the prevalence of a disease called hog cholera; but for this cause a large increase could have been reported. The disease has been and still continues very destructive in the most thickly-settled portions of the county, where hogs are kept in enclosures. On the table lands, where they run at large in the forests, selecting their own range and beds, they are perfectly healthy and thrifty. By allowing my hogs to bed about and under my wheat-straw in the cold weather of December, I have lost about 260 out of 300, and am quite confident that the straw killed them.

Fayette county, Tenn.—Hog cholera has been quite destructive, chiefly among the pigs and younger hogs. It has become usual, however, to class all destructive epidemics under the head of cholera.

Rutherford county, Tenn.—Hog cholera has carried off several thousand hogs in this county during the fall and winter; so that, although the prospect was good in September, I have now to report a less number on hand than at the same time last year. This county exported 2,500 hogs on foot; but the number killed in the county was much less than last year.

Watonwan county, Minn.—A disease known here as "horse diphtheria" has been very prevalent during the month of January, and a number of horses have died, though a majority of those attacked recover. The disease resembles in many respects both the distemper and the glanders, is contagious, and appears to run its course in spite of any treatment adopted thus far.

RESTORING WOOD LOTS.

Our Beloit, Rock county, Wisconsin, correspondent suggests the following as the best way to preserve wood lots:

Most of the wood lots of Rock county are of second growth yellow and white oak. The second crop may be cut to advantage at from 15 to 20 years old:

1st. Cut in mid-winter and close to the ground, as the stumps will send out all the more vigorous sprouts.

2d. Cut in strips from east to west, on the north side, thereby giving the young trees the fullest advantage of the shade of the standing timber.

3d. Leave the brush evenly distributed over the ground, to serve as mulching for the young trees and to prevent the ground from sodding over, which if allowed, good-bye to your wood lot. It will also protect the trees when quite young from the depredations of cattle.

4th. Cut clean every bush, as a vigorous sprout is better to grow a thrifty tree from than a dwarfed sapling. Fifteen acres thus managed will abundantly supply an ordinary farm-house with fuel indefinitely. Yet, for the want of proper care of young groves mainly, the fuel question has become a serious one throughout the whole northwest, and much of the east also.

REPORTS IN FOREIGN LANGUAGES.

A letter from Jefferson county, New York, presents the following plea for the publication of the monthly report in German:

Every number of the monthly reports issued by the Department is replete with information of great importance to all whose aim it is, or should be, to bring the farm to the highest state of productiveness. The more these valuable reports are spread and read, the more

their usefulness will be appreciated and acknowledged. But there is a numerous class of farmers in our country which can be in no way benefited by these reports, as they are published in a language which that class do either not at all, or, at best, not sufficiently understand—I mean our German farmers, who can be found in every corner of our broad country. They surely would gladly and thankfully avail themselves of all the information supplied by the agricultural reports could they read them in their tongue. It is very desirable that their wants be supplied by a German edition. It would give them a chance to keep pace with their now more favored brother farmers who are so fortunate as to understand English. Anxious for the advancement and progress of my German brother farmers, I would respectfully urge you to cause a translation of the regular monthly report, and that a sufficient number of printed copies of the same be distributed amongst my countrymen throughout the land.

The reasons why this suggestion cannot be heeded are two at least:

1. It is not the policy or practice of this government to publish official reports for home circulation in any foreign language.

2. It is not the object of the issue of the monthly report to afford reading to American farmers whether of foreign or native birth. To such publications agricultural periodicals might very properly take exception, and national legislators interpose decided obstacles. Its issue is fully authorized under the original act of organization of the Department of Agriculture; but the purpose of its publication is fully met by supplying editors and writers representing the American press and officials of agricultural societies—centres of thought and of influence—who are fully capable of distributing the gist of all valuable information furnished and of diffusing it among the millions whom they represent. In this way the readers of German papers may be benefited as well as English reading farmers, without the expense and complication of a duplicate publication in a foreign tongue.

WHITE POLISH OATS.

Dr. J. M. Shaffer, secretary of the Iowa State Agricultural Society, sends us the following report on experiments with the white Polish oats sent out by the Department last year:

B. R. Palmer, of Low Moor, Clinton county, Iowa, received half a bushel of the oats, which he planted April 15th on 30 rods of prairie, rather moist in a wet season. The land had been in timothy six years, was mowed in July, ploughed in August, and dragged fine just before freezing; ploughed again one foot deep April 8th and well dragged. The oats grew nicely and a heavy crop was anticipated. The growth of straw was heavy and it lodged badly and had to be cut one way. The hot and dry weather at the time it was filling seemed to prevent its maturing. The crop was cut 25th of July and threshed out two bushels and two quarts weighing 70 pounds. There came some very heavy rains soon after planting; the hot weather forced a rapid growth of straw, and the hot dry weather prevented its maturing fully. Oats are generally very poor in this county, seldom yielding one-half a crop at the best.

D. B. Clark, of Council Bluff, Iowa, sowed half a bushel March 31st, on ground ploughed the previous fall. Sowed thinner than usual, harrowed well. The grasshoppers pastured on them while growing and cut off the grains very badly after heading, so much so that the crop seemed at one time not worth harvesting. Crop was cut July 18 and threshed out 16¼ bushels, weighing 39½ pounds to the bushel. Considering the damage done by the grasshoppers they did well and Mr. Clark will give them another trial.

Edward Campbell, jr., Fairfield, Iowa, sowed one bushel on level prairie, lying high, and in ordinary season dry, and which had produced nine successive crops of corn. The ground was ploughed the week before sowing and the seed sown alongside of other oats, the only difference made being that the former was sown thinner, the bushel sowing 110 rods of ground. Three weeks of cold weather followed injuring all the oats, and the Polish being sowed thin gave the weeds a better chance. The varieties grew and ripened together, and all were seriously injured by the terrible hot weather preceding the ripening. All were cut July 20th. The Polish threshed out 18 measured bushels, weighing a fraction over 36 pounds to the bushel; the other averaged about 30 bushels to the acre, weighing 30 pounds to the bushel; the Polish a few more pounds to the acre, but was much in advance of the common oats when the quantity of seed is considered. Mr. Campbell thinks the new variety had not a fair trial and will give it a better chance the coming season, thinking it will prove a valuable acquisition.

ROCKY MOUNTAIN GOAT.

Samples of both the long and short fibre of the fleece of the *Aplocerus montanus* have been received, through Senator Williams of Oregon, from William Purvine, of Philipsburg, Montana, the fine hair being the under fleece, very fine but with apparently little felting capacity; the coarser specimen, from the upper joints of the legs and from the spine, straight, white, about six inches long, and assumed to be the growth of four months, being taken in October, while the fleece is annually shed in the latter part of June. The carcass weighed 300 pounds dressed. Mr. Purvine asks what inducement can be held out for capture of specimens of these animals for attempted acclimatization and domestication elsewhere. Money need not be advanced; all that is wanted is an assurance that the price will be paid on delivery of the live animals. The cost is not stated. Skins can be obtained for museums at less inconvenience and expense. It is hoped that an experiment may be made with them.

THE WOOL TRADE.

The following table shows the imports of foreign wool at New York during the year 1868, in comparison with those of 1867, together with the sources of supply:

Source of supply.	1868.		1867.	
	Weight—lbs.	Entered value.	Weight—lbs.	Entered value.
England	2,054,425	$322,196	4,683,941	$891,550
Buenos Ayres	3,156,885	405,882	5,760,630	867,403
France	109,169	13,197	1,847,802	239,949
Belgium	149.152	12,810		
Africa	854,933	119,402	187,045	31,922
Brazil	1,666,893	198,435	1,301,919	203,478
Bremen			100	20
New Granada			2,181	279
Hamburg		2,741		
British West Indies	475	39	421	39
Turkey	210,963	20,564	16,875	1,806
Dutch West Indies	21,542	1,985	11,466	1,379
Mexico	21,733	1,644		
Argentine Republic	280,294	56,108	1,586,266	262,286
Russia	3,122,013	570,765	2,256,457	452,143
British East Indies	17,474	1,844	33,600	5,475
Chili	1,736,179	199,877	673,054	79,524
Venezuela			203	23
Austria			2,050	347
Canada	144,977	43,427		
Total	13,547,107	1,970,916	18,364,010	3,040,623

Amount received at Boston in 1868 was 10,378,791 pounds; Philadelphia, 408,600 pounds.

The stock of wool on hand at New York January 1, 1869, as compared with same date in 1868 and 1867, was as follows:

	1869.	1868.	1867.
Domestic fleece ..... lbs..	7,287,000	3,674,000	4,450,000
Pulled ..... lbs..	1,162,000	729,000	800,000
Texas ..... lbs..	571,000	408,000	930,000
California and Oregon ..... lbs..	2,118,000	1,700,000	1,150,000
Total domestic ..... lbs..	11,138,000	6,511,000	7,330,000
Total foreign ..... lbs..	5,694,200	8,313,650	14,902,500
Total	16,832,200	14,824,650	22,232,500

Total stock of domestic wool in Boston, 11,350,000 pounds; Philadelphia, 5,462,000.

The San Francisco Commercial Herald gives the following statistics of the wool production of the Pacific States:

	Pounds.
Received at San Francisco	12,921,256
Retained by interior mills	310,000
Pulled wool, including manufactured, at San Francisco ...	1,570,000
Total product of California wools for 1868	14,801,256
Amount received from Oregon, Washington Territory, and British Columbia	706,800
Amount on hand January 1, 1868	528,600
Total stock for 1868	16,036,656
Of which was shipped to New York and Boston	13,225,166
Retained by interior and local mills	2,811,490
Total	16,036,656

The receipts of fleece wool at San Francisco for several years past have been as follows:

FROM CALIFORNIA.

	Pounds.
1862	5,342,531
1863	6,559,885
1864	7,23[illegible],514
1865	6,455,970
1866	6,546,750
1867	8,628,286
1868	12,921,256

FROM OREGON, ETC.

	Pounds.
1862	410,200
1863	342,800
1864	430,200
1865	791,600
1866	753,200
1867	859,400
1868	706,800

Retained for home manufacture in 1866, 2,764,950 pounds; in 1867, 2,737,759 pounds; in 1868, 2,811,490 pounds. Prices ranged from 12½ to 22 cents according to quality and condition.

PRODUCTIONS OF CALIFORNIA IN 1867.

The annexed table, compiled from the annual returns of the assessors of the several counties, exhibits the number of acres of land enclosed and under cultivation in California during the year 1867, with the amount of wheat, barley, and oats raised thereon:

Counties.	Acres enclosed.	Acres cultivated.	Wheat.		Barley.		Oats.	
			Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.
Alameda	125,581	90,666	59,801	1,322,454	14,751	475,702	2,583	54,906
Alpine	13,000	500	75	1,000	200	3,600	45	470
Amador	60,760	18,050	2,654	50,000	3,280	69,560	66	
Butte	210,664	42,966	20,630	482,470	10,122	220,350	456	10,707
Calaveras	38,000	11,750	210	2,550	1,460	6,400		
Colusa	128,760	52,315	25,500	706,400	25,000	875,000	200	7,000
Contra Costa	82,157	52,314	39,859	692,480	10,106	287,120	611	22,158
Del Norte	4,860	1,978	411	9,982	158	6,210	445	18,661
El Dorado	82,996	15,520	943	6,278	534	7,000	203	890
Fresno	8,673	4,100	375	7,457	570	15,755		
Humboldt	28,408	12,127	1,342	32,314	387	16,254	3,698	165,472
Inyo	3,500	2,080	343	8,090	378	9,747	55	368
Kern	3,750	2,400	206	5,217	883	24,893	60	1,800
Klamath	3,201	1,500	62	1,080	15	240	45	950
Lake	11,030	8,730	4,189	62,299	1,917	24,362	232	3,873
Lassen	13,371	3,691	622	8,563	2,558	66,798	469	11,385
Los Angeles	17,300	15,000	810	19,200	4,400	154,000		
Marin	181,465	33,257	3,936	102,240	1,278	38,246	12,460	513,678
Mariposa	24,999	4,084	1,235	5,309	2,344	7,816	261	372
Mendocino	135,000	46,000	15,600	200,840	4,340	127,500	10,800	34,000
Merced	135,000	20,000	3,000	45,000	5,000	125,000		
Mono	11,720	2,495	393	7,268	408	7,560	163	2,805
Monterey	118,490	40,450	5,750	226,750	27,500	1,723,200	150	5,700
Napa	95,200	41,110	37,410	592,323	1,750	53,000	1,045	32,440
Nevada	58,575	23,250	675	12,000	100	2,000		
Placer	73,550	21,000	8,170	65,300	2,705	23,400	760	1,300
Plumas	45,632	2,200	951	14,541	62	1,990	979	29,965
Sacramento	210,148	75,274	8,852	131,000	18,600	375,000	1,550	31,000
San Bernardino	14,642	12,000	2,500	50,000	6,000	120,000	9	130
San Diego	2,360	1,950	400	8,000	1,270	31,750		
San Francisco	18,500	3,200	20	500	300	5,000	600	3,500
San Joaquin	268,000	126,000	91,800	1,197,400	30,760	429,840	7	260
San Luis Obispo	43,085	3,623	1,210	11,210	735	30,400	30	
San Mateo*	150,000	89,000	20,000	420,000	8,000	258,000	5,100	203,000
Santa Barbara	16,244	7,200	1,500	1,200	2,200	6,800	150	
Santa Clara	467,931	125,740	80,339	1,229,339	9,219	170,400	500	5,800
Santa Cruz	50,785	17,405	7,139	166,676	1,997	62,680	719	24,826
Shasta	59,480	33,621	7,421	86,429	7,325	187,215	1,244	11,460
Sierra	13,920	1,495	206	3,780	365	8,845	220	7,200
Siskiyou	63,052	18,424	6,321	126,420	2,234	66,920	3,004	90,120
Solano	192,988	76,739	61,329	1,454,830	13,605	348,980	400	9,500
Sonoma	446,963	246,163	123,814	1,079,181	15,405	279,156	10,850	274,932
Stanislaus	120,594	200,456	144,852	2,317,632	42,748	854,960		
Sutter	112,619	93,734	31,585	287,167	29,636	431,461	239	5,615
Tehama	79,515	26,816	14,520	300,000	7,213	15,100	76	2,850
Trinity	10,926	3,753	960	11,370	108	1,487	107	2,025
Tulare	15,681	5,310	2,336	39,884	3,757	65,584	27	550
Tuolumne	40,110	13,600	1,950	19,600	3,550	18,500	25	245
Yolo*	161,748	87,471	47,705	1,446,579	26,408	867,690	830	10,600
Yuba	58,842	22,613	7,193	143,000	6,200	150,300	700	20,650
Totals	4,363,655	1,851,930	898,709	15,222,572	360,672	9,158,131	62,173	1,622,563

* Returns of 1866.

Though the assessor's returns for 1868 are not yet made up, it is estimated that from 800,000 to 900,000 acres were added to the enclosed lands during the year, and 300,000 acres more brought under cultivation. The area in wheat was largely increased, and the local estimates for this year range from 20,000,000 to 25,000,000 bushels. The barley crop of 1868, though considered a small one, is estimated larger than the preceding crop, while the crop of oats is thought to be about the same as in 1867.

The following table shows the acreage and yield of other crops grown in the State in 1867:

Crops.	Acreage.	Bushels.	Crops.	Acreage.	Tons.
Rye	1,495	16,071	Beets		3,563
Corn	25,670	971,055	Turnips		2,504
Buckwheat	680	10,275	Pumpkins and squashes		12,097
Peas	2,512	64,470			*Pounds.*
Peanuts	113	78,006	Flax	128	7,861
Beans	5,231	149,893	Hops	992	569,907
Castor beans	341	337,255	Tobacco	153	90,817
Potatoes	20,908	1,359,658	Butter		4,964,213
Sweet potatoes	734	75,408	Cheese		2,786,338
Onions	1,531	70,200	Wool		6,715,049
Broom corn	1,419		Honey		455,455
		Tons.			
Hay	297,106	364,309			

GRAPE VINES, WINE, AND BRANDY.

The number of vines cultivated and the product of wines and brandies during the same year are returned as follows:

County.	Grapes.	Wine.	Brandy.
	Vines.	*Gallons.*	*Gallons.*
Alameda	184,000	12,500	2,400
Alpine			
Amador	1,140,000	64,800	810
Buena Vista			
Butte	459,000	54,780	2,845
Calaveras	457,000	38,300	910
Colusa	63,500	73	
Contra Costa	298,752	58,838	12
Del Norte			
El Dorado	1,353,000	159,530	7,375
Fresno	5,520		
Humboldt	260		
Inyo	475		
Kern	1,000		
Klamath	3,900	300	
Lake	15,146		
Lassen	1,500		
Los Angeles	3,838,000	760,000	77,000
Marin	12,000	1,500	
Mariposa	84,000	3,967	
Mendocino	10,000		
Merced	141,080	14,000	1,000
Mono	61		
Monterey	154,850	2,000	400
Napa	1,425,300	113,000	12,050
Nevada	165,000	13,500	1,200
Placer	450,000	39,500	4,670
Plumas	2,300		
Sacramento	1,035,000	56,180	2,568
San Bernardino	365,000	40,635	3,340
San Diego	40,000	2,820	
San Francisco	134		
San Joaquin	500,000	20,000	800
San Luis Obispo	20,000		
San Mateo*	16,000		
Santa Barbara	278,000	16,800	500
Santa Clara*	2,000,000	37,100	9,550

* Returns of 1866.

The number of vines cultivated, &c.—Continued.

County.	Grapes.	Wine.	Brandy.
	Vines.	*Gallons.*	*Gallons.*
Santa Cruz	233,075	8,100	.....
Shasta	1,321,426	7,020	1,940
Sierra	4,730	700	.....
Siskiyou	28,124	2,100	.....
Solano	506,886	49,697	14,340
Sonoma	2,865,427	176,347	4,454
Stanislaus	181,000	10,000	900
Sutter	169,164	10,145	4,856
Tehama	146,290	8,000	300
Trinity	17,000	.....	200
Tulare	136,000	.....	.....
Tuolumne	525,000	42,260	1,043
Yolo*	157,434	18,637	5,687
Yuba	561,000	33,300	4,210
Totals	21,372,334	1,876,429	165,360

* Returns of 1866.

It is claimed that the returns of the assessors fall considerably below the actual facts, and that in 1867 there were nearer 30,000,000 than 21,000,000 of vines planted. The wine crop of 1868 is thought to be the largest ever made, being estimated from unofficial data as high as 7,000,000 gallons, of which Los Angeles produced 1,500,000, and Sonoma 900,000 gallons.

FRUIT TREES, VINES, ETC.

Apple trees	1,217,799	Lemon trees	3,712
Peach trees	969,692	Orange trees	17,281
Pear trees	302,392	Olive trees	14,838
Plum trees	195,896	Prune trees	6,527
Cherry trees	93,998	Almond trees	25,319
Nectarine trees	43,999	Walnut trees	15,614
Quince trees	40,404	Gooseberry bushes	172,783
Apricot trees	52,308	Raspberry bushes	1,336,048
Fig trees	33,924	Strawberry vines	9,981,575

The assessors report 356,053 mulberry trees in the State in 1867, and the manufacture of 3,043 cocoons in 1867. The official returns for 1868 have not yet been made up, but it is estimated that the number of trees had been increased to 1,175,000, of which Sacramento has 425,000, Yolo 400,000, Santa Clara 150,000, Santa Barbara 100,000, Los Angeles 50,000, and Nevada 50,000, besides small lots in counties not named. The estimate of cocoons produced in 1868 is, Sacramento 600,000, Yolo 325,000, Santa Clara 100,000, Santa Barbara 200,000, Los Angeles 25,000, Nevada 100,000—total, not including small lots in other counties, 1,350,000. Eggs produced in 1868, in Sacramento 700 ounces, Yolo 400, Santa Clara 100, Santa Barbara 50, Los Angeles 25, and Nevada 75—total, 1,350 ounces; of which about 800 ounces were shipped to Europe, the remainder being retained in the State for hatching this spring. Captain William M. Haynie, near Sacramento, last year fed about 800,000 silkworms, making about 600,000 cocoons, and sold over 400 ounces of eggs for shipment to Europe. Mr. I. N. Hoag, of Yolo county, fed about 600,000 worms and produced 325,000 cocoons, and sold 400 ounces of eggs. Both gentlemen lost large numbers of worms from inability to furnish them with proper food. The sale of the eggs promises to become a large business for California. The amount paid for eggs in Japan alone, last year, amounted to $4,900,000.

FARM STOCK, ETC.

The following exhibits the total number of farm stock, poultry, &c., in the State in 1867:

Horses	209,847	Sheep	1,833,667
Mules	24,009	Cashmere and Angora goats	7,413
Asses	1,616	Hogs	412,507
Cows	186,364	Chickens	1,459,069
Calves	150,259	Turkeys	157,228
Beef cattle	159,781	Geese	25,537
Oxen	13,072	Ducks	81,289
Total neat cattle	503,046	Hives of bees	32,767

CALIFORNIA ITEMS.

The San Francisco Commercial Herald reports that the exports of wheat from that port from July 1st to December 31st, 1868, amounted to 150,000 tons, and of flour 24,000 tons, making a total, reducing flour to wheat, of 184,000 tons; and estimates a surplus of 170,000 to 180,000 tons yet available for export, besides 80,000 tons surplus in Oregon, which must find its way to San Francisco, leaving an aggregate surplus for shipment of from 250,000 to 260,000 tons.

The following figures show the receipts and exports of the articles named for the year ending December 31, 1868:

	Receipts.	Exports.
Wheat.....sacks..	5,728,852	4,099,115
Flour.....bbls..	308,276	461,868
Barley.....sacks..	657,887	78,422
Oats.....sacks..	232,285	6,479

California imported 18,977 firkins of butter last year, against 24,150 pounds in 1867; and of cheese 1,300 casks and barrels, 32 tubs, 1,270 boxes, and 517 packages, against 40 casks and barrels, 36 tubs, 767 boxes, and 430 packages in 1867, showing a considerable decrease in the importations of the former and an increase of the latter article. The average price of the butter imported in 1868 was 31 cents; in 1867 it was 25¼ cents. Another year should find California making its own supply of butter, the importations having declined from over 60,000 firkins in 1865 to 42,171 in 1866, to 24,150 in 1867, and then to 18,977 the past year.

Farley D. Granger, jr., of Alameda county, California, raised over 500 tons of chiccory in 1868; and his mill now roasts about three tons daily.

An association has been formed in Sonoma county, California, with a capital of $10,000, for the purpose of cultivating sorghum and manufacturing sugar and molasses therefrom.

A vintner of Cache creek, California, whose extensive vineyard has suffered terribly for the past three years from the depredations of a diminutive hopper infesting the native grass, and which in the dry season leaves that grass to prey at night upon the leaves of the grape, under which it lies concealed during the day-time, has found a remedy that saved his crop last year. When the leaves fall from the vines the insect takes refuge in the native grass underneath. He turned his hogs into the vineyard and gave them the free run of it all winter. By spring-time the pigs destroyed nearly every vestige of the enemy.

California papers urge the cultivation of sumac in that State, and think their climate and soil peculiarly adapted to its growth. The Alta says it could be grown with profit on the foot-hills of the Sierra Nevada, and on sundry plains, as it requires neither richness nor much moisture in the soil. Suckers of this shrub are planted in hills two and a half feet apart each way, and after the first year it is cut down to the ground every fall for 20 years, and when the field ceases to be profitable it must be ploughed up and allowed to lie fallow, or be planted with some other crop. It should yield one ton per acre. [A considerable business in gathering and manufacturing the common wild sumac has been carried on in Virginia for some years past. A recent analysis of American sumac in Liverpool resulted as follows: tannin, 20.80; sand, .75; vegetable matter, 78.45 = 100. The proportion of tannin in the Sicily sumac is said to be from 16 to 26 per cent. The poorest sumac (French) yields seven per cent. of tannin, and sells in Liverpool at £8 10*s.* per ton. The Sicilian sumac sells at £13 to £25 per ton. The American sumac, if containing 20 per cent. of tannin, should command £16 per ton. Sicily sumac is quoted in New York at from $50 to $180 per ton.]

LUMBER TRADE AT CHICAGO.

The following table exhibits the receipts of lumber, lath and shingles at Chicago for the several years named:

	Lumber.	Lath.	Shingles.
	Feet.	*No.*	*No.*
1857	444, 396, 300	79, 650, 000	130, 463, 000
1858	268, 616, 000	44, 518, 000	125, 788, 000
1859	295, 710, 832	49, 548, 000	165, 837, 000
1860	255, 147, 000	30, 509, 000	133, 578, 000
1861	249, 308, 000	32, 667, 000	79, 336, 000
1862	299, 365, 000	23, 880, 000	131, 225, 000
1863	393, 074, 882	41, 665, 000	152, 485, 000
1864	480, 165, 000	63, 805, 000	133, 360, 000
1865	658, 214, 476	64, 285, 000	197, 159, 000
1866	729, 469, 911	123, 219, 500	392, 286, 250
1867	873, 522, 956	149, 482, 300	472, 324, 250
1868	999, 229, 866	145, 337, 600	560, 877, 000

The following table shows the shipments from Chicago for the year 1868, the consumption in the city, and allowances for dressed lumber—of which latter large quantities are shipped to various points:

	Lumber.	Lath.	Shingles.
	Feet.	*No.*	*No.*
Shipments	562, 856, 689	88, 622, 450	458, 461, 250
Consumption, and dressed lumber	364, 283, 663	55, 104, 900	109, 534, 750

Although it has been feared that the lumber crop for 1869 would fall below that of 1868, it is now believed the aggregate receipts will equal those of last year, though there will be a deficiency from some of the sources of supply.

The lumber cut in the Saginaw valley, Michigan, last year, aggregated 457,396,225 feet, against 423,953,190 feet in 1867; and of salt made, 555,600,000 pounds, against 474,291,000 pounds in 1867; returning a total value for the year of over $12,000,000.

INTERNATIONAL HORTICULTURAL EXHIBITION.

A communication has been received from Hon. W. H. Seward, Secretary of State, relating to the proposed International Horticultural Exhibition, to be held at Hamburg, in September next, with enclosures from the United States consul at Hamburg, and from the president of the committee managing the preparations for the exhibition. These despatches are as follows:

UNITED STATES CONSULATE, HAMBURG, *January* 20, 1869

SIR: I beg leave to transmit herewith the programme of the "International Horticultural Exhibition," to be held here from the 2d to the 22th of September of this year, together with a copy of a letter of the Syndic of Hamburg enclosing it, and a translation thereof.

About 80 of the wealthiest citizens of Hamburg have guaranteed this exhibition against pecuniary failure. It is hoped and believed that it will be as successful as the International Agricultural Exhibition held here in 1863, which resulted in the opening of a profitable market in North Germany for American agricultural implements. The display of American horticultural implements in this land of gardens would doubtless have a like happy effect.

The people of Hamburg express to me their confident expectation that the United States will take a prominent part in this exhibition, by sending "a shipload of plants, flowers, and implements." I beg leave to submit to the department the propriety of promptly calling the attention of American horticulturists and inventors to it, through the Agricultural Department, or otherwise, and even of bringing the subject to the notice of Congress, in order that, if deemed advisable, timely provision may be made for the appointment of an agent to attend to the interests of our exhibitors here. Great Britain, as I am informed, has already named a commission for a similar purpose.

I am, &c.,

SAM'L T. WILLIAMS,
United States Consul.

Hon. WILLIAM H. SEWARD,
Secretary of State, Washington, D. C.

[Translation.]

HAMBURG, *December* 31, 1868.

SIR: I have the honor to send you enclosed the programme of an "International Horticultural Exhibition," to be held in Hamburg in the first half of September, 1869, with the respectful request that you will communicate it to your government.

Though this is not strictly a government enterprise, the senate and house have manifested their great interest in it by placing for a year at the disposal of the committee, composed of the first merchants of the city, that fine portion of the rampart beautifully situated between the Elbe and the Miller's Gate.

But the furtherance of the exhibition must depend chiefly on the friendly support of foreign countries. The promotion of the enterprise by your government, either by contributions from the public gardens, or by calls addressed to garden establishments and manufacturers of articles connected with horticulture and landscape gardening, will be gratefully acknowledged.

Respectfully requesting your kind intervention herein, I subscribe myself, with high respect, your obedient servant,

C. H. MERCK, M. D.,
President of the Committee for the International Horticultural Exhibition of 1869, *at Hamburg.*

SAMUEL T. WILLIAMS, Esq.,
Consul of the United States of North America.

The following letter has also been received at this office from the consul:

UNITED STATES CONSULATE,
Hamburg, January 26, 1869.

SIR: I beg leave to enclose herewith the programme and plan of the International Horticultural Exhibition, to be held here from the 2d to the 12th of September, 1869. I have already informed the State Department of the exhibition, and suggested the propriety of at once bringing it to the attention of American horticulturists and manufacturers, either through your Department or otherwise, and also of announcing it to Congress, in order that a commissioner may be appointed to attend the exhibition on behalf of the United States. Lest the subject should be overlooked by the State Department I have thought it advisable to communicate also directly with you, in order that you may take such action as you may deem best for the interest of American horticulturists and horticultural implement manufacturers. The International Agricultural Exhibition at Hamburg in 1863, to which our government sent a commissioner, resulted in a large sale of American agricultural implements in Germany. The proposed horticultural exhibition promises to open also a large market for our horticultural implements. The government of Hamburg has placed a large portion of the public park at the disposal of the committee of arrangements for one year, and for two months workmen have been preparing the grounds. The financial success of the enterprise is guaranteed by about 80 of the wealthiest citizens. The Hamburg foreign secretary, or syndic, who is the president of the committee, has, in a special interview, expressed to me his strong desire that the United States above all should take a leading part in the exhibition, and send a commissioner to attend it. Our country would gain both credit and profit by competing with Europe on this interesting occasion.

Very respectfully,

SAMUEL T. WILLIAMS,
United States Consul.

Hon. HORACE CAPRON,
Commissioner of Agriculture, Washington, D. C.

A few hints of the regulations adopted are given for the guidance of horticulturists of this country who may desire to compete in this exhibition.

No communications of applicants will be received after July 31. Forms of application may be obtained from Dr. Gotze, of Hamburg. They must state the amount of space desired. Exhibitors receive certificates of admission.

Open air plants will be received from March till the middle of August; plants for decoration till within three days of the opening; greenhouse plants till within two days of the opening; engines, machines, and implements till within one week of the first day of the exhibition. The prizes will consist of sums of money, and gold, silver, and bronze medals.

Some competitions will be exclusively for amateurs; others for nurserymen. Exhibitors of newly introduced plants are requested to mention the date of introduction into the country. If required, the committee will unpack, exhibit, and return the plants of foreign exhibitors, and expenses will be charged when the plants are returned.

Besides plants of all kinds, garden architecture and implements may be entered for competition, as paths for drives, (3 sq. roods,) gutters, bridges, models of bridges, drawings of bridges, the simplest and best ferry-boat, plant houses, heating apparatus, park gates, summer houses, engines for lifting water, tools of all kinds, garden furniture, fruits in variety, vegetables, cereals, fibres, preserved vegetables, and any vegetable product in economical technology.

THE POTATO DISEASE.

Mr. W. Taylor, of Renfrewshire, England, publishes a tract upon "The Potato Disease, its cause and cure," in which he says:

The primary source of this calamity exists in the mistaken system of over-crowding or close setting the seed, and of forcing the plant by the use of fertile manures, more especially

that of horses, thereby bringing forth an exuberance of foliage, which checks ventilation and excludes the free admission of air, so essential to the formation of a vigorous and healthy plant. This mass of foliage falling (across the furrows) between the drills, creates the most favorable circumstances for the growth of fungi, which fasten on the leaves and stem of the plant, and disseminate their putrid influence. From over-crowding, forcing, heating, cutting, and bleeding, the stem of this esculent root has been enfeebled and deprived of a portion of its woody fibre, so that instead of now having strong and upright stems, they have degenerated to a mere crawler, resembling a garden cress, the wind blowing over them as across a field of slugged (lodged) wheat or hay.

In the years 1809–'10, I was employed to pluck the flowers from the plant, an idea being then prevalent that the weight of the plums would increase the roots. In pursuing this fallacious occupation, I can well remember, when passing up and down between the drills, the stems opened before and closed behind me with the elasticity of willows; but now, you would become entangled among the crawlers.

In those days it was a truly gratifying sight to look upon a field of potatoes in full bloom; like a sea of flowers in all their variegated hues, gracefully waving to and fro in the summer breeze; their own motion causing a fresh supply of air to effectually extinguish the generation of fungi. But, in the present day, there is a very marked absence of this motion; the wind blows over them, not into them, and the disease is generally developed when a few weeks of dry warm weather are followed by heavy showers of rain, succeeded by a sultry, moist atmosphere; fungi spring into existence, rot ensues, and is announced by a stench so well known to potato growers.

What, then, is the cure for this great evil? Potatoes for seed should be planted in a separate plot of ground: select the most sandy part of the field, manure the ground at the end of autumn, ploughing it well, and taking particular care to have it thoroughly grubbed or harrowed, form shallow drills, three feet six inches apart; seed about the size of a duck egg is preferable and should be planted whole in the spring, putting in two sets where at present it is customary to put in four, hoe them up only once (if some are green, all the better for seed,) remove the weeds and grub deep between the drills. Let them be completely ripe before lifting, dig in sunshine, dry them by exposure to the rays of the sun for a day or two, (more if the weather will permit,) spread them on the floor of a dry barn or outhouse, and if any exhibit symptoms of sprouting, turn them; the smallest may be retained for next year's seed, and the largest cut and planted for the general crop.

About fourteen years ago I was so thoroughly convinced that the want of air was, in a great measure, the cause of the disease, that I raised a small mound, three feet high, in the most airy part of my garden, and planted therein a few sets. They were entirely free from the disease, while the others were more or less infected.

Seven years ago I planted several sets in the same manner as dahlias, supporting the foliage; no disease. The following year I repeated the experiment; some of them yielded blossom, and in another year all did well, carrying flowers and a profusion of plums.

If this method of planting and preserving the seed from year to year is adopted, the plant will become erect, strong, and healthy, and the disease will only be a thing of the past. On the other hand, if nothing is done to raise this fallen plant, the first year that comes with the same atmospheric influences for producing fungi as the year 1845 we shall have the disastrous results, but greatly aggravated, as the potato is weaker now than it was then, and less able to resist its deadly influences.

To demonstrate the advantages of the theory he thus advocates, Mr. Taylor recommends agricultural societies to appoint committees, with a concerted plan of operations for practically testing the efficacy of this system.

STOCK DISEASES IN EUROPE.

The Veterinarian (English) for February says that the cattle plague prevails very extensively at the present time in eastern Europe, and that great fears are entertained of its extension from Austria to those States from which England receives a large supply of cattle. Not only are Moldavia, Wallachia, and Transylvania greatly infected, but also Poland, Gallicia, and Hungary. The pleuro-pneumonia is also said to be on the increase, not only in the London dairies but in several parts of the country, and on the continent. Recent information reports its existence in severe form in Spain. The small-pox of sheep is also reported to have recently broken out in the neighborhood of Hamburg, and to be still prevalent in some parts of Holland, particularly near Rotterdam.

AGRICULTURAL STATISTICS OF GREAT BRITAIN FOR 1868.

Population, area, abstract of acreage under crops, &c., and number of live stock in each division of the United Kingdom.

	Years.	England.	Wales.	Scotland.	Total for Great Britain.	Ireland.*	Isle of Man.	Channel islands.		Total for United Kingdom.
								Jersey.	Guernsey, &c.	
Total population	1868	20,451,233	1,198,144	3,188,125	24,837,502	5,532,343	.....	147,811	.....	30,517,656
Total area in statute acres	.....	32,590,397	4,731,486	19,639,377	56,961,260	20,322,641	180,000	28,717	17,967	77,513,585
Abstract of acreage—										
Under all kinds of crops, bare fallow and grass	1867	22,982,356	2,415,139	4,379,552	29,727,047	19,208[illegible]	84,498	20,355	12,958	45,387,066
	1868	23,038,781	2,503,646	4,413,267	29,955,694	19,[illegible]270	88,561	18,716	14,304	45,652,545
Under corn crops	1867	7,399,347	521,404	1,364,029	9,284,780	2,119,[illegible]37	27,039	2,827	2,157	11,431,940
	1868	7,499,218	547,873	1,386,441	9,433,532	2,192,785	27,888	3,453	2,197	11,659,855
Under green crops	1867	2,691,734	138,387	668,042	3,498,163	1,432,252	12,670	5,636	3,075	4,951,796
	1868	2,585,019	128,292	672,555	3,385,866	1,456,307	13,310	5,766	3,808	4,865,057
Under bare fallow	1867	753,210	86,257	83,091	922,558	26,191	1,990	2,550	709	953,998
	1868	799,739	83,720	74,762	958,221	24,047	439	740	829	984,246
Under grass—										
Clover, &c., under rotation	1867	2,478,117	300,756	1,211,101	3,989,974	1,658,451	26,884	3,250	874	5,679,433
	1868	2,370,638	328,232	1,261,138	3,960,008	1,691,797	32,525	5,204	784	5,690,318
Permanent pasture not broken up in rotation, (exclusive of heath or mountain land.)	1867	9,545,675	1,368,328	1,053,285	11,967,672	10,057,072	15,915	6,492	6,143	22,052,510
	1868	9,703,884	1,415,327	1,016,825	12,136,036	10,003,918	14,391	3,553	6,686	22,164,584
Percentage of acreage: †										
Under corn crops	1867	32.3	21.6	31.1	31.2	13.6	32.0	13.9	16.7	25.2
	1868	32.5	21.9	31.4	31.5	14.0	31.5	18.4	15.4	25.5
Under green crops	1867	11.7	5.7	15.3	11.8	9.2	15.0	27.7	23.7	10.9
	1868	11.2	5.1	15.2	11.3	9.4	15.0	30.8	26.6	10.6
Under bare fallow	1867	3.3	3.6	1.9	3.1	.2	2.4	12.5	5.5	2.1
	1868	3.5	3.4	1.7	3.2	.2	.5	4.0	5.8	2.2
Under grass:										
Clover, &c., under rotation	1867	10.8	12.5	27.7	13.4	10.7	31.8	16.0	6.7	12.5
	1868	10.3	13.1	28.6	13.2	10.9	36.7	27.8	5.5	12.5
Permanent pastures, not broken up in rotation, (exclusive of heath or mountain land.)	1867	41.6	56.6	24.0	40.3	64.7	18.8	30.0	47.4	48.6
	1868	42.1	56.5	23.0	40.5	64.2	16.2	19.0	46.7	48.6
Total	.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Abstract of live stock returned.										
Total number of cattle	1867	3,469,026	544,538	979,470	4,993,034	3,702,378	18,672	10,081	7,308	8,731,473
	1868	3,779,691	593,373	1,050,917	5,423,981	3,630,352	19,727	12,225	7,131	9,183,416
Total number of sheep	1867	19,798,237	2,227,161	6,893,603	28,919,101	4,826,015	70,958	529	1,348	33,817,951
	1868	20,930,779	2,668,505	7,112,112	31,711,396	4,822,444	72,216	511	1,355	35,607,813
Total number of pigs	1867	2,548,755	229,917	188,307	2,966,979	1,233,893	7,706	5,804	6,718	4,221,100
	1868	1,981,606	187,319	136,614	2,308,539	862,443	5,271	7,135	5,779	3,189,167

* The detailed returns for Ireland will be found in the annual reports prepared by the registrar general and laid before Parliament.

† Including under flax 253,105 acres in 1867 and 206,446 acres in 1868.

‡ Stated exclusively of the small percentages for flax and hops.

Total acreage and percentage proportions of each kind of corn and green crop in each division of the United Kingdom.

Description of crops.	Years.	England.		Wales.		Scotland.		Total for Great Britain.		Ireland.		Isle of Man.		Channel islands.				Total for United Kingdom.	
														Jersey.		Guernsey, &c			
		Acres.	Per cent.	Acres.	Per cent.	Acres.	Per cent.	Acres.	Per cent.	Acres.	Per cent.	Acres.	Per cent.	Acres.	Per ct.	Acres.	Per ct.	Acres.	Per cent.
CORN CROPS.																			
Wheat	1867	3,140,025	42.4	116,733	22.4	111,118	8.2	3,367,876	36.3	261,608	12.4	7,821	28.9	2,352	83.2	968	44.9	3,640,925	34.9
	1868	3,396,890	45.3	130,552	23.8	124,683	9.1	3,652,125	38.7	286,790	13.1	8,347	29.9	2,743	79.4	1,013	46.1	3,951,018	33.9
Barley or bere	1867	1,892,338	25.6	148,340	28.4	218,486	16.0	2,259,164	24.3	172,637	8.1	7,386	27.3	137	4.8	623	28.9	2,439,247	21.3
	1868	1,780,201	23.7	151,608	27.7	219,515	15.8	2,151,324	22.8	188,252	8.5	7,563	27.1	278	8.1	651	29.6	2,348,068	20.1
Oats	1867	1,506,361	20.4	247,006	47.4	997,120	73.1	2,750,487	29.6	1,659,412	78.5	11,347	42.0	303	10.7	449	20.8	4,421,998	38.7
	1868	1,488,470	19.9	257,153	46.9	1,011,430	72.9	2,757,053	29.2	1,699,919	77.5	11,627	41.7	378	10.9	419	18.7	4,469,387	38.3
Rye	1867	42,075	.6	3,124	.6	7,066	.5	52,265	.6	7,673	.4	29	.1	21		30		6,518	.5
	1868	38,397	.5	2,110	.4	6,389	.4	46,896	.5	7,854	.4	12	.1	24		41		5,827	.5
Beans	1867	505,539	6.8	3,435	.7	27,324	2.0	536,298	5.8	11,152	.5	255	.9	12	1.3	37	5.4	547,755	4.8
	1868	503,700	6.7	3,777	.7	22,423	1.5	529,900	5.6	8,813	.4	132	.6	15	1.6	53	5.6	538,943	4.6
Peas	1867	312,409	4.2	2,766	.5	2,915	.2	318,090	3.4	2,354	.1	201	.8	2		50		321,697	2.8
	1868	291,560	3.9	2,673	.5	2,001	.3	296,234	3.2	1,157	.1	177	.6	15		29		297,612	2.6
Total of corn crops	1867	7,399,347	100.0	521,404	100.0	1,364,029	100.0	9,284,780	100.0	2,115,137	100.0	27,039	100.0	2,827	100.0	2,357	100.0	11,431,940	100.0
	1868	7,499,218	100.0	547,873	100.0	1,386,441	100.0	9,433,532	100.0	2,192,785	100.0	27,888	100.0	3,453	100.0	2,197	100.0	11,659,855	100.0
GREEN CROPS.																			
Potatoes	1867	289,611	10.8	45,077	32.6	157,529	23.6	492,217	14.1	1,001,545	70.0	4,611	31.6	2,062	36.6	789	25.7	1,500,624	30.3
	868	327,173	12.7	47,431	37.0	166,939	24.8	541,543	16.0	1,034,853	71.1	4,459	35.5	2,280	39.5	1,078	28.3	1,584,213	32.6
Turnips and Swedes	1867	1,621,123	60.2	67,927	49.1	484,800	72.6	2,173,850	62.2	335,711	23.4	8,170	64.5	1,547	97.4	142	4.6	2,519,420	50.9
	1868	1,605,980	62.1	70,350	54.8	488,812	72.7	2,165,142	63.9	320,066	21.9	8,419	63.3	1,766	36.3	143	3.7	2,495,536	51.3
Mangolds	1867	253,937	9.4	3,345	2.4	844	.1	258,126	7.4	18,805	1.3	47	.4	730	13.0	244	7.9	277,952	5.6
	1868	244,363	9.4	3,955	3.1	723	.1	249,041	7.4	19,067	1.3	44	.3	443	7.7	185	4.9	268,780	5.5
Carrots	1867	14,722	.5	346	.2	855	.1	15,923	.4	3,360	.2	233	1.9	913	16.2	221	7.2	20,650	.4
	1868	11,959	.5	368	.3	938	.1	13,265	.4	3,789	.3	244	1.8	316	5.5	201	5.3	17,815	.4
Cabbages, kohl-rabi, and rape.	1867	128,863	4.8	679	.5	4,150	.6	133,692	3.8	35,703	2.5	47	.1	159	2.8	152	4.9	169,723	3.4
	1868	111,156	4.3	769	.6	3,158	.5	115,083	3.4	43,268	2.9	45	.3	45	.8	84	2.2	158,525	3.2
Vetches, lucerne, and any other green crop, except clover or grass.	1867	383,478	14.3	21,013	15.2	19,864	3.0	424,355	12.1	37,128	2.6	192	1.5	225	4.0	1,527	49.7	463,427	9.4
	1868	384,388	11.0	5,419	4.2	11,985	1.8	301,792	8.9	36,264	2.5	99	.8	916	15.9	2,117	55.6	341,188	7.0
Total green crop	1867	2,691,734	100.0	138,387	100.0	668,042	100.0	3,498,163	100.0	1,432,252	100.0	12,670	100.0	5,636	100.0	3,075	100.0	4,951,796	100.0
	1868	2,585,019	100.0	128,292	100.0	672,555	100.0	3,385,866	100.0	1,456,397	100.0	13,310	100.0	5,766	100.0	3,808	100.0	4,865,057	100.0

METEOROLOGY.

COMPILED IN THE DEPARTMENT OF AGRICULTURE FROM REPORTS BY OBSERVERS FOR THE SMITHSONIAN INSTITUTION.

JANUARY, 1869.

Table showing the highest and lowest range of the thermometer, (with dates prefixed,) the mean temperature, and amount of rain and melted snow, (in inches and tenths,) for January, 1869, at the stations named. Daily observations at 7 a. m., and at 2 and 9 p. m., by the observers named.

NOTE.—Observers will please be careful, in adding the columns, to deduct what is below from what is above zero, and to divide (for the mean) by the number of observations included in the sum.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MAINE.								
				°		°	°	*In.*
Houlton	Aroostook	Charles H. Fernald	8	41	19, 20	—26	14.6	3.60
Steuben	Washington	J. D. Parker	8	47	22	— 6	21.7	2.40
Williamsburg	Piscataquis	Edwin Pitman	8	39	18, 23	—12	16.3	2.65
West Waterville	Kennebec	B. F. Wilbur	7	45	19	— 8	21.9	2.15
Gardiner	do	R. H. Gardiner	8	46	19	— 2	22.7	1.96
Standish	Cumberland	John P. Moulton	5	42	19	— 3	23.4	2.48
Norway	Oxford	Howard D. Smith	8	46	19	—12	20.2	.....
Cornish	York	Silas West	8	49	19, 23	— 3	23.5	2.15
Cornishville	do	G. W. Guptill	8	45	22	— 2	23.8	2.73
Averages							20.9	2.52
NEW HAMPSHIRE.								
Stratford	Coos	Branch Brown	7, 8, 9	38	18	—18	18.9	2.98
Shelburne	do	F. Odell	8	46	19	—30	20.7	.....
North Barnstead	do	Charles H. Pitman	7, 30	44	22	0	26.6	2.01
Goffstown Centre	Hillsboro'	Alfred Colby	8	49	20	— 1	23.5	2.70
Averages							22.4	2.56
VERMONT.								
Lunenb' g	Essex	H. A. Cutting	7, 29	38	19	—20	20.2	4.30
Barnet	Caledonia	B. F. Eaton, M. D.	6	46	22, 23, 26	—25	17.9	2.70
North Craftsbury	Orleans	Rev. E. P. Wild	29	40	22	—16	18.1	3.05
Randolph	Orange	Chas. S. Paine	8	46	22	— "	21.3	3.23
Woodstock	Windsor	Doton & Miller	8	44	22	—20	19.1	.....
Near St. Albans	Franklin	A. H. Gilmour	9	45	22	—22	19.8	.....
West Charlotte	Chittenden	Miss M. E. Wing	8, 30	45	22	— 6	23.5	0.91
Middlebury	Addison	H. A. Sheldon	8, 9	42	18	—11	22.7	3.37
Brandon	Rutland	Harmon Buckland	7	50	18, 22	— 8	24.4	2.80
Averages							20.8	2.91
MASSACHUSETTS.								
Kingston	Plymouth	G. S. Newcomb	8	55	22	5	31.7	3.45
Topsfield	Essex	S. A. Merriam	8	51	22	0	27.4	1.70
Lawrence	do	John Fulton	8,	48	22	6	27.9	2.81

Table showing the range of the thermometer, &c., for January—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MASS.—Continued.				°		°	°	*In.*
Newbury	Essex	John H. Caldwell	9	52	22, 23	4	28.9	.....
Milton	Norfolk	Rev. A. K. Teele	8	57	22	9	31.6	2.24
Cambridge	Middlesex	Rev. J. B. Perry	29	56	23	6	30.9	.....
North Billerica	....do.	Rev. Elias Nason	8	52	22	3	30.3	.....
West Newton	....do.	John H. Bixby	8	56	22	4	30.1	.....
New Bedford	Bristol	Samuel Rodman	8	49	22, 23	9	32.5	3.84
Worcester	Worcester	Jos. Draper, M. D.	8	53	22	7	28.9	2.82
Mendon	....do	Jno. G. Metcalf, M. D	8	54	22	4	28.0	.....
Lunenburg	....do	G. A. Cunningham	8	53	22	1	27.8	1.90
Amherst	Hampshire	Prof. E. S. Snell	8	49	23	3	28.0	3.47
Richmond	Berkshire	Wm. Bacon	8	54	23	2	26.6	1.80
Williams College	....do	Prof. A. Hopkins	8	48	23	5	26.9	3.52
Hinsdale	....do	Rev. E. Dewhurst	9	47	22, 23, 25, 26	0	24.7	4.20
Averages							28.9	2.89
RHODE ISLAND.								
Newport	Newport	Wm. H. Crandall	8	52	23	10	31.1	2.70
CONNECTICUT.								
Pomfret	Windham	Rev. D. Hunt	8	51	22, 23	5	29.2	1.75
Columbia	Tolland	Wm. H. Yeomans	9	56	23	6	31.7	.....
Middletown	Middlesex	Prof. John Johnson	8	56	22	5	31.0	2.93
Waterbury	New Haven	Rev. R. G. Williams	8	52	23	4	30.0	2.71
Colebrook	Litchfield	Charlotte Rockwell	8	53	23	— 1	26.2	.....
Brookfield	Fairfield	Rev. S. W. Roe	30	52	26	5	30.7	5.03
Averages							29.8	3.12
NEW YORK.								
Moriches	Suffolk	E. A. Smith & daugh's	29	60	26	11	36.8	3.73
South Hartford	Washington	G. M. Ingalsbe	8	50	26	— 7	25.7	3.40
Garrison's	Putnam	Thomas B. Arden	30	52	22, 23	5	31.0	3.73
Throg's Neck	Westchester	Miss E. Morris	8, 30	54	22, 26	13	32.7	.....
Deaf and Dumb Inst.	New York	Prof. O. W. Morris	8, 30	51	22, 26	12	32.7	4.18
Columbia College	....do	Prof. Chas. A. Joy	8	51	26	13	31.4	2.42
Flatbush	Kings	Rev. Eli T. Mack	14	59	26	13	34.8	1.78
Nyack	Queens	C. de la Verny	30	70	23	15	35.6	.....
Newburgh	Orange	Jas. H. Gardiner	30	55	22	7	31.4	3.53
Minaville	Montgomery	J. W. Bussing	8	42	25	— 1	22.5	2.75
Sloansville	Schoharie	G. W. Potter	9	52	22	— 3	27.2	4.29
Gouverneur	St. Lawrence	C. H. Russell	4	48	22, 25	—10	22.8	2.35
North Hammond	....do	C. A. Wooster	6, 7	48	25	—10	23.0	2.40
Houseville	Lewis	Walter D. Yale	7	46	25	—13	24.6	3.99
South Trenton	Oneida	Storrs Barrows	29	48	22	— 3	23.0	2.87
Cazenovia	Madison	Prof. Wm. Soule	29	48	22	1	27.3	.....
Oneida	....do	S. Spooner, M. D.	4	50	22	4	27.0	3.33
Depauville	Jefferson	Henry Haas	4	48	25	0	25.5	1.86
Oswego	Oswego	Wm. S. Malcolm	7, 9	45	22	6	29.7	4.30
Palermo	....do	E. B. Bartlett	7	44	22	0	24.5	2.58
North Volney	....do	J. M. Patrick	7	49	22	3	27.1	.....
Ludlowville	Tompkins	C. P. Murphy	4, 7	50	22	— 2	27.7	.....
Nichols	Tioga	Robert Howell	7, 30	50	22	0	28.9	.....

Table showing the range of the thermometer, &c., for January—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
NEW YORK—Con'd.				°		°	°	*In.*
Newark Valley	Tioga	Rev. Sam'l Johnson	7, 8, 9	46	22, 23	—10	25. 5	3. 68
Roche[illegible]	Monroe	H. W. Mathews	4	52	22	5	30. 1	1. 35
Little[illegible]esee	Allegany	Daniel Edwards	7	50	22	— 6	.....	2. 65
Suspension Bridge	Niagara	W. Martin Jones	7	51	25	8	30. 1	3. 45
Buffalo	Erie	Wm. Ives	4	50	25	11	30. 8	1. 40
Averages							28. 5	3. 03
NEW JERSEY.								
Paterson	Passaic	Wm. Brooks	9, 30	51	23	3	31. 2	2. 83
Newark	Essex	W. A. Whitehead	30	52	23	11	32. 7	3. 42
New Brunswick	Middlesex	J. E. Husbronck	9	52	22	10	31. 0	.....
Trenton	Mercer	E. R. Cook	9, 30	54	23	13	35. 3	2. 12
Moorestown	Burlington	Thos. J. Beans	30	60	23	9	34. 0	3. 82
Newton	Sussex	Thos. Ryerson, M.D.	2	51	23	2	28. 9	4. 05
Dover	Morris	Howard Shriver	8	58	23, 26	12	33. 4	4. 44
New Germantown	Hunterdon	Arthur B. Noll	30	50	22, 23	9	32. 5	3. 34
Haddonfield	Camden	Samuel Wood	9	59	23, 26	17	34. 0	3. 67
Newfield	Gloucester	E. D. Couch	9	61	23	10	36. 6	.....
Greenwich	Cumberland	R. C. Sheppard	30	61	26	18	36. 7	3. 65
Vineland	....do	Jno. Ingram, M. D.	8	66	23	10	35. 8	4. 15
Averages							33. 5	3. 55
PENNSYLVANIA.								
Nyces	Pike	John Grathwohl	7	61	23, 25	— 8	26. 8	1. 50
Failsington	Bucks	Ebenr Hance	30	56	23	14	34. 0	4. 00
Philadelphia	Philadelphia	Prof. J. A. Kirkpatrick	9	58	26	19	36. 7	3. 23
Germantown	... do	Thomas Meehan	30	60	23	13	34. 3	.....
Horsham	Montgomery	Miss Anna Spencer	9, 30	55	23	11	33. 4	2. 63
Plymouth Meeting	....do	M. H. Corson	30	58	26	17	34. 5	3. 68
Dyberry	Wayne	Theodore Day	7, 8	54	23	—11	26. 4	.....
Whitehall	Lehigh	Edward Kohler	9, 29, 30	49	23, 26	12	32. 2	.....
Factoryville	Wyoming	Rodman Sisson	9	50	27	2	28. 6	5. 80
Reading	Berks	J. Heyl Raser	9	56	26	17	35. 1	.....
Parkesville	Chester	Dr. F. Darlington	7	55	26	17	33. 7	3. 10
West Chester	....do	Geo. Martin, M. D.	7	62	26	13	35. 0	4. 09
Phenixville	....do	I. Z. Coffman, M. D.	9	58	26	16	34. 2	4. 75
Silver Spring	Lancaster	H. G. Bruckhart	23	54	26	15	34. 6	.....
Ephrata	....do	W. H. Speta	30	60	26	14	34. 8	3. 55
Mount Joy	....do	J. B. Hoffer	30	60	26	19	.....	.....
Harrisburg	Dauphin	John Heisely, M. D.	30	50	23	18	33. 3	4. 32
Carlisle	Cumberland	Wm. H. Cook, M. D.	23	51	23	13	33. 3	3. 95
Fountain Dale	Adams	S. C. Walker	7	54	23	19	34. 3	2. 66
Tioga	Tioga	E. T. Bentley	8, 9	46	23	—12	23. 3	3. 15
Lewisburg	Union	Prof. C. S. James	24	45	23	2	25. 3	2. 10
Ickesburg	Perry	Wm. L. Baker	7	53	23	6	31. 7	4. 36
Grampian Hills	Clearfield	Elisha Fenton	8, 9	46	27	— 2	26. 5	5. 12
Johnstown	Cambria	David Peelor	7	50	27	14	29. 7	.....
Franklin	Venango	Rev. M. A. Tolman	7	54	23	6	30. 3	3. 92
Connellsville	Fayette	John Taylor	4	64	27	13	35. 1	.....
New Castle	Lawrence	E. M. McConnell	2	53	26	9	33. 6	.....
Beaver	Beaver	Rev. R. T. Taylor	4	59	26	11	35. 0	3. 60
Canonsburg	Washington	Rev. W. Smith, D. D.	4	63	23	13	33. 1	2. 64
Averages							32. 4	3. 70

Table showing the range of the thermometer, &c., for January—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MARYLAND.				°		°	°	*In.*
Woodlawn	Cecil	Jas. O. McCormick	30	62	26	14	35.6	4.26
Annapolis	Anne Arundel	Wm. R. Goodman	29	64	26	21	40.8	4.70
St. Inigoes	St. Mary's	Rev. J. Stephenson	29	62	26	25	39.7	3.92
Emmittsburg	Frederick	Eli Smith	7	68	26	14	34.5	.....
Mt. St. Mary's Coll	....do	Prof. C. H. Jourdan	30	54	26	17	34.7	4.51
Averages							37.1	4.35
DIST. OF COLUMBIA.								
Washington	Washington	Smithsonian Instit'n.	28, 29	54	2	28	39.3	4.10
VIRGINIA.								
Johnsontown	Northampton	C. R. Moore	30	64	23	25	42.1	4.75
Hampton	Elizabeth City	James M. Sherman	9, 30	64	19, 21, 26	30	42.9	2.90
Zuni Station	Isle of Wight	Robert Binford	30	64	24	28	43.7	3.11
Surry C. H.	Surry	B. W. Jones	29	72	13	25	46.4	.....
Ashland	Hanover	Prof. R. M. Smith	30	65	26	24	43.9	5.35
Comorn	King George	E. Tayloe	29	63	26	24	41.0	3.30
Mt. Solon	Augusta	Dr. Jas. T. Clarke	7	66	13, 23	22	43.6	4.25
Staunton	....do	J. C. Covell	8	61	13	23	41.0	2.87
Lynchburg	Bedford	C. I. Merriwether	7, 28	59	13	32	45.1	.....
Snowville	Pulaski	J. W. Stalnaker	0	63	13	17	39.1	10.20
Wytheville	Wythe	Rev. Jas. A. Brown	4	59	13	15	38.8	2.20
Averages							42.5	4.32
WEST VIRGINIA.								
White Day	Monongalia	W. H. Sharp, M. D	4	65	26	26	38.7	.....
Weston	Lewis	B. Owen	7, 9	60	23	20	37.7	.....
Cabell C. H.	Cabell	C. L. Roffo	8	62	26	18	42.6	1.20
Averages							39.7	1.20
NORTH CAROLINA.								
Kenansville	Duplin	Rev. Jas. M. Sprunt	30	74	13, 14	32	51.6	6.51
Goldsboro'	Wayne	E. W. Adams, A. M.	30	73	14	29	49.5	3.60
Raleigh	Wake	Rev. F. P. Brewer	29	71	13	29	47.3	3.50
Oxford	Granville	W. R. Hicks, M. D.	29	66	26	25	42.0	4.85
Albemarle	Stanley	F. J. Kron	9, 29	70	13	18	43.9	5.03
Statesville	Iredell	Thos. A. Alison	28	58	13	20	39.7	3.50
Asheville	Buncombe	E. J. Aston	7, 15, 28	60	13	20	42.5	1.80
Do	....do	J. T. E. Hardy, M. D.	15	62	13	20	43.0	.....
Averages							44.9	4.11
SOUTH CAROLINA.								
Aiken	Barnwell	John H. Cornish	29	68	19	32	50.3	5.41
Camden	Kershaw	Colin Macrae	15, 29	68	13	22	47.7	2.82
Averages							49.0	4.12
GEORGIA.								
Atlanta	Fulton	F. Deckner & Son	3, 8, 15	63	13	25	46.1	5.86
Macon	Bibb	Prof. J. F. Adams	8	69	13	38	53.5	5.70
Do	....do	Miss S. J. Whitney	8	66	13	30	50.1	4.78
Augusta	Richmond	W. H. Doughty, M. D	22	81	3, 4	31	.....	8.17
Averages							49.9	6.13

Table showing the range of the thermometer, &c., for January—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
ALABAMA.								
				°		°	°	In.
Carlowville	Dallas	H. L. Alison, M. D	29	72	12	30	50.2	8.30
Moulton	Lawrence	Thos. M. Peters, A. M.	29	61	12	23	45.9	4.87
Greene Springs	Hale	H. Tutwiler, LL. D.	24	69	13	24	47.7	5.96
Havana	do.	S. K. Jennings, M. D.	20	68	13	27	48.7	5.90
Averages							48.1	6.26
FLORIDA.								
Jacksonville	Duval	A. S. Baldwin	4, 29	79	13	36	57.1	4.05
Manatie	Manatie	B. A. Coachman	1, 3	84	13	44	67.0	4.38
Port Orange	Volusia	Mrs. J. M. Hawks	15, 30	78	13	47	59.4	.....
Lake City	Columbia	E. R. Ives	2, 3	78	13	32	58.7	9.38
Ocala	Marion	Edward Barker	15	78	13	38	62.9	.....
Averages							61.0	5.94
TEXAS.								
Galveston	Galveston	A. H. Beazley, M. D.	8	76	17	31	.....	10.00
Houston	Harris	Miss E. Baxter	1	80	11	32	54.2	.....
Columbia	Brazoria	J. B. Bostwick	3, 4	77	11	28	55.6	4.54
Lavacca	Calhoun	L. D. Heaton	27, 28	78	18	40	.....	.....
Waco	McLellan	Edwd. Merrill, M. D.	3	70	11	28	51.4	5.10
Yorktown	De Witt	A. C. White, M. D.	7, 28	76	11	36	55.9	4.05
Austin	Travis	J. Van Nostrand	3	73	11	27	51.0	5.06
Averages							53.6	5.75
LOUISIANA.								
Shreveport	Bossiere	J. H. Carter	6	70	12	29	49.3	.....
New Orleans	New Orleans	Robt. W. Foster	8	72	11	41	.....	.....
MISSISSIPPI.								
Grenada	Yalabusha	Albert Moore	4, 28	68	12	24	49.6	3.40
Brookhaven	Lawrence	T. J. R. Keenan	29	67	12	28	50.5	7.00
Natchez	Adams	Robt. McCary	8	67	12	25	46.5	5.97
Marian C. H.	Lauderdale	Thos. W. Florer	2	68	12	24	46.0	9.30
Averages							48.2	6.42
TENNESSEE.								
Elizabethton	Carter	Charles H. Lewis	29	66	13	22	42.3	4.80
Tusculum College	Green	S. S. and Rev. W. S. Doak.	29	64	13	22	40.9	.....
Lookout Mountain	Hamilton	Rev. C. F. P. Bancroft	8	68	12	29	45.9	.....
Clarksville	Montgomery	Prof. W. M. Stewart	29	63	12	13	42.0	2.88
Memphis	Shelby	Ed. Goldsmith	3, 28	65	12	24	44.4	2.24
Averages							43.1	3.31
KENTUCKY.								
Pine Grove	Clark	Sam'l Martin, M. D.	3, 4, 29	60	26	20	39.2	2.67
Lexington	Fayette	S. R. Williams	4, 29	61	13, 26	20	38.8	2.85
Louisville	Jefferson	Mrs. L. Young	7, 28, 29	62	12	6	29.1	2.80
Clinton	Hickman	Rev. T. H. Cleland	3	63	12	20	40.3	1.58
Averages							39.4	2.48

Table showing the range of the thermometer, &c., for January—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
OHIO.				°		°	°	*In.*
New Lisbon	Columbiana	J. F. Benner	4	60	23	8	34.1	3.44
Steubenville	Jefferson	Jos. B. Doyle	9	58	23, 27	16	36.0	3.38
Martin's Ferry	Belmont	Martin B. Shreeve	4, 7	60	27	11	35.4	2.25
Painesville	Lake	E. J. Ferris	4	54	25, 26	18	32.8	1.13
Gilmore	Tuscarawas	Samuel M. Moore	4, 7, 8	60	26	11	33.6	2.70
Milnersville	Guernsey	Rev. D. Thompson	4	60	23, 26	7	32.8	5.05
Cleveland	Cuyahoga	Mr. & Mrs. G. A. Hyde	4	59	26	17	33.2	1.47
Wooster	Wayne	Martin Winger	4	60	12, 23, 25, 26, 27	16	34.3	2.30
Gallipolis	Gallia	A. P. Rodgers	29	64	13, 26	20	38.9	2.96
Kelley's Island	Erie	Geo. C. Huntington	4	50	25	17	33.2	0.71
Sandusky	do	Thomas Neill	7	57	25	14	34.3	1.22
North Fairfield	Huron	O. Burras	4	60	25	14	34.2	1.28
Westerville	Franklin	Prof. Jno. Haywood	4	57	26	15	34.2	1.80
Marion	Marion	H. A. True, M. D.	4	56	25, 26	14	32.8	1.50
Hillsboro'	Highland	J. McD. Mathews	4	56	26	18	34.7	1.86
Toledo	Lucas	John Trembly, M.D.	7	55	25	14	33.0	1.69
Bowling Green	Wood	John Clarke	7	59	25	12	35.1	1.75
Springfield	Clark	Dr. C. H. Smith, A.M	4, 29	55	13	22	38.2	3.84
Urbana University	Champaign	M. G. Williams	4, 7	58	23	18	33.4	1.50
Bethel	Clermont	Geo. W. Crane	7	61	26	16	36.7	2.25
Jacksonburg	Butler	I. B. Owsley, M. D.	4	60	26	17	35.0	2.04
Mt. Auburn Institu'n	Hamilton	Prof. S. A. Norton	4	66	26	21	39.7	1.68
Cincinnati	do	R. C. Phillips	7	64	13, 26	26	40.6	2.37
Cleves	do	R. B. Warder	4, 29	60	26	18	36.3	1.88
College Hill	do	John W. Hammitt	4	60	26	18	35.9	1.73
Averages							35.1	2.15
MICHIGAN.								
Monroe City	Monroe	Miss H. I. Whelpley	4	54	25	12	33.3	0.40
Litchfield	Hillsdale	R. Bullard	7	51	25	9	28.6	1.25
Coldwater	Branch	N. L. Southworth	7	50	25	10	29.2	3.13
Grand Rapids	Kent	E. S. Holmes, D. D. S	7	47	25	8	29.8	.....
Northport	Leelenaw	Rev. Geo. N. Smith	6, 13	43	25	5	28.1	2.30
Homestead	Benzie	George E. Steele	7, 14	43	12, 26	6	28.1	.....
Holland	Ottawa	L. H. Streng	7	46	25	11	32.8	2.07
Otsego	Allegan	Milton Chase, M.D.	14, 15	50	15	18	33.8	.....
Copper Falls	Keweenaw	Dr. S. H. Whittlesey	6	35	24	— 3	20.1	3.40
Penn Mine	do	Richard H. Griffith	6	44	24	— 2	.....	.....
Ontonagon	Ontonagon	Edwin Ellis, M. D	6, 7	38	11, 24, 25	8	26.0	.....
Averages							29.0	2.09
INDIANA.								
Aurora	Dearborn	Geo. Sutton, M. D.	4	60	26	15	33.9	1.08
Vevay	Switzerland	Chas. G. Boerner	29	61	26	15	31.1	1.87
Muncie	Delaware	G. W. H. Kemper, M.D	7	58	16	10	33.5	2.05
Spiceland	Henry	Wm. Dawson	7	57	16	11	33.7	1.73
Columbia City	Whitley	Dr. F. and Miss L. McCoy.	7	51	26	10	31.5	1.20
Jalapa	Grant	Albert C. Irwin	7	59	26	18	34.9	3.56
Knightstown	Rush	D. Deem	4, 7	56	16	14	33.6	1.98
State University	Monroe	Prof. C. M. Dodd	7	59	10	22	36.1	2.51
Rensselaer	Jasper	Dr. J. H. Laughridge	29	53	31	10	31.2	2.20

Table showing the range of the thermometer, &c., for January—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
INDIANA—Cont'd.				°		°	°	*In.*
Merom	Sullivan	Thos. Holmes	7	58	12, 31	21	36.8	1.10
New Harmony	Posey	John Chappellsmith	7, 28	59	31	23	39.8	1.30
Averages							34.2	1.87
ILLINOIS.								
Chicago	Cook	J. G. Langguth, jr	7	51	26	16	33.7	1.97
Near Chicago	do	Samuel Brookes	7	46	26	10	30.4	.....
Evanston	do	Prof. Oliver Marcy	7	46	25	12	32.7	0.93
Marengo	McHenry	O. P. Rogers	7	47	25	4	28.9	1.65
King's Mills	Kane	Mr. and Mrs. A. Spaulding	7	43	12	4	27.2	2.40
Belvidere	Boone	G. B. Moss	7	48	25	3	26.3	2.11
Winnebago	Winnebago	J. W. & Miss Tolman	28	45	25	1	25.8	1.39
Rochelle	Ogle	Daniel Carey	7	47	10, 26	6	30.7	.....
Wyanet	Bureau	E. S. & Miss Phelps	28	55	10, 26	12	31.6	1.96
Tiskilwa	do	Verry Aldrich	29	51	26	10	31.3	.....
Hennepin	Putnam	Smiley Shepherd	29	52	26	10	32.0	.....
Elmira	Stark	O. A. Blanchard	7, 28	48	26	7	27.9	3.17
Peoria	Peoria	Frederick Brendel	7	55	26	18	34.0	0.99
Springfield	Sangamon	G. M. Brinkerhoff	6, 7	50	10, 25	18	28.5	.....
Loami	do	Timothy Dudley	7	59	16	17	33.6	1.25
Dubois	Washington	Wm. C. Spencer	7	62	12	17	37.7	1.47
South Pass	Union	H. C. Freeman	28	60	12, 19	20	39.6	.....
Lombard University	Knox	Prof. W. Livingston	28, 29	54	10	9	31.0	1.62
Manchester	Scott	Dr. J. & C. W. Grant	7	59	19	17	34.5	3.67
Mount Sterling	Brown	Rev. A. Duncan	3	60	10	16	36.0	.....
Andalusia	Rock Island	F. H. Bowman, M. D	15	57	10	9	31.3	.....
Augusta	Hancock	S. B. Mead, M. D	7	53	10	12	33.2	2.10
Warsaw	do	B. Whitaker	7	65	10	10	32.1	2.22
Averages							31.8	1.89
WISCONSIN.								
Manitowoc	Manitowoc	Jacob Lüps	6	46	26	4	27.4	2.76
Plymouth	Sheboygan	G. Moeller	7, 28	41	11	— 6	24.0	2.00
Hingham	do	Jno. De Lyser	14	48	26	0	26.6	.....
Milwaukee	Milwaukee	I. A. Lapham, LL.D	7	47	25	5	29.1	2.51
Lawrence University	Outagamie	J. C. Foye	14	47	11	2	26.5	2.68
Waupacca	Waupacca	H. C. Mead	21	46	11	—13	25.5	.....
Embarrass	do	E. Everett Breed	23	44	11	— 8	21.3	1.88
Rocky Run	Columbia	W. W. Curtis	6	45	11	—15	23.1	2.75
Madison	Dane	W. W. Daniels	6	42	11	—11	23.3	2.69
Edgerton	Rock	Henry J. Shints	7, 22, 28	50	11	— 6	25.3	1.80
Baraboo	Sauk	M. C. Waite	19	36	10	—10	18.8	4.75
New Lisbon	Juneau	J. L. Dungan	6	50	11	—18	23.3	.....
Bayfield	La Pointe	Andrew Tate	6, 23	42	26	— 8	21.6	.....
Averages							24.3	2.58
MINNESOTA.								
Afton	Washington	Dr. and Mrs. B. F. Babcock.	23	39	26	—13	18.6	0.80
St. Paul	Ramsey	Rev. A. B. Paterson	3, 23	36	25	— 7	19.4	0.42
Minneapolis	Hennepin	Wm. Cheney	23	39	25	—13	18.0	0.06
Sibley	Sibley	C. W. & C. E. Woodbury.	3, 27	39	25	—19	15.4	0.30
Koniska	McLeod	Thos. M. Young	2	36	9	—14	16.2	.....

Table showing the range of the thermometer, &c., for January—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MINNESOTA—Con'd.								
				°		°	°	*In.*
New Ulm	Brown	Charles Roos	6	38	25	—15	17.3	0.38
Madelia	Watonwan	W. W. Murphy	6,19	38	25	—1.	15.6	0.50
Averages							17.2	0.41
IOWA.								
Clinton	Clinton	Dr. J. P. Farnsworth	3,25	50	27	10	30.2	1.50
Davenport	Scott	D. S. Sheldon	28	49	10	5	28.1	3.74
Dubuque	Dubuque	Asa Horr, M. D	6,7	44	11	—15	23.9	3.45
Monticello	Jones	M. M. Moulton	6	45	11	—20	22.3	1.71
Bowen's Prairie	do	Samuel Woodworth	22	45	11	—24	22.1	1.50
Muscatine	Muscatine	J. P. Walton	28	54	10	0	26.3	1.52
Fort Madison	Lee	Dan'l McCready	7,29	52	10	6	31.3	1.21
Guttenberg	Clayton	Jas. P. Dickerson	6	46	11	—20	20.3	
Mount Vernon	Linn	Prof. A Collins	3,6	44	11	— 8	24.4	
State University	Johnson	Prof. T. S. Parvin	23	48	11	—14	26.0	4.81
Independence	Buchanan	Geo. Warne, M. D	3,27	39	11	—21	19.2	2.50
Near Independence	do	Mrs. D. B. Wheaton	3	42	10	—21	19.0	1.00
Waterloo	Black Hawk	T. Steed	6	40	11	—18	19.2	
Marble Rock	Floyd	H. Wadey	3	40	25	— 6	20.2	
Iowa Falls	Hardin	N. Townsend	3	40	10	— 6	22.8	2.07
Algona	Kossuth	I. H. Warren	21	40	25	—10	17.2	1.23
Near Algona	do	Ph. Dorweiler	3,27	38	25	—11	15.8	1.10
Fort Dodge	Webster	C. N. Jorgensen	6	36	25	—14	18.1	1.75
Boonsboro'	Boone	E. Babcock	3	40	25	—10	21.3	1.38
Rolfe	Pocahontas	Oscar I. Strong	27	42	25	—18	15.6	0.70
Fontanelle	Adair	A. F. Bryant	6	42	25	—10	22.5	0.85
Logan	Harrison	Jacob T. Stern	21,22	48	25	— 6	23.3	0.90
Woodbine	do	David R. Witter	6	42	25	—10	22.6	
Averages							22.3	1.93
MISSOURI.								
St. Louis University	St. Louis	Rev. J. Stractmans	7	62	12,31	27	40.6	1.73
Allenton	do	A. Fendler, M. D	6	67	31	14	36.6	1.94
Hematite	Jefferson	John M. Smith	6	68	12,31	17	39.8	1.40
Rolla	Phelps	Homer Ruggles	27	65	12	15	37.3	2.06
Jefferson City	Cole	Nicolas de Wyl	7	64	11	17	38.0	
Hermitage	Hickory	Miss Belle Moore	3	62	10	15	34.7	2.68
Bolivar	Polk	James A. Race	3	63	11	15	38.6	4.50
Warrensburg	Johnson	J. E. Pollock	28	58	10	10	33.4	3.53
Harrisonville	Cass	John Christian	4,28	56	10	12	33.1	4.08
St. Joseph	Buchanan	Rev. Henry Bullard	6,28	54	10	10	34.1	1.28
Oregon	Holt	William Kaucher	6	56	10	4	31.0	2.06
Averages							36.1	2.53
KANSAS.								
Atchison	Atchison	Dr. H. B. & Miss Horn	6	54	10	2	30.6	2.70
Leavenworth	Leavenworth	J. Stayman, M. D	28	57	10	5	30.1	3.45
Olatha	Johnson	W. Beckwith	28	56	10	6	31.3	3.90
Baxter Springs	Cherokee	Ingraham & Hyland	3	67	11	18	40.0	5.75
State University	Douglas	Prof. F. H. Snow	28	55	10	6	30.5	2.90
Holton	Jackson	Jas. Watters, M. D	6	50	10	3	30.6	
Le Roy	Coffey	J. G. Shoemaker	6	60	10	13	36.3	2.45
Neosho Falls	Woodson	Mrs. E. W. Groesbeck	4,5	56	10	11	32.0	4.10

Table showing the range of the thermometer, &c., for January—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
KANSAS—Cont'd.				°		°	°	*In.*
State Agricult'l Coll.	Riley	Prof. B. F. Mudge	28	54	10, 25	5	30. 6	1. 15
Council Grove	Morris	A. Woodworth, M.D.	28	58	10, 11	12	35. 4	2. 75
Averages							32. 7	3. 24
NEBRASKA.								
Dakota	Dakota	H. H. Brown	27	46	25	— 6	23. 9	0. 55
Omaha Mission	Omaha Reserve	Rev. Wm. Hamilton	3	50	25	0	27. 6	0 13
De Soto	Washington	Charles Seltz	21	43	25	— 4	24. 7	0. 60
Bellevue	Sarpy	Mrs. E. E. Caldwell	6, 27	46	25	2	26. 3	0. 90
Glendale	Cass	Dr. A. L. & Miss Child	21	49	25	— 2	23. 4	1. 30
Nebraska City	Otoe	Prof. P. Zahner	21	50	25	2	28. 6	1. 15
Peru	Nemeha	J. M. McKenzie	21, 27	47	25	3	28 0	0. 43
Averages							26. 1	0. 72
UTAH.								
Wanship	Summit	Thomas Bullock	24	42	18	—20	20. 5	1. 70.

NOTES ON THE WEATHER, JANUARY, 1869.

Houlton, Me.—Aurora, two arches with diffused light beneath instead of cloud, 10th; auroral mist 17th.

Steuben, Me.—Faint auroras 6th, 7th, 17th; singular alternations of rain, hail, snow, all winter; good sleighing, little snow, much ice.

Williamsburg, Me.—Aurora, bright streamers, 19th, p. m., and 20th, a. m.

Lisbon, Me.—Pleasant month, fine sleighing, only three really cold days.

West Waterville, Me.—Temperature 5.47° above January average for five years; best of sledding through December and this month.

Gardiner, Me.—Temperature nearly 4.6° above January average for 33 years, (18°.) November, snow 16 inches; December, 10.5 inches; January, 5.5 inches; never exceeded three inches on the ground, yet good sleighing throughout.

Standish, Me.—Snow in woods a foot deep; excellent sledding.

Norway, Me.—Faint aurora 7th; with bright streamers 17th; month of fine winter weather; snow-fall 12.2 inches.

Cornishville, Me.—January average temperature for 40 years, 17°; this January, 23.8°; snow fall, 16 inches.

Antrim, N. H.—Month mild and pleasant; seven days of snow; good sleighing.

Shelburne, N. H.—Aurora, streamers north-northwest to north-northeast 21st; snow-fall, 15.6 inches.

North Barnard, N. H.—Remarkably fine January and excellent sleighing.

Randolph, Vt.—Snow 1st, 2d, 11th, 12th; rain 5th, 10th; hail 30th.

Woodstock, Vt.—Good sleighing all month; snow-fall, 22 inches.

Brandon, Vt.—Except three days, a very mild month throughout.

Kingston, Mass.—Aurora 6th; remarkably warm and pleasant; only one cold day and one snow-storm; wild geese reported flying north.

Topsfield, Mass.—Month closes warm and open; good sleighing north and east most of the time; ice 12 inches thick, good quality.

Milton, Mass.—Warmest January since 1863, when it was 2° warmer. Average mean temperature of January for 45 years, 27.66°; coldest day in average of 44 years, February 1st.

North Billerica, Mass.—Open and beautiful month; good sleighing; ground nearly bare.

New Bedford, Mass.—Very little snow on ground, and ice not worth mention.

Mendon, Mass.—Ice on pond, 18 inches; snow, only in patches, 31st.

Lunenburg, Mass.—Severe snow-storm 1st, heavy and drifted; mildest January since 1863; 3.21° warmer than mean for 30 years, (24.62°;) but little wind; unhealthy; after 13th, sleighing good, but now ground nearly bare.

Richmond, Mass.—Spring day, gnats and mosquitoes out, 8th; month unusually mild, and sleighing very fine.

Newport, R. I.—Warmest January, and with less snow than I ever recorded.

Pomfret, Conn.—Month fine; no severe cold, no snow, splendid wheeling.

Columbia, Conn.—Snow-storm 1st; rain 4th, 11th, 30th; mild month; few storms.

Colebrook, Conn.—Good sleighing December 6th to January 9th; slight snow squalls 18th, 19th, 20th, 31st; heavy rain 29th and 30th.

Moriches, N. Y.—Freezing rain 1st; aurora 21st; rain, lightning, and thunder 30th; ice gone on ponds and but little frost in the ground 31st.

South Hartford, N. Y.—Brilliant arched aurora 7th; "broad" lake Champlain frozen over 19th; a very pleasant month; plenty of snow, good sleighing, few long storms.

Garrisons, N. Y.—Severe hail storm 1st; five inches laid; month of fine weather; frost penetrated but little.

Nyack, N. Y.—Hudson free from ice and steamboats running 31st.

Newburgh, N. Y.—Very mild month; maximum mean 7°, minimum mean 3° above January, 1868.

Sloansville, N. Y.—Very bright auroras early in month; snow even; sleighing good.

North Hammond, N. Y.—Bitter cold, with high wind, 1st, 25th; rest of month warm.

Houseville, N. Y.—Boisterous 1st; tempestuous 2d; first thaw 3d; auroras 6th, 7th, 10th, 17th; rain, with lightning and thunder, 30th.

Depauville, N. Y.—Snow drifting furiously 1st; auroras 5th, 7th, 10th; month pleasant, 9° warmer than any January in 5 years; sleighing good.

North Volney, N. Y.—Auroras 3d, 6th, 7th, 17th; heavy frost 17th.

Nichols, N. Y.—Hard snow-storms 1st and 2d; rain and thaw 9th; broke up ice in the Susquehanna and filled its banks.

Newark Valley, N. Y.—Rain with vivid lightning and heavy thunder 30th.

Rochester, N. Y.—At 10.35 p. m. on 21st a ball of fire lit up the mid heavens and passed to northeast, leaving two long streamers; in about a minute it burst with a report into two orbs and passed over the lake out of sight. Sleighing all the month, except eight days.

Buffalo, N. Y.—This month 4° warmer than the eleven preceding Januarys.

Newark, N. J.—Year came in with a violent northeast snow-storm, extending south beyond Washington, west beyond Chicago, and east to Maine; mean temperature 3.9° above the average of 25 Januarys; yet in 16 the mercury rose higher, and in six the mean temperature was higher than in this month.

Dover, N. J.—Severe storm of sleet 1st; covered trees with ice, and broke many so as to obstruct roads. But little ice put up. Ground hardly frozen.

Newfield, N. J.—No snow seen 1st; aurora 5th; yellow-birds seen

14th; first snow of January (one inch) 18th; thunder 30th. Farmers ploughed nearly all January.

Greenwich, N. J.—Caterpillar seen 14th; lightning and thunder 29th; wasps active, and blue-birds singing 30th; no snow, little ice, navigation not closed in January.

Vineland, N. J.—Violent rain-storm all day 1st, also 11th and 15th; thunder-storm 29th. Entire month open, and farm work vigorously prosecuted.

Fallsington, Pa.—Severe storm of sleet 1st; Delaware river open; broken month; frost mostly out of the ground; roads bad.

Philadelphia, Pa.—Rain, hail, and snow 1st; Schuylkill clear of ice 2d.

Horsham, Pa.—Heavy freezing sleet 1st; broke down trees and limbs; another, less severe, 11th; first good sleighing 18th; month open and warmer than in several years.

Plymouth Meeting, Pa.—Month began with a severe northeast storm of rain and hail, and closed with the ground free from frost.

Dyberry, Pa.—Good sleighing since December 8. January snow fell 12.4 inches.

Whitehall, Pa.—Yesterday's snow turned to hail and misty rain 1st; freezing rain 11th; broke down trees, and ice remained till 13th.

Factoryville, Pa.—Snow and sleet, five inches, very solid, 1st; month 8.56° warmer than four preceding Januarys; good sleighing nearly all the month.

Reading, Pa.—Latter half of month spring-like; snow and frost nearly all gone, and grass growing.

Parkesville, Pa.—Heavy sleet 1st; continued till 5th; heaviest ever known here; injured maple, peach, and other trees, being about an inch thick of ice.

Westchester, Pa.—Easterly storm of December 30 continued till 5th; great thickness of ice on trees; heaviest sleet since 1832; sap flowing freely from broken maple limbs 23d.

Ephrata, Pa.—Rain 1st to 4th, forming an inch of ice on trees, &c.

Harrisburg, Pa.—Sleety snow 1st; rain six days, snow one, and snow and rain one.

Carlisle, Pa.—Sleet, mist, rain, snow, all forming ice, 1st; month of sunny days, moonlit nights, and little wind, but unhealthy; many deaths of aged people.

Fountain Dale, Pa.—First four days vapor, ice, destruction of trees; another icy day 11th; remainder mild, fine for outdoor work, some ploughing done.

Tioga, Pa.—River bank full, and ice gone, 10th; frozen over again 22d.

Grampian Hills, Pa.—Two feet hard snow on ground 1st, when sleet set in and broke down trees, &c. Though snow is deep and travelling difficult, the month has been pleasant.

Johnstown, Pa.—Heavy rain, lightning and thunder, 30th; month mild.

Franklin, Pa.—Freezing rain, snow, and rain, 1st; Allegany river opened 4th; frost out of ground 6th; snow, rain, sleet, snow 11th; rain, with lightning, 29th.

Connellsville, Pa.—Aurora, bright streamers, 21st; thunder-storm 29th.

Newcastle, Pa.—Blue-birds 8th and 9th; 12 inches snow 12th; still in sight; made sleighing for two weeks. January unusually mild.

Beaver, Pa.—Heavy easterly rain 1st and 2d; frost out of ground 3d; heavy thunder and lightning, with much rain, 29th.

Woodlawn, Md.—Freezing mist and rain, breaking down trees, 1st to 5th; Susquehanna open 10th. Month 7.8° warmer than last three Januarys; snow fall only one-eight of an inch.

Mount St. Mary's, near Emmittsburg, Md.—Rain, snow, sleet, mist freezing on and breaking down trees, &c., 1st to 5th. Month remarkably mild.

Johnsontown, Va.—Slight rain and mist 1st; tree-frogs heard 5th; thunder-shower 30th.

Surry C. H., Va.—First ice since December 26th; 13th, frogs heard and insects on wing; 28th, first thunder and lightning of the year, with rain; 30th, a wild blustering day.

Zuni Station, Va.—Aurora 13th; wild geese flying north 26th; thunder-storm 30th.

Ashland, Va.—Rain, loud rattling thunder and vivid lightning night of 29th.

Wytheville, Va.—Mildest January known—not enough snow to cover the ground; nights cold, days pleasant, and farmers ploughing for corn.

White Day, W. Va.—Heavy thunder-storm 30th; snow on seven days, 10 inches.

Weston, W. Va.—Heavy thunder with little rain 29th, wind southwest.

Cabell C. H., W. Va.—Thunder-shower from west at 5 a. m. 4th; thunder and lightning in west without rain 29th.

Goldsboro, N. C.—Lightning in northwest 16th, 29th; a remarkably mild month.

Oxford, N. C.—Heavy thunder and lightning with rain from northwest 29th.

Guilford Mine, N. C.—At 1 a. m. 29th vivid lightning and deafening thunder, and 7.40 p. m. lightning, thunder, and rain—rain ending at 2.10 a. m. on 30th.

Albemarle, N. C.—Thunder-storm with hail from southwest 29th; late sown grain now growing finely; a good stand.

Anderson, S. C.—Month very equable and mild—last part especially good for farmers.

Atlanta, Ga.—Thunder-storm from southwest; wild plums near blossoming.

Moulton, Ala.—Few days wholly fair; many cloudy and dull; some cold with rain; vegetation not started yet.

Greene Springs, Ala.—Slight snow 10th; thunder in south and southwest 29th. The meteor of December 5th was seen at Tuscumbia, 150 miles north.

Havana, Ala.—Thunder and diffuse lightning 3d; diffuse lightning a. m., and with thunder p. m., 29th.

Lake City, Fla.—Frosts 6th, 12th; 19th, ice; 13th, farmers ploughing for corn.

Ocala, Fla.—Third severe freeze 12th; lightning in southeast 29th.

Jacksonville, Fla.—Only two slight frosts; mean temperature nearly 2° above average.

Yorktown, Texas.—Thunder-storm with hail 9th; another from northwest 31st.

Galveston, Texas.—Disagreeable month of rains and fogs—no great storms.

Houston, Texas.—Aurora 9th, 12th, 30th; sleet 9th; snow 10th; frost 25th; thunder 26th and 28th, and with constant lightning in east at 6 to 10 p. m. on 28th.

Lavacca, Texas.—Norther nearly all day 18th—not a north wind, but colder, instantly changing temperature again 19th; red mulberry leafing 31st.

New Orleans, La.—White frosts 6th, 12th, 13th; ice 11th; spring weather, mocking-birds singing and vegetation putting forth vigorously.

Grenada, Miss.—White maple and plum near blossoming.

Brookhaven, Miss.—Lightning and distant thunder north and northwest 3d; snow 10th; vivid lightning, with hail, north and northeast, 24th; flashes of lightning and heavy thunder southwest followed by hail and rain from west, 28th.

Natchez, Miss.—Thunder and lightning 3d, followed by rain in the night; five inches snow 10th, 11th; thunder showers 28th.

Marion C. H., Miss.—Hyacinths and violets blooming 17th to 22d. Cold and disagreeable month. Excessive rains retarded ploughing, gardening, &c.

Elizabethton, Tenn.—Month unusually warm—many farmers ploughing.

Clarksville, Tenn.—Gentle rain December 31 and January 1; snow 10 inches 11th.

Memphis, Tenn.—Rain December 29 to January 1; snow east and south, none here 11th. Trees budding, grass growing, rosebushes leafing. Mean temperature, 7.8° above December.

Pine Grove, Ky.—Snow rain, sleet and snow 10th in all eight inches heavy snow; thunder-storm 29th, with strong wind and hail, then lightning east, southeast, and south.

New Lisbon, Ohio.—Rain 1st; bees out 7th; rain, thunder, and lightning 29th. Warmest January in 30 years—fine for grass and winter grain.

Steubenville, Ohio.—Light snow 15th, 31st; rain, thunder, and lightning 29th.

Painesville, Ohio.—Sleet 1.5 inch 1st; frequent thunder but little rain 29th.

Cleveland, Ohio.—Month unusually mild, 2° above January, 1858. Average January temperature of 14 years, 26.34°; this, 33.18°.

Kelley's Island, Ohio.—Most violent northeast storm 1st; snow, sleet, and freezing rain—brilliant aurora 21st. Warmest January since 1863.

North Fairfield, Ohio.—Freezing mist 1st, covering everything with ice five-eight of an inch thick; aurora 21st; vegetation starting 25th; thunder-shower 20th. Warmest January since 1861; 1863 nearly as warm.

Toledo, Ohio.—Average January temperature 32.97°; for nine years 27.508°; for 1863 34.104°.

Westerly, Ohio.—Rainy 1st; thunder-showers with very sharp lightning 29th, p. m.

Bowling Green, Ohio.—Brilliant aurora 21st; thunder storm 29th. Only one clear day, 23d.

Urbana, Ohio.—Fog 1st; vivid lightning with thunder 6 p. m. 29th. Mean temperature 8° above January average of 17 years 1858 only great, when mean was 36.45°.

Jacksonburg, Ohio.—Thunder-storm 4 p. m. 29th, and lightning east in evening.

Litchfield, Mich.—Spring weather about 8th; no sleighing since 5th; good wheeling 10th to 29th; ground frozen about four inches deep 31st.

Cold Water, Mich.—Six inches snow 1st; fields bare 8th; roads dusty 26th.

Grand Rapids, Mich.—Sunniest January I have seen here; little snow or rain. Fruit buds and wheat not yet injured.

Northport, Mich.—Tedious easterly storm, but not very cold, 1st; low aurora 20th. Month very mild and open. Many sudden deaths among the Indians.

Holland, Mich.—Snow and wind 1st; aurora 30; rain and slight snows on 12 days.

Copper Falls, Mich.—Unusually mild winter; less snow than usual; harbors open.

Vevay, Ind.—Yellowbirds and moles 5th; brilliant aurora 20th; bluebirds and blackbirds 28th; thunder in west at 3.30 p. m., and diffuse lightning northeast at 6.30 p. m. 29th.

Muncie, Ind.—Mean temperature 12.92° above January, 1868, and 14.14° above January, 1867.

Knightstown, Ind.—Heavy thunder with hail from southwest at 2.50 p. m. 29th.

Rensselaer, Ind.—Very heavy sleet 1st, 2d; lightning and heavy thunder 4 p. m. 29th. Month warm and equable; roads now dry and dusty.

Marengo, Ill.—Snow 1st; drifted at night; average depth 12 inches.

King's Mills, Ill.—Severe northeast snow-storm 1st, 2d. Pleasantest January for years.

Belvidere, Ill.—Northeast storm 1st, 2d; Indian summer weather 19th to 24th; aurora 21st. Very mild month.

Winnebago, Ill.—Light snow 1st, 2d; bright aurora 20th. Mean temperature 10.7° above 11 preceding Januarys.

Tiskilwa, Ill.—Rain December 31, froze on trees, &c.; snow on 1st and 2d, loaded trees to their utmost capacity; auroras mornings of 19th, 20th.

Hennepin, Ill.—Gentle freezing rain, then snow, 1st and 2d; no frost or ice since; auroras 19th, 20th, 21st.

Laomi, Ill.—Wild geese flying north 21st; extraordinarily mild January; no storms; roads deep mud, almost impassable.

Dubois, Ill.—Frogs 8th; bright, blood-red aurora a. m. 20th; bluebirds 22d; heavy thunder-storm 2 a. m. 29th; no snow, little rain; temperature 9° above average of last four Januarys; winter wheat fine; peaches safe, except some tender varieties.

Mt. Sterling, Ill.—Lunar haloes frequent; average temperature 11° above December, and 17° above last January; frost nearly out of ground, and roads next to impassable for loaded teams.

Plymouth, Wis.—Month 7° above average temperature of five past Januarys; sleighing middling good; much improved since snow of 29th.

Milwaukee, Wis.—Snow December 31 and January 1; sleighing destroyed 4th; aurora a. m., p. m., and all night 20th.

Embarrass, Wis.—Aurora 6th; very bright, blood-red aurora a. m. 20th; bright, double-arch aurora 21st; hardest snow-storm this winter, snow badly drifted 30th.

Baraboo, Wis.—Unprecedented January for steadily mild weather.

New Lisbon, Wis.—Fifteen inches snow fell 28th and 29th.

Bayfield, Wis.—Very brilliant aurora a. m. 20th; another less bright a. m. 21st.

Afton, Minn.—First sleighing 1st; aurora 6th, 7th; finest January I ever saw; ground frozen three feet; snow fell 6.9 inches.

St. Paul, Minn.—Beautiful aurora, 5 a. m. 20th; only one milder January in 10 years.

Minneapolis, Minn.—Little snow, but good sleighing all the month; ice in Mississippi 21½ inches thick, being 5½ inches less than usual at this season.

Koniska, Minn.—Aurora, bright crimson streamers, p. m. 21 and a. m. 22; again, p. m. 22 and a. m. 23; mirage 25th—objects 20 to 50 miles distant appeared high in air, as only two or three miles away; finest January in 13 years; clear nearly all the time.

New Ulm, Minn.—Aurora all night of 20th and 21st; month one of the finest—only needed a little snow to facilitate farm work.

Clinton, Iowa.—Snow stopped the cars at State Center 8th; but no snow here.

Dubuque, Iowa.—Bright aurora at 4 a. m., and slight at 7 p. m., 20th.

Bowen's Prairie, Iowa.—Aurora a. m. 18th; springs low, but month pleasant.

Guttenberg, Iowa.—Poor sleighing and worse wheeling this month, but good for cattle at straw-piles; they never looked better. Ice on slough 15 inches on 20th.

Independence, Iowa.—Aurora 20th, 21st; mild. equable month; no snow or rain, and no hard winds from 9th to 26th.

Waterloo, Iowa.—Snow fell 20 inches; good sleighing four weeks; but little wind.

Rockford, Iowa.—Rough snow-storm 1st—worst storm of season; snow badly drifted, 29th; otherwise the mildest January I ever knew; snow-fall 18 inches.

Iowa Falls, Iowa.—Heavy snow-storm 1st; badly drifted snow 29th; aurora 21st, lasting till a. m. 22d.

Algona, Iowa.—Snow-storm of December 31, ended night of 1st; aurora, a. m. and p. m. 20th; snow-storm 28th and 29th.

Boonboro', Iowa.—Snow-storm 1st; mirage 14th; objects 14 and 15 miles distant seen clearly, as if near; mean temperature 3.53° above January average of 14 years.

Rolfe, Iowa.—Mirages 11th, 12th, 14th, 21st—the first three particularly fine, raising up scenery 30 to 40 miles distant, and presenting it plainly, and apparently only a mile or two off.

Hematite, Mo.—Month remarkably mild and free from snow; wheat fine; peaches safe yet; blue-birds here all through January.

Hermitage, Mo.—Month uniformly mild, suitable for making maple sugar; streams flush and no ice; roads muddy; mean temperature 11.2° higher than in 1868.

Bolivar, Mo.—Except a few mornings, ploughing all month.

Oregon, Mo.—Trees, &c., coated with ice 1st, 2d, 8th, 12th, and 29th; aurora 20th; pond ice a foot thick 23d; great commotion among blue-birds, snow-birds and water fowls.

Alatha, Kansas.—No winter like this in 11 years, except part of October, clouds, snow, rain, and mud making business difficult ever since summer.

Holton, Kansas.—Still wet and disagreeable; fruit and forest trees broken by weight of ice on 1st; peaches killed December 11th; fall wheat looks well.

Le Roy, Kansas.—River rose 22 feet in 30 hours 15th and 16th; no ice this month.

Burlington, Kansas.—Neosho river not frozen over this month.

Council Grove, Kansas.—Muddiest, warmest, rainiest January since this was a State. Wheat looking fine, and an unusual breadth sown.

Glendale, Neb.—Platte river closed 5th; Missouri river, partly, 8th, wholly 12th. A very warm, even and uneventful month.

Nebraska City, Neb.—Forked lightning and several thunder peals, with a little rain, 28th. Ice on river 16 inches thick.

Wanship, Utah.—Strong wind and snow 1st; water in house frozen 14th; first railway train arrived 15th.

Harrisburg, Utah.—Cloudy, foggy, stormy 1st, 2d; first snow, melted as it fell, 27th; farmers preparing to sow wheat; mountains full of snow, and earth full of grasshopper's eggs, a promise and a threat.

MONTHLY REPORT

OF THE

DEPARTMENT OF AGRICULTURE,

FOR

MARCH AND APRIL,

1869.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1869.

MONTHLY REPORT.

WASHINGTON, D. C., *April* 27, 1869.

SIR: I herewith submit for publication the monthly report for March and April, including a digest of the April returns of the condition of farm stock and diseases of farm animals, with extracts from correspondence, estimate of wool in first hands, and articles upon the following topics: Death of B. P. Johnson; the Spartina Fibre; Ramie or China Grass; Agriculture in Nebraska; Castor Oil Bean; Decrease of Wool-Growing; Smut in Corn Poisonous; Wheat in Minnesota; the Western Grasshopper; Forest Culture; Adulteration of Seeds; British Imports of Cotton and Wheat; Hungarian Wheat Exports; English Cereal Crops in 1868; Agricultural Production in Prussia; Live Stock of European Countries; the Netherlands, and the Projected Exhibition; Facts from Various Sources; and Meteorology.

Respectfully,

J. R. DODGE, *Statistician.*

Hon. HORACE CAPRON,
Commissioner of Agriculture.

CONDITION OF FARM STOCK.

The annual inquiries, at the close of winter, relative to the condition of farm animals, the prevalence and fatality of diseases afflicting them during the past year, and other considerations connected with stock-growing, were returned on the 1st of April, with varied and general information upon many points, among which are the following:

1. Has there been any prevailing disease among the cattle in your county during the past year?
2. Has the Spanish fever prevailed among cattle in your county? If so, what has been the loss, and what facts not heretofore given can be presented?
3. Has the hog cholera prevailed? If so, what has been the loss?
4. What diseases have prevailed among sheep, and to what extent?
5. Has any unusual disease prevailed among horses?
6. How many tenths of last year's wool clip remain on hand?
7. In what condition have cattle come out of winter quarters?
8. In what condition have sheep come out of winter quarters?
9. How will losses of cattle and sheep in wintering compare with the previous winter?
10. Have wool-growers sold sheep to be killed for their pelts and tallow, or to be sent out of the State? And if so, to what extent?

The mildness of the winter has been favorable to health and condition of all kinds of farm stock. In the more northern States there were few

sudden changes of temperature, few alternations from one extreme to another, and very little weather of much severity or discomfort to the denizens of the barn and stock-yard. The reported losses from diseases of all kinds are less than for any year since this record has been systematically kept, showing conclusively that all cattle diseases are far less the result of climatic causes, or of feeding upon injurious plants and unwholesome fodder, than the effect of starvation, exposure and neglect.

The condition of cattle, as compared with their status in the spring of 1868, is improved, except in Florida, Alabama, Mississippi, Kansas and Nebraska. Cases of pleuro-pneumonia are reported in the vicinity of the cities of New York, Philadelphia, Baltimore, and Washington. The Spanish fever, communicated by southern cattle, caused a brief season of panic, and occasioned heavy local losses at points of reshipment in Kansas, Missouri, Iowa, Illinois, Indiana, and to a smaller extent eastward to the Atlantic coast. Abortion has been somewhat prevalent on dairy farms of the middle and eastern States. Black tongue, black leg, hollow horn, and a variety of "distempers," "murrains," and other undefined forms of disease are reported, but not to the usual extent. Less than one county in ten, of the entire number, reported the prevalence of disease, further than the slight ailments which rarely prove fatal. Not a county in Ohio or Michigan furnishes evidence of the existence of unusual disease among cattle.

Those States in which winter shelter is not provided are marked by lower condition of farm stock, and a higher rate of mortality than Maine or Minnesota. The southern States, the best portion of the country for stock-growing, have almost literally no provision either for feed or shelter in any portion of the year. As a business, stock production there is little more than an appropriation of spontaneous growth, costing neither money nor labor, except in the in-gathering or harvest.

The reports relative to sheep are not so favorable. The wool business has been comparatively unprofitable of late, and the inevitable result is neglect, short commons, a supply of mouldy hay, and the roughest treatment, in too many instances, resulting in leanness, weakness, and the insidious approaches of disease. Where they have been suitably cared for they are healthy, and as Merinoes are in present disfavor, disease is mainly among flocks of that breed. Were it not for the culling process, by which several millions of the poorest (60,000 in some cases in a single county) have been remorselessly slaughtered for their pelts and the small modicum of fat that could be drained by hydraulic pressure from their juiceless carcasses, the ravages of disease would have proved far greater. This weeding out of the victims of poverty will result beneficially in elevating the average of health and condition. Wool-growers, whose fears have overcome their judgment, and caused the depreciation of their flocks or the abandonment of their business, will ere long regret their hasty action. Already a reaction has commenced; prices of wool are stiffening, and the value of sheep is slightly advancing. If there is no legislative interference with the growth or manufacture of wool, a better day will soon dawn, and the time will prove auspicious for enlarging rather than abandoning the production of wool.

The States in which the comparison, in point of condition, is unfavorable with last spring, are Maine, New Hampshire, Vermont, Alabama, Mississippi, West Virginia, Missouri, Illinois, Indiana, Ohio, Michigan, Wisconsin, Iowa and Kansas. The losses from disease, dogs, wolves, and freedmen and other plunderers in the south, together with the depreciation from slaughtering for pelts, present an unfavorable comparison with the previous year in almost every State in the Union, and represent

a total reduction in numbers of not less than 4,000,000. Yet all these losses, exclusive of the voluntary destruction of sheep for their wool, skins, and fat, make an aggregate of loss no greater than that of the previous year.

Horses, being valuable, are generally well fed and stabled, and appear to have been remarkably exempt from disease the past year. Glanders, which became so prevalent in the territory swept by the ravages of war, is a disease yet dreaded, though far less common than in 1866 and 1867. Blind staggers is yet common, especially in miasmatic localities; charbon is fatal in Arkansas and elsewhere in the southwest; lung fever and other diseases are occasionally reported.

The following notes, furnishing briefs of the most noticeable data received, will give an idea of the extent and character of the diseases of farm animals during the past year, though the returns are necessarily deficient in veterinary accuracy:

CATTLE DISEASES.

NEW HAMPSHIRE.

Hillsborough county.—For several years past there has been some loss of cattle in mountain pastures, from some unknown form of disease. Similar losses have occurred in neighboring counties. The cattle are generally found dead before any appearance of sickness has been observed. Inconvenience and loss have resulted from cows dropping their calves prematurely, often causing the loss of the cow, and generally injuring her for milk production.

MASSACHUSETTS.

Hampshire county.—A few cattle have died from eating "smut corn."

NEW YORK.

Chautauqua county.—Abortion among cows is prevalent.

Kings county.—Pleuro-pneumonia has been very fatal for the past 12 or 15 years. Since vaccination has been practiced the loss has been diminished greatly. The virus is inserted in the end of the tail. Loss by vaccination of healthy cattle one or two per cent.

Erie county.—A new disease prevails among milch cows. Symptoms, watery eyes, yellow matter running from nostrils, breathing heavy, blood passing from the intestines, cramps, resulting in death in eight to twelve hours. A few cases have been saved by giving calomel in doses of twenty to thirty grains in cold water once in three or four hours.

Lewis county.—Abortion about as in former years.

NEW JERSEY.

Essex county.—Abortion in cows prevails. Removal of aborting animals, cleanliness in stables, and the use of sound, sweet hay generally arrests the disease.

PENNSYLVANIA.

Montgomery county.—The disease among horned cattle so destructive during the last few years has almost entirely disappeared. The principal remedy applied appears to be nothing more or less than a complete reno-

vation of barns and stalls, by ventilation and free use of lime, and a regular healthy diet. This, to many large farmers whose loss in cattle was very heavy, has proved the most effective remedy.

Delaware county.—Pleuro-pneumonia has prevailed considerably, proving fatal to animals first attacked, but becoming milder so as to admit of treatment in subsequent cases.

MARYLAND.

Baltimore county.—Our correspondent says: "We have had the pleuro-pneumonia in our county among cattle during the past three years. The malady has been very destructive—some individuals losing almost their entire herds. The disease is of a highly contagious character, and the most skillful cattle surgeons are unable to control it. The losses have been much lighter during the past year. Sixteen valuable Ayrshire cows perished in one stable; a few other losses, varying from five to fifteen, occurred. In most of the stables where the disease prevailed with great virulence the previous year it has subsided, owing to a strict quarantine. The careful isolation of the infected herds had the desired effect in reducing the malady to a much smaller scale."

Prince George county.—Pleuro-pneumonia attacked one herd and four or five died. *The remainder were sent to Washington for beef*, and the disease did not spread.

VIRGINIA.

Highland county.—Black leg is common among young cattle. The cattle are usually found dead before sickness is observed. Bleeding, when in season, is deemed a sovereign remedy. Symptoms, coagulated blood about the legs, hip and back, under the skin. Hollow horn prevails every winter and spring. An unknown disease has made its appearance among young cattle. Symptoms, loss of appetite, stupidity, watery matter running from nose and eyes. No remedy has been found.

Washington county.—Some calves died, having small worms in great quantity in the windpipe.

Rockbridge county.—A few deaths from black tongue.

NORTH CAROLINA.

Bertie county.—Black tongue rather destructive.

Cherokee county.—Fatal cases of swelling between the jaw bones. Our correspondent lost five yearlings and has a three-year-old affected. Many fatal cases in the county. On opening they are found to contain much yellow water, with yellow spots on the flesh after skinning.

Rutherford county.—Five per cent. loss from disease.

Surry county.—A distemper, presumed to be Spanish fever. Loss about five per cent.

Johnson county.—A few milch cows affected. The head and neck swell, and the animal dies in a few days. The parts swelled appear to be charged with yellow water.

Caldwell county.—"Bloody murrain," "hollow horn" and "distemper."

GEORGIA.

Murray county.—Distemper has prevailed in some sections—all cases fatal.

Walker county.—"Bloody murrain" to a great extent, 80 per cent. of

those attacked died; old cattle most susceptible to the disease; no successful remedies.

Gordon county.—A few cases of murrain; 90 per cent. of those attacked died.

Tatnall county.—Murrain to a considerable extent, loss 20 per cent.

ALABAMA.

Coosa county.—Some unknown disease, symptoms resembling effects of a venomous snake bite; great swelling of head and jaws, difficult breathing, fever, great thirst, but inability to swallow; none recovered.

Clay county.—Black tongue has prevailed.

FLORIDA.

Nassau county.—Two nameless diseases have existed for years; the first is invariably fatal, has killed hundreds of cattle. Symptons: the animal is attacked with lameness, walks stiffly and painfully, great emaciation soon follows, and in a short time death. In the second, the mucous membrane lining the mouth, nose, throat and fauces becomes highly inflamed, ulceration and erosion soon supervene, and if not promptly treated death will ensue in a few days. Copperas combined with charcoal has been used successfully in this form of disease.

Suwanne county.—A few cases of murrain.

MISSISSIPPI.

Generally healthy throughout the State, except in Yazoo county, where charbon has existed with heavy losses.

LOUISIANA.

Carroll Parish.—A few cases of hollow horn.

Tensas Parish.—Isolated cases of charbon, nearly all fatal.

TEXAS.

Fayette county.—Murrain to a limited extent. Not unfrequently the fattest cattle are its victims.

Harris county.—The past winter has been very unfavorable to young calves, especially where the cows were milked. A farmer lost 23 out of 26 calves dropped. No cause assigned.

Walker county.—A few cases of "bloody murrain."

ARKANSAS.

Clark county.—One farmer lost nine cows from a disease, communicated by Texas droves, quartered for two nights in his pens.

Columbia county.—Upon several adjoining farms fat cattle have died suddenly from some unknown disease.

Madison county.—A disease has prevailed, called by some "murrain," by others, Spanish fever. Loss 10 per cent.

Monroe county.—A number of cattle died from a disease somewhat similar to Spanish fever, but believed by many to be different.

TENNESSEE.

Polk county.—A distemper or "murrain" has prevailed during the warm weather, often proving fatal. It ceases at the coming of frost.

WEST VIRGINIA.

Pendleton county.—Many young cattle die from neglect during winter.
Boone county.—Murrain, to some extent.
Mincral county.—Black leg among calves.

MISSOURI.

McDonald county.—Some cases of Spanish fever or "dry murrain."
Adair county.—No prevailing disease. A few have died of murrain.

ILLINOIS.

Lawrence county.—Milk-sickness prevailing, more or less, as usual.
Lee county.—Some cases of swelling in fat cattle, under the neck and about the glands.

INDIANA.

Whitley county.—One person lost seven head out of 50, very suddenly. Cause unknown; probably smut in corn-field in which the herd ranged.
Lawrence county.—Some steers feeding, and in fine condition, have unaccountably died. Considerable mortality among calves weaned in the fall; dying during the winter with a bloody diarrhœa. No particular discharge of blood, but bloody mucus abundant. After death there was found underneath the skin a quantity of yellow serum; and even before death this yellow serum would collect in dependent portions of the body, where there was loose skin, as under the jaw. About half of our correspondent's calves that were attacked died.

OHIO.

Lucas county.—Some cattle have died; something resembling a leech perforating the liver. Cattle die in a few hours; blood passing them freely previous to death.

WISCONSIN.

Buffalo county.—Considerable loss in cattle in the south part of the county; supposed by some to be caused by smut on corn-stalks; but other cattle have died of the same disease that have not eaten the stalks. It seems to be an inflammation of the small stomach, or what is known as the dry murrain.

MINNESOTA.

Rice county.—A few cattle have died. In one case, five in 24 hours; attributed to eating corn-smut.
Winona county.—Some losses of cattle from black leg; not infectious. One ox was skinned and looked healthy in every part, except one hind quarter, which was a mass of dark bubbles, as when decomposition commences.

IOWA.

Dickinson county.—We have had several cases of black leg.
Appanoose county.—A few cases of black leg among calves and yearlings. Can be prevented by feeding copperas and salt freely.
Jasper county.—A considerable number died on being turned into the corn-stalks. Loss in herds attacked ranged from 3 to 15 per cent., and in a few as high as 50 per cent.

Sac county.—Many cattle died in December; cause unknown. Some supposed from eating smut-corn, but that has been disproved.

Audubon county.—A few cattle died with dry murrain; supposed by some to be caused by smut in corn-stalks.

Story county.—In November a disease appeared among herds recently turned into corn-stalk fields. The disease is evidently dry murrain. A *post mortem* examination showed the mucous membrane of the stomach highly inflamed, with symptoms of poison. It is evident that the disease is generated in the stalk-fields, and probable that it is produced by gorging the stomach when first turned into the stalks, after being confined on the wild frost-bitten prairie grass, and lack of sufficient water.

Taylor county.—Black leg has prevailed among calves in crowded sheds.

Calhoun county.—A few head lost; supposed to be from eating smut-corn.

Marshall county.—Many cattle have died from eating smut on corn-stalks.

KANSAS.

Allen county.—A few calves died from the black leg.

Shawnee county.—Some cases of dry murrain; fed on prairie hay cut after frost.

NEBRASKA.

Dakota county.—Dry murrain; supposed from eating smut in corn-fields.

Washington county.—A disease has prevailed, commencing with a kind of stupor, followed by spasms, the animal probably dying in an hour.

Cass county.—A few cases of black leg.

THE SPANISH FEVER.

The ravages of the Spanish fever, or splenic fever of Professor Gamgee, were greater last season than ever before. The mode of transportation, by steam eastward from the frontier railway stations, and up the Mississippi river in steamboats, brought the contagion into the heart of the country, and disseminated it from the Mississippi to the Atlantic. Formerly it was confined to the frontiers, the length of time elapsing in travel on foot sufficing to eliminate the virus of the disease from the systems of the emigrating cattle before their arrival on the banks of the Mississippi.

A few cases are reported in the eastern States; in New York, New Jersey, and in Lancaster county, Pennsylvania.

In Ohio, slight losses were suffered in Hamilton county; six head, among two car loads, in Wyandott; a few cases in Green, Mercer, and Hancock.

In Indiana, from 400 to 600 cases in Benton county; two droves were destroyed in Jasper county; 100 deaths are reported in Marion, and losses are given in White, Newton, and Hendricks.

In Illinois, among other reports, are losses in Ford county of 500 head; 100 in Grundy; large numbers in Champaign, (valued at $150,000 at least;) 40 in Douglas; 19 in Clinton; and small losses in Massac, Pulaski, Effingham, Cook, Iroquois, Macon, Pope, Morgan, Alexander, St. Clair, and Du Page.

In Missouri heavy losses occurred; in St. Louis there were 1,400 cases

of cows and 300 of heifers; in wton the loss numbered 300. In many other sections of the State the disease was more or less prevalent, as in M'Donald, Butler, Clark, Polk, Bates, Cass, Henry, Montgomery, Benton, Mississippi, Cedar, Dade, and Hickory; but the details of these returns, together with those of other States, are reserved for a more complete history of the outbreak in the Annual Report.

NEW YORK.

Dutchess county.—Five western cattle died of Spanish fever at Millerton, where they were quarantined. The infection did not spread.

NEW JERSEY.

Hudson county.—A large number of Texas and Indiana cattle were brought into the cattle yards and abattoirs in our county last August, sick with Spanish fever. Our State agricultural society forbade any more being brought into the State; and those sick were quarantined, and after a thorough examination were put into rendering vats, and the yards and pens disinfected with carbolic acid. No disease has appeared since. Three inspectors were appointed by the State society, who quarantined all the suspected cattle on arrival; and when it proved sickness from any infectious disease they were killed and put in the rendering vats.

PENNSYLVANIA.

Westmoreland county.—A lot of western cattle were driven through this county last summer, stopping over night on a farm three miles south of Greensborough. Some eight or ten head took sick during the night, and were left with the farmer to be killed. The symptoms were said to be those of Spanish fever.

GEORGIA.

Chatanooga county.—This, or similar fever, has prevailed to a great extent; loss about 20 per cent.

Hall county.—Has existed to a certain degree. A strong decoction of the bark of the white walnut, given in quart doses, is said to cure 90 per cent. of those attacked. Correspondent has used it 20 years, and never failed.

Pulaski county.—A disease somewhat similar killed a number on one farm.

[There is a confusion of names of diseases in the south. From the statements of symptoms and remedies it is highly probable these Georgia cases were not the "Spanish" or splenic fever.—ED. REP.]

TEXAS.

Our *Lamar county* (Texas) correspondent gives as the result of his observations in Texas and other States, including Illinois, at the time of the greatest virulence of the disease there, that there is no such disease in Texas, or south of the latitude of Middle Tennessee or Arkansas. He mentions the fact that hundreds were herded for months on Grand Prairie, Arkansas, at the season of the highest excitement in Illinois, without disease among either Texas or Arkansas stock. The following points are indicated as the result of his observations:

1. That it did not show itself until the very hot weather that visited that section, although Texas cattle had come in nearly two months before.

2. That Texas cattle were free from any signs of disease, and improved rapidly on arrival.

3. That, although healthy, they left disease behind them; and all home cattle, feeding upon the same pastures, or drinking at the same fountains, were in danger of the contagion.

4. That removal to new pastures and clean water would stay the progress of the disease among those not yet affected by it.

5. That native cattle would not take the disease from running on new pasture, with other native cattle, although the latter might be suffering and dying with the disease.

6. That the disease, its mode of action and of communication, and the remedies, were mysterious.

Fayette county.—Spanish fever only prevails amongst unacclimated animals. A teaspoonful each, of spirits turpentine, copperas, and sulphur, is said to be a certain cure if given in time.

Walker county.—A few neighborhoods have been visited by Spanish fever.

ARKANSAS.

Independence county.—In the eastern part of the county for some weeks last spring.

KENTUCKY.

Carroll county.—Several cases of death from presence of a drove of Texas cattle.

MISSOURI.

Newton county.—Prevailed during the summer and fall. Loss not over 300 head.

McDonald county.—Five per cent. of all native cattle have been lost. Texas cattle do not suffer unless there is an admixture of more than one-half native blood. Remedies prove unavailing.

Butler county.—Has visited some portions of the county.

Clark county.—Three cases reported. Remedy used: a drench made by mixing half pound of Epsom salts with a strong decoction of peach-tree leaves—one quart of the latter.

Polk county.—In the eastern part of the county, in August, from the passage of Texas cattle through that section.

St. Louis county.—Fourteen hundred milch cows and 250 to 300 heifers and steers lost by this disease.

Bates county.—To some extent, but less than in years past.

Cass county.—Few losses this year, as diligent watch has been kept against droves.

Henry county.—Loss 200 to 300 head.

Montgomery county.—Forty-five head lost last autumn. Only three of those attacked recovered.

Benton county.—A few isolated cases.

Mississippi county.—Slightly; brought in from Cairo, Illinois, by Texas cattle. Loss 40 head.

Cedar county.—A few cases imported with southern cattle.

Dade county.—During the summer and fall, along the highways where Texas cattle stopped to graze; the loss was 25 per cent.

Hickory county.—To some extent, but no new facts noted.

ILLINOIS.

Champaign county.—Our correspondent says: "Spanish fever has prevailed in this county, commencing on the 27th day of July, 1868, and cattle have continued to die of the same disease up to January 1, 1869. In this township the loss is 90 per cent.; entire county, 75 per cent. It is a blood disease; the blood under a powerful glass proves this. It has been argued, and tried to be proven, that it is a disease not easily taken. I now have in my possession a large amount of evidence from good men showing it to be a disease very easily given. A number of cases can be given where the only exposure was by driving a short distance over the road where the Texas cattle had passed from tame pasture to barn lots, the natives being kept up all the time only when in transit from lots to pasture. Blood examined in the earliest stages of the disease shows a diseased condition of the same. As the disease progresses from day to day the blood, examined by a good glass, shows the gradual destruction of vitality, and at dissolution is a mass of putridity."

Clinton county.—Spanish fever among the cattle; loss 19 head. Eighteen head died of black tongue. Cure: pull the tongue out of the mouth, rub it hard with a brick, and then rub vinegar on it. Two applications sure cure.

Douglas county.—Forty head lost from Spanish fever in one neighborhood through which Texas cattle passed.

Iroquois county.—Spanish fever has prevailed.

Macon county.—No cases except those that came in contact with one lot of Texas cattle.

Massac county.—A few cases, supposed to be Spanish fever.

Pope county.—Spanish fever in one locality for a short time.

Morgan county.—A few drove cattle died, but more from ill-usage than Spanish fever.

Alexander county.—Spanish fever prevailed in Cairo, but did not get into the country.

Cook county.—Some Spanish fever in the south part of the county, from contact with cattle shipped to Chicago.

Effingham county.—Spanish fever killed a few cattle in one neighborhood where some Texas cattle were herded for a short time. Loss small.

Ford county.—Loss about 500 head; a majority of them cows.

Grundy county.—Spanish fever in one town; loss about 100 head.

Pulaski county.—A few deaths from the passing of Texas cattle.

St. Clair county.—A few head have died from supposed Spanish fever.

DuPage county.—One man lost 18 head by Spanish fever.

INDIANA.

Marion county.—About 100 head died of Spanish fever.

White county.—Some loss from Spanish fever.

Benton county.—From 400 to 600 head of native cattle have died from Spanish fever. In a neighboring county a herd of diseased Texas cattle were driven about eight miles along a road, and, the wind being from the south, cattle along on the north side of the road took the disease, without either being driven along the road travelled by the Texas cattle or drinking water that had been exposed in any manner. These facts induce the belief that the disease was communicated by the wind. The Texas cattle were taken right off the cars and driven along the road.

Hendricks county.—Spanish fever in a few places. Comparatively little loss.

Newton county.—Eight to 10 head died of Spanish fever, taken from a drove of Texas cattle driven along the road.

Lawrence county.—Considerable loss from Spanish fever along a road travelled by a drove of Texas cattle.

OHIO.

Hamilton county.—Very slight, and only among cattle that have come in contact with foreign stock.

Wyandot county.—Loss six head in two car-loads brought from Chicago.

Greene county.—Ten to 12 native cattle died. Disease taken from Texas cattle.

KANSAS.

Dickinson county.—Spanish fever has prevailed to a great extent. Loss over $6,000.

Republic county.—Ten head of oxen died of Spanish fever last fall, after feeding on the track of Texas herds. A few cases recovered.

Butler county.—Cases last summer and fall. Many of the Texas cattle have died here during the winter.

Wyandot county.—Six fatal cases in the fall; contact with Texas cattle.

DISEASES OF SWINE.

MASSACHUSETTS.

Bristol county.—Some hogs from western droves have had cholera.

PENNSYLVANIA.

Bradford county.—Some cases of hog-cholera have appeared. Loss, one in 300.

MARYLAND.

Montgomery county.—A few cases—not an epidemic.

Washington county.—A few losses have occurred.

Queene Anne county.—One-fourth have died. Tar fed in corn has stayed the disease in some cases.

VIRGINIA.

Spottsylvania county.—Less than 50 cases in the county.

Buckingham county.—Many hogs died from some unknown disease. The symptoms were stiffness of the joints, loss of appetite, enlargement of the glands of the throat, generally resulting in death by suffocation in a few days.

Patrick county.—A few cases.

Washington county.—Somewhat prevalent.

Tazewell county.—Loss one-third.

Rockbridge county.—Loss two per cent.

Henry county.—Loss one per cent.

Nelson county.—In some sections stocks have been reduced 50 per cent. in two years.

Roanoke county.—Much less severe than in 1866 and 1867. Loss 5 per cent.

Highland county.—A disease among hogs exists from which they die after lingering for months. They have difficulty in breathing and apparently a stoppage in the nose.

Prince William county.—In the southern part of the county one-tenth of the hogs died last fall.

NORTH CAROLINA.

Columbus county.—About 20 per cent.
Currituck county.—Some losses from what is called staggers.
Duplin county.—To an alarming extent; at least 33 per cent. destroyed. One man lost 51 out of 55. Many who usually fatten 50 to 100 did not save 20 head.
Forsyth county.—Loss 50 per cent.
Gaston county.—Average loss 15 per cent. On some farms 50 per cent.
Madison county.—Loss 25 per cent. last fall.
Moore county.—Considerable loss, supposed to be cholera.
Rutherford county.—In certain localities, killing nearly the whole stock. Most fatal among pigs. Average loss 25 per cent.
Surry county.—Loss 10 per cent.
Stokes county.—Loss 25 per cent.
Haywood county.—Loss two to three per cent.
Yadkin county.—Loss about 25 per cent.
Caldwell county.—Average loss 10 per cent.
Chowan county.—Loss about 5 per cent.
Randolph county.—A few deaths, supposed to be from cholera.
Beaufort county.—Loss three per cent.
Carteret county.—Loss 30 per cent.
Iredell county.—In the northern part of the county killed two-thirds of the swine.
Harnett county.—About five per cent. killed by disease of the throat, sometimes fatal in a few hours. A few cases of a disease which seems to affect the fore legs—the hogs being able to stagger only a few feet at a time.
Rowan county.—Has prevailed to some extent.

SOUTH CAROLINA.

Abbeville district.—Very destructive—average loss six to seven per cent.
York district.—Loss about 25 per cent.
Greenville district.—Large numbers swept off; in some sections 25 per cent.
Spartansburgh district.—Loss averages 5 per cent.
Chester district.—Extensively; two-thirds of the hogs destroyed.

GEORGIA.

Clinch county.—Principally among young pigs and shoats.
Early county.—None since 1864.
Murray county.—Attacks and kills young pigs only.
Walker county.—Has prevailed in certain localities for years; 90 per cent. of the hogs in the infested districts died. Raw cabbage given *ad libitum* is said to act not only as a specific, but also as a prophylactic.
Towns county.—Not so prevalent as formerly.
Jackson county.—To a considerable extent; loss heavy. Tar put into the animal's mouth, and cutting off the tail and ears is said to act as a specific. Pine tops boiled in sweet milk and used as a drench is also said to prove beneficial.
Pike county.—Prevails here.
Tatnall county.—Loss 75 per cent.
Walton county.—A few cases; loss trifling.
Spalding county.—To a limited extent.

White county.—Has continued fatally for eight years. No remedy
Emanuel county.—20 per cent. died.
Franklin county.—Loss 10 per cent. of entire stock.

ALABAMA.

Coosa county.—To a considerable extent, loss averaging 33 per cent.
Calhoun county.—Loss 25 per cent.
Shelby county.—Loss one-half entire stock.
Clay county.—Has prevailed but not extensively.
Randolph county.—Loss 20 per cent.

FLORIDA.

Leon county.—Only a few cases.
Suwanne county.—In a slight degree.

MISSISSIPPI.

Amite county.—Very slightly.
Lee county.—Has destroyed 50 per cent of crop. No remedy known.
DeSoto county.—Over the whole county; loss not less than 50 per cent.
Attala county.—Not extensively; many supposed cases are caused by eating green cotton seed.
Hinds county.—A few isolated cases.
Yazoo county.—In a marked degree.
Marion county.—Violently; loss 10 per cent. No remedy.

LOUISIANA.

Carroll parish.—To a marked extent; loss 20 per cent.
Tangapaho parish.—Slightly; loss trifling.

TEXAS.

Ellis county.—More than six per cent. of the stock lost by what was supposed by some at the time to be cholera, but is generally believed to have resulted from eating "cockle burrs." The symptoms were very much like those of cholera. Some cases were cured by doses of tar.
Henderson county.—To a very limited extent. Supposed cause, want of care and corn.

ARKANSAS.

Conway county.—Loss one per cent.
Independence county.—In the southeastern part of the county in September and October. Loss 10 per cent.
Lafayette county.—There are some cases every year in the latter part of summer and early fall, thought by some to be caused by over feeding on acorns and corn.
Monroe county.—Hog cholera prevails, but less than for several years.
Montgomery county.—Loss 25 head only.
Washington county.—Prevailed in January and part of February. Loss 10 per cent. of fattening hogs and 25 per cent. of the entire stock.
Yell county.—To some extent in certain localities.

TENNESSEE.

Hawkins county.—33 to 50 per cent. loss since December from hog cholera or disease called by that name. Many persons have lost their entire stock.

Hickman county.—Prevailed greatly in August, September, and October. One-third of the "killing hogs" and one-half the stock hogs died.

Monroe county.—Loss estimated at from 400 to 600 hogs, worth from $2,000 to $3,000. Some farmers have lost their entire stock.

Montgomery county.—Very heavy loss.

Polk county.—Loss 10 per cent.

Rutherford county.—Loss 40 per cent.

Sullivan county.—To a very limited extent.

Washington county.—Loss 10 per cent.

Robertson county.—Has prevailed but little for the last 10 months. For the six months previous to that period the loss was 33 per cent. Owing to high prices of hogs and abundance of corn, great attention was paid during the past winter to hogs. They have increased rapidly in numbers and are looking well.

Sumner county.—Loss 15 per cent.

Perry county.—Loss 5 per cent.

Warren county.—Raging to considerable extent at this time. In some localities whole stocks have been lost.

Marion county.—Loss about 5 per cent., much less than usual.

Bledsoe county.—Loss 5 per cent.

Williamson county.—Loss very great.

Lincoln county.—Loss considerable.

Smith county.—Loss 33 per cent.

Union county.—Loss 4,000.

Weakley county.—A small loss.

Bedford county.—Loss 20 per cent. Less prevalent and malignant than formerly.

Davidson county.—Loss 50 per cent.

Giles county.—Loss 15 per cent.

Greene county.—Prevails to an alarming extent.

Haywood county.—Loss 15 per cent.

Gibson county.—Loss 4 to 5 per cent.

Johnson county.—Considerable loss in portions of the county.

Jefferson county.—Loss 40 per cent.

Knox county.—Loss 40 per cent.

Meigs county.—Loss 10 per cent.

Obion county.—To a very limited extent.

Henry county.—To a very small extent.

KENTUCKY.

Graves county.—Prevalent.

Fayette county.—Principally confined to young hogs. Preventives are relied on rather than remedies. The course generally and successfully pursued here when the disease appears among a lot of hogs is to separate the well from the sick, and change to new beds, destroying the old beds by fire or otherwise. Dead animals are burned or buried. Frequent change of lots or fields is indicated as desirable, also the use of fresh clay in the beds as a disinfectant.

Clay county.—Prevalent for years. Large average loss.

Christian county.—About 25 per cent. loss.

Kenton county.—More or less prevalent for last 10 or 12 years. Loss last year, 7 to 10 per cent.

McCracken county.—10 per cent.

Ohio county.—Loss estimated at 5 per cent.

Oldham county.—Loss at least 5 per cent.

Carroll county.—Loss, from farm stock, one-sixth; from stock fed on slops at distilleries, at least one-third.
Henry county.—10 per cent.
Spencer county.—Has prevailed yearly since 1858. Loss 5 per cent.
Butler county.—Loss 5 per cent.
Hardin county.—Loss about 20 per cent.
Warren county.—Loss not over 5 per cent.
Meade county.—Very little since the fall of 1868.
Johnson county.—Loss light; not more than 10 per cent.
Hopkins county.—A pest for years. Loss 25 per cent.
Webster county.—In some localities. Loss about one-fourth.

KENTUCKY.

Boone county.—Very little. Stone coal in liberal quantity (say a peck per day to 20 hogs) is ascertained to be an efficient prophylactic. Hog raisers have used it with most satisfactory results.
Livingston county.—Pigs born six months after the mother has the cholera will inherit the disease. First time our correspondent's sows pigged after having had the cholera at least half the pigs died—some of them having reached 40 pounds weight.

WEST VIRGINIA.

Wyoming county.—Loss 50 per cent.
Kanawha county.—Loss 5 per cent.
Boone county.—Considerable loss.
Brooke county.—A few cases.
Morgan county.—Has prevailed to some extent the last three years.
Ohio county.—Loss 50 per cent.
Nicholas county.—Loss (from this or similar disease) 10 per cent.
Putnam county.—Has prevailed here for 8 or 10 years, and has gradually reduced the stock of hogs to less than half the number formerly raised; and the stock has degenerated. I have never known the cholera to attack hogs that were constantly and plentifully supplied with common salt.
Monroe county.—A loss of 20 per cent. in one or two sections; average, 5 per cent.

MISSOURI.

Maries county.—Loss, by cholera, one-third of the entire stock; most severe among the older animals; many farmers have lost all their hogs.
Holt county.—Very slightly; loss 3 per cent.
Clinton county.—A disease (though not known to be cholera) carried off 16 per cent. of the young hogs.
Jefferson county.—50 per cent. of the stock lost during the summer.
Saint Louis county.—Less loss than for many years, below 1 per cent.
Cass county.—Only in southeastern portion; loss, in entire county, 1 per cent.
Daviess county.—A few cases reported.
Howard county.—Very little cholera.
Livingston county.—To some extent; loss 3 or 4 per cent.
Morgan county.—Slightly.
Mississippi county.—Loss about 12 per cent.
Pemiscot county.—Prevailed during spring and summer; loss 25 per cent. of the entire stock.

Schuyler county.—To a limited extent; loss not more than 12 per cent. of last year's.

Scott county.—Not generally; small loss in some localities.

Callaway county.—A few cases, of doubtful genuineness, reported.

ILLINOIS.

Clinton county.—From 1 to 1½ per cent. loss.

Iroquois county.—Few cases—probably 1 out of 500.

Jackson county.—Hog cholera has prevailed to some extent.

Massac county.—A few cases of hog cholera.

Menard county.—Loss about 7 per cent.

Mercer county.—Loss 20 per cent.

Pope county.—Considerable loss in some localities; in one section the loss by death reached 20 per cent.

Williamson county.—Loss 10 per cent.; still prevalent.

Boone county.—A number of hogs have died, but no cases of cholera known.

Clay county.—A few cases of hog cholera.

Kendall county.—Loss about 20 per cent.

Lawrence county.—In some portions nearly all the hogs have died with cholera; its ravages more extensive since the middle of January.

Macoupin county.—Loss estimated at 25 per cent.

DeKalb county.—Not to any extent. Our pork-growers have concluded that fattening swine for many years upon the same ground has been the means of developing this disease, and now change them frequently.

De Witt county.—Many hogs have died of a disease called cholera; it is mostly confined to mothers and their pigs, and to shoats from 40 to 125 pounds weight. Some get weak all at once and shun their mates, burying themselves in litter, refusing to eat, breathing short and hard, have a cough, grind the teeth and froth at the mouth, while, at the same time, have no discharge from the bowels; others become stupid, have a bad cough, accompanied with disagreeable discharges from the bowels, and gradually pine away and die; others, again, are taken as with the staggers, whirling around until they fall, their eyes seem to be set in their heads and have an unnatural wildness of look: this last class, also, have a severe thumping in the sides.

Franklin county.—About 25 per cent. loss; still prevalent, but to less extent.

Knox county.—Loss, about 500 in the county.

Lee county.—Hog cholera little known; loss from other diseases about 3 per cent.

Logan county.—Loss 10 per cent.

Macoupin county.—Loss probably 5 per cent.

Rock Island county.—At one distillery 50 hogs died in one week.

Stark county.—To less extent than in former years; loss not one-fourth as great.

Warren county.—A few cases in one township.

White county.—Loss about 5 per cent.

Adams county.—To some extent.

Pike county.—To limited extent.

Henderson county.—But little the past year. If hogs are fed once in two weeks, regularly, with corn-cob charcoal and salt, they will not be troubled with cholera.

INDIANA.

Spencer county.—Loss 3 per cent.
Boone county.—In some localities; loss about 300 head, value $5,000.
Union county.—A few cases; not one per cent.
Grant county.—Prevalent to a great extent last fall.
Wayne county.—Loss $10,000 to $12,000.
Benton county.—To limited extent; loss not more than 100 hogs.
Clinton county.—Slightly, in one neighborhood; loss about 100 head.
Howard county.—Loss about 50 per cent.; still prevalent.
Johnson county.—Loss 20 per cent.
Carroll county.—To a limited extent.
Fayette county.—Loss 10 per cent.; still prevalent.
Lawrence county.—Prevalent throughout the county; loss immense—whole stocks being swept away in some instances; the heaviest loss among fattening hogs.
Marion county.—Loss 10 per cent.; 100 per cent. greater among pigs than among hogs.
Greene county.—Loss small compared with former years.
Posey county.—Loss about 50 per cent.

OHIO.

Warren county.—From 3 to 5 per cent. loss among fattening hogs.
Jefferson county—To some extent. Loss 10 per cent.
Greene county.—Loss 1 in 30 perhaps.
Butler county.—Loss not over 1 per cent.
Seneca county.—Hogs more or less troubled with long, white worms in their intestines, 6 to 22 inches long, the size of pipe stems. Salt has no effect upon them.

MICHIGAN.

Berrien county.—A few cases; supposed to be hog cholera.

WISCONSIN.

Grant county.—But few cases in this county.
Iowa county.—Some farmers have lost 10 to 20 hogs from a disease commencing in the throat, with weakness in the fore legs.
Washington county.—A few cases of hog cholera.

IOWA.

Dubuque county.—Only two or three cases.
Lucas county.—One man feeding several hundred lost 170 within a short time.
Appanoose county.—Loss, 7 per cent. One farmer lost 60 out of 85. Those who feed stone coal freely have thus far been exempt.
Buchanan county.—A few cases.
Louisa county.—Loss, 5 per cent.
Cedar county.—About 1 per cent. loss.
Jackson county.—A few very fat hogs have died from suffocation, the throat showing signs of inflammation. One farmer lost 30 pigs by what he called diarrhœa; in my opinion, dysentery, from feeding oats.
Des Moines county.—Not over 1 per cent.
Page county.—A few cases in one lot.
Taylor county.—10 hogs found dead, it is feared caused by cholera.

DISEASES OF SHEEP.

MAINE.

York county.—A sheep distemper is noticed. Symptoms, wheezing cough, running at the nose, and gradual pining away. The lambs did not grow well last season, and the growth of wool was deficient. A wet season is one of the causes assigned for the malady. Swellings upon the throat were noticed in some cases.

Franklin county.—A few cases of foot-rot.

Kennebec county.—A disease commenced with lower portion of the head and throat, loss of appetite, skin and flesh turn dark green, and death ensues in two to four days. Decomposition is rapid and the odor "fearfully fetid." Scanty pasture in the fall and poor condition are assumed to be predisposing causes. Merinoes are principally affected; as their grades run with coarse-wool blood the liability to disease decreases.

VERMONT.

Orange county.—Some foot-rot exists.

Addison county.—One-fourth of the flocks are more or less affected with the foot-rot or "fouls," which is not so contagious as the foot-rot formerly was.

Windsor county.—Loss heavy from debility; some flocks lose half, in some cases nearly all.

NEW HAMPSHIRE.

Sullivan county.—Foot-rot prevails extensively, especially among Merinoes. Coarse wools are healthy, and in better demand.

Merrimack county.—A disease called "water garget" has been slightly prevalent.

MASSACHUSETTS.

Berkshire county.—Foot-rot and scab have probably affected full a third of the flocks. Both diseases were brought into the county by a flock from the north fifteen months ago.

Hampden county.—Three-tenths of the lambs have died from want of natural food; many of the mothers have little milk.

NEW YORK.

Oneida county.—Scab affects one-tenth of the sheep.

Queens county.—Scab prevails. One wool grower with whom the tobacco wash failed, uses the following with good results, rubbing in the mixture well, and repeating in four or five days if necessary: sub-carbonate of potash, one ounce; lac sulphur, two ounces; oil of tar, one ounce; whale oil, one pint.

Chautauqua county.—Foot-rot. Some have sold entire flocks to get rid of it.

Dutchess county.—A limited amount of scab and rot.

Ontario county.—A sheep panic exists, and foot-rot prevails.

Steuben county.—Losses 15 per cent. from neglect and low feeding.

Allegany county.—Six-tenths of the sheep have foot-rot; some scab is reported.

Tompkins county.—Grub, rot and other diseases.

NEW JERSEY.

Camden county.—Foot-rot has depreciated the value of sheep 10 per cent.

PENNSYLVANIA.

Lawrence county.—Scab among poorly kept sheep.
Mercer county.—Foot-rot and scab prevail extensively.
Erie county.—Foot-rot has reduced flocks one-third.
Tioga county.—One flock in 20 is afflicted with scab.

MARYLAND.

Kent county.—A few cases of scab.

VIRGINIA.

Fairfax county.—Foot-rot among fine wool sheep—five to ten per cent.
Roanoke county.—Several hundred have been killed by wolves; the county is paying $25 each for wolf scalps.
York county.—About half the sheep have scab; 20 per cent. of the lambs were lost in January and February.
Fauquier county.—Foot-rot discourages sheep husbandry.

NORTH CAROLINA.

Currituck county.—Rot is the prevailing disease.
Union county.—Rot; loss two to three per cent.

GEORGIA.

Towns county.—Foot-rot; loss 10 per cent.

ALABAMA.

Conecuh county.—"Dirty tail," caused by negligence; loss 10 per cent.
Randolph county.—Losses from foot-rot 10 per cent.

FLORIDA.

Liberty county.—"Sore-head" has existed, but not fatally.

MISSISSIPPI.

Amite county.—The rot, from heavy rains and insufficient shelter, loss 10 per cent.
Attala county.—Loss 10 per cent. from rot.
Yazoo county—Rot to a large extent.

TEXAS.

Burnet county.—Fifty per cent. of lambs lost by heavy rains, which cause the growth of sour grasses and over-growth of ranges. Remedy: frequent salting. Scab has prevailed to some extent.
Blanco county.—Scab, causing a decrease in wool clip last spring of 50 per cent. This season there will be an increase of 20 or 30 per cent.
Burleson county.—Nearly every flock affected with "scab." The disease was brought from the western States in 1860.

Collin county.—Scab; loss 10 per cent.

Ellis county.—Scab, but it is disappearing from flocks that have received even a moderate share of attention.

Fayette county.—Scab is the great scourge, and tobacco the most effectual remedy.

Gillespie county.—Scab; but no losses.

Kendall county.—Scab is prevalent, 50 per cent. being affected.

Nueces county.—Scab; not a flock in the county but is more or less affected.

Travis county.—Scab to a very limited extent.

Victoria county.—Some scab; losses not great where flocks have been regularly sheared.

ARKANSAS.

Madison county.—Distemper or rot slightly; loss one per cent.

TENNESSEE.

Meigs county.—Rot; attributed in great measure to the confinement of sheep in close quarters on account of dogs.

Monroe county.—Loss from rot five per cent.

Polk county.—Loss from rot 15 per cent.

Sullivan county.—Catarrh is prevalent.

KENTUCKY.

Henry county.—Foot-rot has caused considerable loss among Merinoes.

Whitley county.—Rot among sheep wintering in the mountains and sheltering under cliffs.

WEST VIRGINIA.

Tucker county.—Grub and rot; loss 20 per cent.

Morgan county.—Considerable mortality among sheep imported from other districts, especially of improved breeds. Cause not clearly understood, but by some asserted to be neglect and scanty food, which are better endured by native animals.

Nicholas county.—No special disease; but during fall and winter sheep have been unhealthy.

Rot is mentioned as prevalent in a greater or less degree in Lincoln, Barbour, Preston, Braxton, Clay, Ohio, and Monroe counties.

MISSOURI.

Texas county.—Foot-root among Merinoes brought from Ohio, but diminishing; one ounce blue vitriol diluted with two ounces vinegar recommended as a wash for the hoofs.

Clark county.—Scab; brought from Ohio; but not much loss.

Lewis county.—Probably 33 per cent. of the flocks affected with scab.

Moniteau county.—Scab, brought from Pennsylvania and Ohio, with flocks of Merinoes. The rigid separation of flocks has checked it.

Lincoln county.—Scab or "pelt rot" to limited extent.

Montgomery county.—Foot-rot on the increase, and eight per cent. of the stock affected with scab.

Benton county.—A few flocks affected greatly by scab. One farmer who neglected the usual preventives and remedies lost 300 out of a flock of 400. The foot-rot has also prevailed, in some cases 40 dying in one flock of 165. The disease brought from Ohio.

Livingston county.—Twenty-five per cent. of the sheep have either foot-rot or scab, which were brought to the county by drovers. Loss from those diseases and neglect, 10 per cent.

Marion county.—Scab has prevailed to a very limited extent.

Adair county.—A few losses in some flocks by scab, and some foot-rot.

Callaway county.—Scab in some localities, but only causing loss of wool.

Scotland county.—Foot-rot to slight extent.

Shelby county.—Scab in some neighborhoods, causing great loss of wool, but few deaths.

Dekalb county.—Scab in several flocks, but little loss except in wool.

Ralls county.—Last spring almost every flock was affected with scab. Loss, eight per cent. Disease imported with Michigan Merinos; many thousands of which have been brought into the county, but most of them have perished. Native stock, Southdowns, Cotswolds, and their crosses, now healthy.

ILLINOIS.

Clinton county.—About two per cent. loss from scab. Tobacco cures it.

Iroquois county.—Scab; loss one-tenth.

Madison county.—Nothing but scab in roaming flocks.

Menard county.—A few flocks affected with scab.

Mercer county.—Scab and foot-rot exist in probably five per cent. of the flocks in the county.

Winnebago county.—Foot-rot and scab in many flocks. A flock of 150 lambs, dropped in May, did well until a few days after the hot term in July, when many of them were taken with severe purging, as in cholera; a few, without purging, wandered around in a small circle, nibbling grass and dirt. All of the latter and most of the first cases died in a few hours after being attacked. They commenced dying at the rate of two or three a day the first week, increasing to four or five a day the third week, when they were taken from the ewes. Eighty were driven to another pasture; the remaining 24, affected with the appearance of dysentery, were put in the sheep-barn and treated for that disorder. Of the latter nine died; of the former, but one. None of the sheep were affected.

Kendall county.—Foot-rot and scab; five per cent. of the flocks affected. Wolves have destroyed five per cent.

Lake county.—Grub in the head more severe than usual, and very fatal, at least one-fifth dying of it.

Scott county.—Foot-rot and scours, about five per cent.

De Witt county.—Large numbers have died with the scab. Farmers are adopting the plan of killing all the infected ones, and, after taking off the pelt, feed the carcass to hogs. One-fourth of the sheep have been thus disposed of.

Grundy county.—Foot-rot and scab; loss about 20 per cent.; 50 per cent. affected.

Lee county.—Foot-rot, scab, and grub; the former having damaged the flocks more than all the other diseases combined, and will shorten the wool crop of the county at least one-third, and the flocks one-fourth to one-third.

Logan county.—Few flocks free from the scab. Sheep on the decline in this county.

Putnam county.—Heavy losses from neglect.

A number of counties report the existence of scab, foot-rot, and grub in the head to limited extent.

Adams county.—Nothing except ticks.

INDIANA.

Stark county.—Large number died, 50 per cent., cause unknown.
Benton county.—Scab and foot-rot in most flocks in the northern part of the county.
Cass county.—A few cases of foot-rot.
Newton county.—Scab and foot-root, bad; grub more fatal than either.
La Grange county.—Foot-rot prevalent, but not fatal.
Warren county.—Few large flocks have escaped the scab, and none the foot-rot.
Marion county.—Some foot-rot, which is new here.
Greene county.—Considerable losses by neglect.
White county.—Scab and foot-rot; extent, one-tenth.
Jasper county.—Foot-rot in all large flocks.

OHIO.

Stark county.—One-third of the large flocks in this end of the county attacked with a disease resembling typhoid-pneumonia, which carried off one-fourth of the flocks attacked. Foot-root in one-quarter of the flocks; few cases of scab.
Hancock county.—Foot-rot causes considerable trouble.
Henry county.—Two-tenths loss from neglect, and sheep in poor condition in the fall.
Marion county.—Foot-rot prevails extensively.
Tuscararas county.—Foot-rot and pale skin have prevailed, causing many sheep to be pelted in the fall; and many died during the winter. Decrease in the county fully one-third.
Lorain county.—Foot-rot, confined to fine wool sheep; two-thirds of flocks affected.
Lucas county.—Foot-rot and grub, the former in fine wool sheep.
Mahoning county.—Foot-rot prevails generally. Scab mostly disappeared.
Putnam county.—Foot-rot, 10 per cent.
Shelby county.—Grub, 10 per cent.
Morrow county.—A great many have died—one-fourth to one-third of the flock—many of them apparently in good order, mostly last spring's lambs. Mortality greatest when the drought was most severe last summer and the grasshoppers most abundant, and many think the excrements from the latter on the grass was poisonous. Sheep apparently in health drop over and die in a day or two.
Knox county.—Paper skin and foot-rot.
Washington county.—Foot-rot more prevalent than usual.
Vinton county.—Ten per cent. of sheep affected by the grub.
Hardin county.—Foot-rot; one in 500.
Harrison county.—Foot-rot; probably three-fourths of all the flocks affected, to the extent of one-fifth each. Most of them slightly.
Jefferson county.—Paper skin; confined chiefly to yearlings. Loss about five per cent.
Perry county.—Foot-rot; perhaps one-tenth.
Carroll county.—Foot-rot, paper skin, grub; 20 per cent. pelted or died of disease.
Erie county.—Foot-rot and neglect.
Fulton county.—A distemper has prevailed among sheep. We find no remedy. It commences with falling off rapidly in flesh, a loss of appetite, extreme weakness, and usually a dysentery sets in three or four days

before the sheep dies. They live about two weeks after being attacked. There seems to be an inward fever, with constant craving for water. From 30 to 50 per cent. die when attacked.

Union county.—No disease, but five per cent. have died from exposure and debility.

Muskingum county.—Grub and foot-rot. The loss by pelting sheep thus affected has reached 25,000 head. Returned for taxation in 1868, in the county, 220,409 head.

Medina county.—Foot-rot, to the extent of 50 per cent. of the whole.

MICHIGAN.

Jackson county.—Foot-rot and scab. Most of the diseased sheep slaughtered.

Macomb county.—About two-tenths slaughtered.

Berrien county.—A few flocks troubled with foot-rot.

Ottawa county.—Scab in about one-fourth of the county. Some died; some sold at low prices, and many killed for pelts and tallow; whole flocks were thus disposed of.

Washtenaw county.—Scab and foot-rot.

WISCONSIN.

Walworth county.—Foot-rot the most destructive; some cases of goitre.

Winnebago county.—Loss from neglect perhaps one-twentieth.

Eau Claire county.—"Hollow belly," one-tenth.

Green Lake county.—No disease, but more have died than usual.

Juneau county.—Loss from neglect and insufficient food.

La Fayette county.—Many sheep lost by neglect from feed and dogs; at least two-tenths.

Calumet county.—Loss of 60 out of a flock of 100. The disease appeared in ulcers, which reached the intestines. The heart was also diseased.

MINNESOTA.

Blue Earth county.—Grubs have been fatal in many instances.

Steele county.—Scab; few have escaped.

Nicollet county.—A few cases of grub, scab, and foot-rot; perhaps 4 per cent.

Stearns county.—Scab, to a limited extent.

Fillmore county.—One flock, fat last fall, have declined in health, the wool has dropped off; many have died, and it is thought that all will die.

Houston county.—Our correspondent had several cases in his flock of sores under the shoulder, in one or two instances involving face and legs, emitting watery matter and a noisome odor. One died after suffering two years. Sulphur is a partial remedy.

IOWA.

Keokuk county.—Scab has destroyed 20 per cent. of the sheep of this county.

Lucas county.—Nearly all the sheep in this county have the scab.

Appanoose county.—Scab; loss, 5 per cent.

Buchanan county.—Large loss from scab in the southeast part of the county.

Jasper county.—Twenty-five per cent. have either scab or foot-rot.

Louisa county.—Foot-rot and scab; half our flocks affected by the latter.

Cedar county.—Scab and foot-rot to the extent of one-twentieth.
Madison county.—One-tenth affected by scab, caused by tobacco wash.
Page county.—Loss of 200 in one flock last fall.
Story county.—Thousands have died of scab; scarcely a healthy sheep.
Marshall county.—Many have died from severity of the winter.

DISEASES OF HORSES.

MAINE.

Piscataquis county.—Rare cases of fever.

VERMONT.

Grand Isle county.—The "ordinary horse distemper" is slightly prevalent.

NEW YORK.

Albany county.—Cases of typhoid-pneumonia are reported.
Chautauqua county.—A distemper among colts, not generally fatal.
Tioga county.—A few deaths from disease of the kidneys; attributed to hard (lime) water.

NEW JERSEY.

Cumberland county.—Losses have occurred from blind-staggers, confined to horses pastured on the borders of marshes or turned out at night.

PENNSYLVANIA.

Wayne county.—Many valuable horses have died of lung fever.
Montgomery county.—Two cases of lung fever, both caused by excessive driving and neglect in leaving them in the cold without covering. Horses from the west are subject to this disease after standing three or four days in the cars in cold weather.

DELAWARE.

Kent county.—A farmer in the vicinity of Dover (Timothy Slaughter) lost six horses from an unknown disease, the symptoms similar in some respects to "strangles." Four of his horses died in 24 hours after the first attack, another within a week, and the sixth and last in less than a fortnight. Mr. Slaughter is a careful farmer, and has succeeded well with stock. The stable in which the horses were kept is a new building, whitewashed both inside and out.

MARYLAND.

Talbot county.—A disease exists called blind-staggers, probably cerebro-spinal meningitis.

VIRGINIA.

Botetourt county.—Glanders is noticed. In one case of the disease it appeared to be communicated to the owner and also to a colored man, both of whom died after great suffering.

Nelson county.—Glanders.
Highland county.—Some cases of gleet and also of staggers.
Montgomery county.—Fears are expressed that glanders will become general.
Prince William county.—Some cases of glanders.

NORTH CAROLINA.

Gates county.—A few cases of blind staggers.
Camden county.—Staggers and lung-fever, a few cases.
Perquimans county.—Some cases of staggers, generally fatal.
Greene county.—Several fatal cases of glanders among mules.
Montgomery county.—A few cases of glanders among mules—all fatal.
Haywood county.—Distemper has been more fatal than usual.
Yadkin county.—A few cases of glanders.
Chowan county.—Lung fever; loss great in some localities.

SOUTH CAROLINA.

Georgetown District.—Blind-staggers prevalent. Remedy: 1st. Bleed largely from the neck; 2d. Stimulating clysters of salt, thin gruel, and warm water, injected by a large horse syringe every day; 3d. Counter irritation over the entire forehead, by blistering with boiling water, from the spout of an ordinary tin coffee pot, the eye being protected by a flannel roller, closing the lids firmly, and pouring the water in a small stream; 4th. The bicarbonate of soda internally, two ounces at a dose, in a quart of lukewarm water every six hours. Over one and a half pounds were administered (from a bottle in the ordinary manner of drenching) with a view to its defibrinizing effect upon the blood.

GEORGIA.

Walker county.—Glanders, received from army horses at close of war.
Telfair county.—Staggers to a limited extent.
Morgan county.—Bots kills more horses here than all other diseases combined.
Floyd county.—Blind-staggers prevails, supposed to be caused by feeding on unsound corn.
Pike county.—Larger number than usual died from blind-staggers.
Troup county.—Staggers has prevailed.

ALABAMA.

Macon county.—Some deaths from glanders.
Morgan county.—Cases of blind-staggers.
Randolph county.—Blind-staggers and sleepy-staggers, loss five per cent.

FLORIDA.

Suwanne county.—Blind-staggers prevailed fatally.

MISSISSIPPI.

Tippah county.—Blind-staggers unusually fatal.
De Soto county.—Many deaths from blind-staggers.
Washington county.—Mules and horses died from charbon; loss of former from 30 to 40 per cent.

Yazoo county.—Charbon largely over whole county; loss in the swamp region 75 per cent. of mules and horses.

LOUISIANA.

Carroll parish.—Fatal cases of blind and sleepy-staggers; an insufficient quantity of healthy food is supposed to cause the former, and small grass, with a depraved condition, produces the latter.

East Feliciana parish.—A few cases of glanders.

Tangapaho parish.—Blind-staggers more fatal last summer than usual.

Morehouse parish.—Many mules and horses died from blind-staggers and yellow-water.

Tensas parish.—Charbon made sad havoc; all the first cases died.

TEXAS.

Atascosa county.—The "loin disease," slightly.

Ellis county.—A few cases of glanders; also a disease called "loin distemper," in one section of the county, which carried off many horses. The animals attacked by it begin to droop, and finally give down in the loins and die.

Henderson county.—A few cases of distemper, but not fatal.

Houston county.—A very fatal disease to some extent, but its name is unknown.

Rusk county.—Blind-staggers, or inflammation of the brain.

Red River county.—A few cases of blind-staggers.

Travis county.—A disease appeared amongst cavalry horses last spring, which was successfully treated by giving calomel, oil, and quinine, in their order.

ARKANSAS.

Desha county.—"Charbon" carried off a few horses and mules.

Drew county.—A few losses by blind-staggers; supposed cause, feeding unsound corn. Successfully treated by drenching with a solution of camphor in brandy, and blistering over the brain. Twenty-five per cent. of those affected recovered.

Clark county.—Blind-staggers; fatal among horses and mules fed with worm-eaten corn.

Independence county.—Blind-staggers prevalent in November and December.

Madison county.—Blind-staggers, or inflammation of the brain. Five per cent. affected, half of which die.

Monroe county.—Blind-staggers prevalent; probable cause, feeding damaged corn.

Montgomery county.—Considerable loss from blind-staggers. Cause stated, "rotten corn."

Phillips county.—Many cases of "charbon," or equine erysipelas; ten per cent. fatal.

Union county.—More horses and mules than usual have died from diseases not reported.

Washington county.—Blind-staggers; loss two per cent.

TENNESSEE.

Haywood county.—Quite a number of horses and mules have died from blind-staggers, caused by eating worm-eaten corn. Losses from a similar cause are reported from Hardeman and Rutherford counties.

KENTUCKY.

Laurel county.—Glanders is prevalent.
Metcalfe county.—Glanders introduced by army horses.

WEST VIRGINIA.

Lewis county.—A disease among yearling colts; nature unknown.
Raleigh county.—"Distemper."
Monroe county.—In one or two neighborhoods a distemper similar to glanders, not fatal, but often rendering the horse useless. The disease has existed in the county for ten or twelve years.

MISSOURI.

Worth county.—Lung fever; very fatal.
Lewis county.—A few cases of distemper, or strangles, amongst colts, last fall.
Stone county.—Two cases of glanders reported.

ILLINOIS.

Clinton county.—From 40 to 50 abortions of mares, believed to have been caused by exposure.
Winnebago county.—A number of horses have died of lung fever.
Pope county.—A few cases of glanders.
Boone county.—Distemper prevailing, and quite severe.
De Witt county.—Distemper the only disease; principally confined to young stock.
Woodford county.—About 100 horses carried off by lung fever last winter.
Champaign county.—A few horses have died suddenly, and in a few instances the singularity of the cases has caused alarm.

INDIANA.

Warren county.—The common distemper only. The glanders prevailed in one locality, but was arrested by killing those infected.

OHIO.

Geauga county.—No disease but common distemper.
Lucas county.—An unusual number have died from something resembling colic.

MICHIGAN.

St. Joseph county.—One or two cases of what is called distemper.
Leelenaw county.—Many cases of distemper. Have heard of but one death.
Barry county.—Only disease, wind colic, from feeding new corn.

WISCONSIN.

Rock county.—Distemper unusually severe.
Polk county.—A great many horses have died of distemper.
Dunn county.—A great many horses have died of lung fever.

MINNESOTA.

Wright county.—The distemper has prevailed to some extent, but not fatally.

Monongalia county.—Distemper; several colts have died.

Chisago county.—Many cases of what farriers call diphtheria. It commences by dryness of throat. The horse will hack and cough, and soon breathe short and quick, as if inward fever had set in. Unless immediate relief is given death is certain.

LeSueur county.—Distemper and putrid sore throat have affected 20 per cent. of the horses.

Watonwan county.—Quite a number of horses and colts have been attacked with a disease resembling diphtheria. About one-third of those attacked have died. The animal is suddenly attacked with soreness of the throat, refusing food and drink, with inflammation of the submaxillary glands; a discharge from the nostrils, first yellow, then green and then white, in the same case; eruptions on nose, legs, jaws and neck.

Morrison county.—Five or six cases of lung fever reported.

Stearns county.—Lung fever has prevailed to an alarming extent, fatal in many cases.

Wabashaw county.—Distemper has been prevalent.

IOWA.

Sac county.—A number of horses affected by a chronic inflammation of the liver.

Clinton county.—Many cases of distemper, a few fatal; also a few cases of lung fever.

Monona county.—Putrid distemper—a severe run last fall; a few deaths.

Marshall county.—A disease prevailed last spring that was fatal in almost every case. It seemed to originate from local causes.

Pocahontas county.—Several horses attacked by a kind of distemper. The animal first droops his head, and appears unable to move, while the muscles draw convulsively around the chest, until the horse dies from sheer exhaustion. The best remedy is rosin and sulphur internally.

KANSAS.

Republic county.—A few cases of glanders.

Woodson county.—Several deaths from distemper among colts.

NEBRASKA.

Merrick county.—A few cases of distemper and of glanders.

Pawnee county.—A few horses from distemper.

Cass county.—Distemper only.

CONDITION OF STOCK.

Notes of stock condition might be presented from a thousand counties, many of them interesting and suggestive, most of them of a tenor indicated in the general remark at the opening of this report. To bring this exposition into reasonable limits, answers to questions 7, 8, and 9, relative to the condition of cattle, of sheep, and comparative losses in wintering, will not be presented in detail.

The inhumanity disclosed in reports of losses from "want of shelter," from "starvation," "small quantity of food," are sickening and disgusting to one possessed of a single kindly impulse. There is no portion of the country where shelter and feeding are not requisite at times;

in Texas, where cattle grow and thrive by millions, are places where, during the present season at least, "fully 20 per cent. die in the latter part of the winter and early spring from poverty." It is gratifying to remark amid the general neglect of this latitude, that in one county in Georgia "those that have been housed look well," and that in another "they are better than usual from being cared for." Passing by the returns suggestive of so many unpleasant reflections, and looking to the more encouraging indications furnished in these reports, items like the following are examined with pleasure, and a lack of space only prevents their multiplication:

Orleans county, Vt.—A large quantity of western corn is being fed, as hay is scarce. This will keep the condition of stock good.

Norfolk county, Mass.—Owing to a mild winter, good supplies of hay, and the encouragement given to milk production, stock is in better order than for many years. Our correspondent, who is secretary of the Milk Producers' Association of Massachusetts and New Hampshire, attributes the improvement in good part to the organized effort, meetings, and discussions of the association.

Westchester county, N. Y.—Cattle wintered better than for several years. Farmers are building better stables and taking better care of their stock. Many are getting machinery and fixtures for cutting and cooking food.

Warren county, N. Y.—Our farmers are learning that it is better to feed their grain than to sell it, and they are ashamed to have their cattle look as poor and weak in the spring as was too common a few years ago.

As to sheep, a permanent cause of their poverty of flesh and liability to disease is indicated in this paragraph:

Addison county, Vt.—Flocks have wintered well, except where neglected by wool-growers, disgusted with their business in consequence of the maltreatment by Congress in postponing the tariff, and giving importers one year to flood our ports with foreign wool, thereby destroying the profits of wool-growing.

REDUCTION OF NUMBERS OF SHEEP.

MAINE.

Cumberland county.—A considerable number of sheep have been killed for pelts and tallow; the meat generally being sent out of the State in a frozen condition.

Franklin county.—Sales of Merinoes were made last fall to be killed for hide and tallow by farmers becoming interested in mutton breeds.

Somerset county.—One-fourth have been sold.

NEW HAMPSHIRE.

Rockingham county.—Stocks have been reduced by sales for the local meat markets.

Belknap county.—Probably one-fourth have been killed for their pelts and tallow.

VERMONT.

Orange county.—The best wool growers "hold on;" some have sold one-half, some three-fourths, and a few have sold all.

Orleans county.—All sheep and lambs (fine wool) that drovers would buy were sold for market last fall, and 25 per cent. of the remainder were sold to be killed for their pelts and tallow.

Washington county.—One-fourth have been killed for pelts and tallow.

MASSACHUSETTS.

Berkshire county.—Probably one-third of the flocks of last year have been sold or slaughtered; in some cases the prices were scarcely more than the value of the pelts.

Norfolk county.—The few sheep killed are well fattened and sold for choice mutton.

NEW YORK.

Oneida county.—Ten per cent. have been pelted or shipped off.

Chautauqua county.—Many sold their sheep at the price of their pelts—75 cents to $1 50 each.

Genesee county.—Decrease of sheep 30 per cent.; some sold to leave the State; some for pelts and tallow; two or three thousand for the latter purpose in the town of Pembroke. Fewer lambs raised than usual.

Ontario county.—Sold for pelts; the object is to get rid of sheep.

Onondaga county.—Perhaps one-fourth have been sold; no such destruction has occurred in 20 years previously.

Niagara county.—At Suspension bridge 5,000 have been killed for hide and tallow.

Seneca county.—Flocks have been culled closely, and the refuse sold for pelts and tallow. Some keep them in good condition, and sell for mutton. William Dunlap kept 1,500, sheared and sold the wool at close of winter, and afterwards the mutton, and saved money by not starving the animals and selling for their pelts.

Steuben county.—Reduction, 20 per cent.

Tompkins county.—The number diminished 15 per cent. in two years.

PENNSYLVANIA.

Butler county.—One-third of last year's flocks have been sold. Wool will not pay here at less than 60 cents per pound.

Lawrence county.—So great has been the destruction that mutton has sold for 25 cents per quarter all winter.

Mercer county.—Many slaughtered; some have sold 75 per cent. of their flocks.

Westmoreland county.—Large numbers sold to drovers, principally for eastern markets.

MARYLAND.

Kent county.—None killed for pelts, but two-thirds of the stock is sold yearly to butchers. Fat sheep are sometimes exchanged in the autumn for poor ones; sometimes obtaining two or three for one.

VIRGINIA.

Cumberland county.—Formerly there were 5,000 sheep; now not 500. The diminution is charged in large measure to the plundering habits of freedmen.

Bedford county.—Some sales for pelts and tallow are noticed.

GEORGIA.

Telfair county.—Thirty-three per cent. sold for mutton.

Stewart county.—Not raised on account of dogs; 20 dogs to one sheep here.

Cobb county.—A few sold for pelts and tallow.

Hancock county.—Occasionally sold to butchers; number reduced 33 per cent. since 1861.

Troup county.—A large number sold for home consumption.

MISSISSIPPI.

Attala county.—No care taken of sheep; considered almost worthless; sold from 75 cents to $1 per head.

TEXAS.

Blanco county.—About 600 head sold for mutton.
Kendall county.—One small flock of fine Merinoes were sent to Mexico for the purpose of introducing improved stock and creating a market for them.
Walker county.—About 30 per cent. sold to drovers for market.

TENNESSEE.

Lincoln county.—Among droves sold for mutton, numbers have been sent to Huntsville, Alabama.
Greene county.—Number sent to southern markets estimated at about 400.

KENTUCKY.

Fayette county.—Large numbers sent to market for mutton.
Lincoln county.—More than usual are sent to market for mutton.
Greenup county.—About four-tenths have been sold to be killed for tallow and pelts or to be sent out of the State.

WEST VIRGINIA.

Harrison county.—Stocks are being sold off; sheep husbandry is unpopular; preference is given to raising cattle and horses.
Ohio county.—Large numbers have been killed for their pelts and tallow; reduction from this cause 40 per cent.
Tyler county.—Four hundred sold out of the State for mutton.

MISSOURI.

Worth county.—Twenty per cent. sold for mutton, tallow, &c., mostly within the State.
Sullivan county.—Three-fourths of all the sheep sold have been for pelts, tallow, &c.
Miller county.—The few sales made were for pelts and tallow.
Buchanan county.—Sheep raising on the decline, but farmers not ready to sell at a sacrifice, prices ranging from $1 50 to $3.
Jefferson county.—None sold for pelts and tallow. Many farmers have bought and others are increasing their stock.
Lewis county.—In the western part of the county several hundred killed last fall for pelts and tallow, and some thousands driven from the State, principally for mutton.
Montgomery county.—Only such as are too old to winter well.
Osage county.—Twenty-five per cent. of the stock sold to St. Louis butchers.
Pemiscot county.—Forty per cent. of the sheep sold out of the State for mutton.
Adair county.—Not more than 1,000 head thus disposed of.
Callaway county.—None sold but at good prices.

Hickory county.—Sheep have commanded average prices; and there is a considerable demand for stock sheep.

Mercer county.—Twenty per cent. sold for Chicago markets.

Ralls county.—The few of the Michigan Merinoes which survived the importation into the county were thus disposed of.

ILLINOIS.

Clinton county.—Fifty per cent. more killed for home consumption than usual.

Macon county.—Four-tenths of the sheep have been disposed of.

Madison county.—Some small flocks killed for meat, because found unprofitable.

Menard county.—Number reduced three-tenths by slaughter and shipment for mutton.

Mercer county.—At least 20 per cent. of the sheep have left the State. Everything that would make mutton has been sent to market.

Sangamon county.—Many thousands sold at about the worth of pelt and tallow, to be driven to Missouri and Kansas.

Winnebago county.—Many *poor* sheep killed early in the winter for their pelts, and their carcasses fed to swine; but the proportion was small.

Boone county.—Many sheep killed for pelts or sold for 75 cents; pelts worth 50 cents; large numbers driven out of the State; one man took 600 to Missouri; a decline of three tenths.

Lake county.—At least three-tenths of the sheep have been killed for their pelts.

Cook county.—Sheep killed for pelts, and many sent out of the State.

De Witt county.—Large numbers sent to market; and farmers have about concluded to give up the sheep business, owing to the low price of wool and the danger from the scab.

Franklin county.—Two-tenths sold for mutton and pelts.

Knox county.—General disposition to sell, in consequence of reduced prices; probably three-tenths sold.

Lee county.—Many died from neglect, and many have been slaughtered.

Logan county.—Many killed for their pelts, and one-third sent to Missouri and Kansas; the number reduced from 70,000 three years ago to 18,000 now; much neglected the past year.

Putnam county.—Some sheep sent out of the State to be kept on shares.

Rock Island county.—Large number slaughtered.

Schuyler county.—Many changed hands at 87½ cents to $1 per head, and many are being fatted for the butcher.

Du Page county.—Probably one-fourth slaughtered for mutton.

INDIANA.

Spencer county.—A few sheep shipped south for mutton.

Madison county.—Fully one-fourth sent out of the State.

Randolph county.—Flocks reduced one-half.

Du Bois county.—Flocks reduced about one-fifteenth.

Brown county.—Large number of old sheep sent to market.

Boone county.—Much larger number slaughtered than usual.

Union county.—A few for pelts and tallow, and a few for mutton.

Elkhart county.—Flocks greatly reduced by sheep being killed for pelts; carcasses fed to hogs.

Bartholomew county.—Probably one-fourth of the sheep killed for pelts and tallow.

Jennings county.—Probably one-third of the sheep sold for mutton and pelts.

Johnson county.—Flocks reduced one-half; sold for mutton.

Kosciusko county.—About five per cent. of mutton sheep sold out of the State.

Newton county.—About one-half of the sheep shipped for mutton.

Noble county.—Some taken out of the State, chiefly for market.

Warren county.—Flocks reduced three-tenths; sold for mutton and pelts.

Fayette county.—Flocks reduced three-tenths; slaughtered and sent out of the State.

Lawrence county.—Ten per cent. of sheep sold in the fall for the pelts and tallow.

Marion county.—Fully 25 per cent. sold for pelts and tallow, and 15 per cent. for mutton.

Jasper county.—Flocks reduced about one-eighth.

OHIO.

Highland county.—Great many sheep slaughtered for mutton.

Holmes county.—Large number sold for pelts and tallow, at 25 to 75 cents per head; 15 to 20 per cent. of the entire number. Prices have now advanced considerably. Stock, $2 or $3; mutton, $4 to $6 per head.

Huron county.—Both to considerable extent.

Marion county.—For both purposes; in one quarter of the county extensively; in another, one-half; and in another one-twentieth.

Tuscarawas county.—Sold extensively for eastern markets and for fattening; one-third of the stock; 40,000 pelted in the county.

Van Wert county.—Large numbers sold for slaughter.

Williams county.—More consumed as mutton than ever before.

Brown county.—Many sold to butchers.

Lorain county.—For both purposes; two-tenths of the whole.

Mahoning county.—About one-twentieth, principally for pelts.

Meigs county.—About three per cent. in northeast part of the county.

Putnam county.—One-fourth of the whole stock.

Ottawa county.—Unusual number slaughtered to supply deficiency in pork.

Shelby county.—Pelted one-third of the whole, last fall.

Auglaize county.—About three-tenths.

Morrow county.—From one-fourth to one-third killed or sold for pelts last fall.

Knox county.—About 4,000 pelted last fall.

Stark county.—About 18,000 pelted in the west end of the county.

Union county.—About 5,000 shipped to eastern markets—the year's increase.

Vinton county.—About 13,000 killed for pelts and tallow.

Ross county.—Many sheep-men in this region are getting rid of their flocks in various ways, in consequence of the downward tendency of wool since the close of the war; the panic is wide-spread, some of our largest sheep owners, however, are wisely holding their flocks, and will reap future profit by such a course.

Hardin county.—One-tenth shipped for mutton.

Muskingum county.—About 25,000 head pelted.

Medina county.—Flocks reduced one-fifth.

Champaign county.—Probably one-tenth pelted, and one-tenth shipped to eastern markets.

Harrison county.—Sheep reduced about 75,000 in number.
Jackson county.—Thirty per cent. sold for pelts and tallow.
Perry county.—Flocks reduced 10 per cent.
Jefferson county.—One-tenth killed and sold to go out of the State.
Wyandot county.—Many, who went into the business during the war, have sold their sheep for pelting or to be driven out of the State.
Athens county.—Flocks reduced one-third, in 18 months.
Carroll county.—About one-tenth sold for pelts and tallow; mostly old and thin.
Defiance county.—Flocks reduced two-tenths.
Erie county.—Flocks reduced three-tenths to four-tenths by neglect of lambs and by pelting.
Clinton county.—Flocks reduced three to four per cent.
Fairfield county.—Stock sheep reduced one-half.
Fulton county.—Twenty per cent. of the flocks killed.
Green county.—Three-tenths sold for pelts, and one-twentieth to go out of the State.

MICHIGAN.

Oakland county.—Flocks reduced three-tenths.
Kent county.—Some have been pelted, but more sold at a low price for mutton.
Clinton county.—Some killed for pelts; some sold to butchers at nominal prices; and some sold out of the State. One man sold 400 at one dollar per head.
Ionia county.—About 30,000 slaughtered for mutton and pelts. One buyer purchased 10,000 pelts.
Hillsdale county.—About two-tenths killed or sold out of the county.
Livingston county.—About 20 per cent.
Kalamazoo county.—Probably 6,000 slaughtered in Kalamazoo; 10,000 disposed of in the county.
St. Joseph county.—Few sold for pelts; one-tenth sold out of the State.
Branch county.—Probably one-tenth destroyed in this manner.
Genesee county.—Many pelted, and others sold at nominal prices—20 to 25 per cent.
Ingham county.—About two-tenths pelted.
Jackson county.—Fifty per cent. sold; mostly for pelts, tallow, and hams. Slaughtered, in the city of Jackson, 50,000; exported 10,000.
Lapeer county.—Ten per cent. sold for slaughter.
Lenawee county.—Many thousands killed for pelts and tallow, and hundreds for mutton.
Van Buren county.—Some flocks sold to go west.
Barry county.—Two-tenths.
Berrien county.—A few diseased sheep killed for pelts and tallow; and large numbers sold for mutton.
Ottawa county.—Many old sheep and weak lambs pelted.
St. Clair county.—Large number killed for mutton.
Washtenaw county.—Great number killed for pelts, tallow, and mutton; the latter being sold as low as one cent per pound for inferior class.

WISCONSIN.

Milwaukee county.—Stock much reduced by slaughter, at one and one-half to two cents per pound.
Rock county.—Flocks reduced one-fourth, recklessly.
Walworth county.—About one-tenth pelted; mostly diseased flocks.

Winnebago county.—Few sold for pelts alone; many for pelts and mutton.
Jefferson county.—Stock reduced one-tenth.
Fond du Lac county.—Fifteen per cent.
La Fayette county.—Flocks reduced two-tenths.
Washington county.—A great many sold for mutton; a few pelted, and carcasses fed to hogs.
Waukesha county.—Flocks reduced two-tenths to three-tenths, for mutton.
Buffalo county.—Flocks reduced 25 per cent.
Ozaukee county.—Flocks reduced 30 per cent.

MINNESOTA.

Le Sueur county.—Flocks reduced two-tenths.
Watonwan county.—A large number killed for mutton.
Sherburne county.—Flocks reduced for mutton.

IOWA.

Jackson county.—About 4,000 slaughtered for pelts, tallow, and hams.
Dubuque county.—Fifty per cent. sold to butchers.
Lucas county.—Flocks reduced six to seven per cent.
Jasper county.—Flocks reduced 10 per cent.; a few pelted.
Madison county.—Flocks reduced 50 per cent., by slaughter and sending out of the State.
Pocahontas county.—Stock reduced 10 per cent.
Allamakee county.—Flocks reduced by sale at low prices.
Des Moines county.—Stock considerably reduced. Whole flocks sold.

CONDITION OF THE WINTER GRAINS.

The condition of the winter grains was generally favorable at the date of reports, April 1; in most States considerably above the average of former years. The cold weather of March did some injury to the wheat plants; but the damage from winter killing has been less than for many years, and the promise for a good crop is quite flattering. In the New England States, and in New York and the northwest, snow still covered the ground; but, so far as developed, indications were favorable. In Maryland and Virginia our correspondents represent the prospect as very fine, and from the great wheat-growing regions of the west the reports are almost universally favorable. Kansas has suffered more than any other section from winter killing and from the depredations of grasshoppers. A marked difference is noted between fields sown broadcast and those which were drilled, in favor of the latter, the drilled grain standing the winter much better than the former. The following extracts from the letters of a few of our correspondents in the several States present a fair index of the character of the whole, though about all the unfavorable reports are included:

Genesee county, N. Y.—Wheat 20 per cent. below average condition.
Madison county, N. Y.—Wheat equal in condition to best years past.
Erie county, N. Y.—Wheat looks well, but is not so large as last year.
Ontario county, N. Y.—Wheat above average 10 per cent.
Tioga county, N. Y.—Wheat and rye look well, not winter-killed.
Suffolk county, N. Y.—Wheat 10 per cent. below average.

Steuben county, N. Y.—Wheat 10 per cent. better than last year.

Schuyler county, N. Y.—Wheat looks badly from the effect of cold weather in March.

Niagara county, N. Y.—Wheat better than last year, though not large.

Onondaga county, N. Y.—Wheat looks well, having been covered with snow all winter.

Kings county, N. Y.—Wheat and rye promising.

Dutchess county, N. Y.—Wherever the snow is off, wheat looks better than usual.

Queens county, N. Y.—Grain wintered well, and is promising.

Westchester county, N. Y.—The appearance of winter wheat and rye is not very favorable; much of it supposed to be killed.

Putnam county, N. Y.—Wheat and rye very good.

Union county, N. J.—Wheat injured somewhat by freezing and thawing in March.

Passaic county, N. J.—Wheat and rye a little better than last year.

Essex county, N. J.—Wheat and rye look well, but are not forward.

Burlington county, N. J.—A few weeks of present growth will bring wheat up to the average.

Camden county, N. J.—Appearance of wheat better than for some years.

Westmoreland county, Pa.—Wheat much heaved out by hard freezing.

Tioga county, Pa.—Wheat never better.

Northumberland county, Pa.—Wheat and rye promise abundant harvest.

McKean county, Pa.—Wheat above the average.

Montgomery county, Pa.—Wheat and rye on good sandy soil look well; on heavy land, a little thin from heavy freezing and high winds.

Lehigh county, Pa.—Wheat in good condition; rye badly damaged, frost-killed and rotten under icy snow.

Fulton county, Pa.—Neither wheat nor rye looking well. Seeding late in consequence of wet weather. Early-sown much the best.

Indiana county, Pa.—Winter grains look remarkably well.

Dauphin county, Pa.—Wheat promising two-tenths less than last year; unfavorable winter.

Bradford county, Pa.—Winter grains never looked better than now.

Butler county, Pa.—Not for many springs have wheat, rye and clover looked so well as this spring.

Luzerne county, Pa.—Wheat first-rate.

Lancaster county, Pa.—Wheat and rye as promising as farmers could desire.

New Castle county, Del.—Wheat about average.

Alleghany county, Md.—Wheat very fine; rye in good condition.

St. Mary's county, Md.—Wheat remarkably good.

Queen Anne county, Md.—Wheat stood the winter well, but the severe weather of March was hard upon it, though I think there was little killed.

Washington county, Md.—Wheat very promising.

Rockbridge county, Va.—Wheat promises more than an average yield.

Tazewell county, Va.—Winter grain unusually promising.

Prince William county, Va.—Wheat and rye look exceedingly well, especially where fertilizers were used.

Montgomery county, Va.—The best prospect I have ever seen for wheat and rye.

Chesterfield county, Pa.—Wheat never looked better.

Clarke county, Va.—Wheat in better condition than since 1859.

Nelson county, Va.—Wheat promising, especially the drilled fields.

Louisa county, Va.—Wheat 20 per cent. below last season.

Greene county, Va.—Wheat and rye look better than I ever saw them.
Buckingham county, Va.—Wheat in better condition than for 15 years.
King George county, Va.—Wheat green, vigorous, and promising.
Iredell county, N. C.—Winter wheat and rye look well, and we have the prospect of a good crop.
Harnett county, N. C.—Wheat and rye in average condition.
Monroe county, W. Va.—Wheat injured by bad weather in March, but not materially.
Putnam county, W. Va.—Wheat six-tenths better than last year.
Covell county, W. Va.—Wheat and rye look better than for five years.
Marshall county, W. Va.—Wheat and rye look unusually well.
Brooke county, W. Va.—Wheat in fine condition. Little loss from winter-killing.
Harrison county, W. Va.—Prospect never better for good wheat crop.
Braxton county, W. Va.—Wheat promises well, though somewhat injured by hard freezes.
Lincoln county, W. Va.—Wheat and rye 50 per cent. better than last year.
Taylor county, W. Va.—Prospect for wheat never better.
Anderson county, Ky.—Not so good a prospect for wheat in ten years.
Kenton county, Ky.—Wheat little injured by freezing.
McCracken county, Ky.—Wheat thought to be 100 per cent. better than last year.
Trimble county, Ky.—Wheat and rye 50 per cent. better.
Henry county, Ky.—Wheat and rye better than for many years.
Butler county, Ky.—Wheat promises better than for three years.
Spencer county, Ky.—Wheat 100 per cent. better than last year.
Fayette county, Ky.—Winter grain more promising than since 1851.
Smith county, Tenn.—Wheat in fine condition; 50 per cent. above average. There has not been such a prospect since 1861.
Weakley county, Tenn.—Wheat 20 per cent. above an average, and the same increase in acreage.
Robertson county, Tenn.—Wheat in very good condition, and farmers have great hopes of a large crop.
Sullivan county, Tenn.—"I have just returned from a trip down the Holston river to Knoxville, closely observing the condition of winter grain, and I do not remember ever to have seen wheat and rye looking so fine."
Coffee county, Tenn.—Wheat has almost entirely recovered from the effects of the severe frosts during February, and now looks unusually promising. The Tappahannock is undoubtedly the great wheat for this latitude; it stands the winter better, and is 20 days earlier than other varieties sown at the same time.
Montgomery county, Tenn.—Never saw wheat look more promising.
Hawkins county, Tenn.—Wheat looks better than for years past, with a much larger area than in any year since the war.
Lincoln county, Tenn.—Wheat and rye in fine condition.
Henry county, Tenn.—The cold of January and February was very severe on wheat, but it yet looks well—better than an average.
Greene county, Mo.—Wheat 50 per cent. better than last year.
Dallas county, Mo.—Wheat and rye rather over average.
Newton county, Mo.—Wheat not so good as last year.
Sullivan county, Mo.—Wheat looking beautifully.
Pettis county, Mo.—Early sown wheat looks well. Late-sown below an average, and some fields entire failures.
Schuyler county, Mo.—Winter grain partially killed.

Clinton county, Mo.—Wheat and rye about half frozen out.

St. Louis county, Mo.—Wheat and rye never looked more promising.

Bates county, Mo.—Wheat sown broadcast has heaved out very much; that drilled is looking well; more than one-half drilled.

Boone county, Mo.—Wheat and rye promise well; little affected by the freeze. Drilled grain developed much better than that sown broadcast.

Cass county, Mo.—Grasshoppers destroyed a few fields of wheat, but that sown early is an average, with increased acreage.

Henry county, Mo.—Wheat prospect excellent, large acreage.

Montgomery county, Mo.—Fifty per cent. increase in acreage of wheat. Late-sown much killed out.

Morgan county, Mo.—Wet weather and alternate freezing and thawing have injured late-sown wheat. Early-sown in fine condition. Drilled wheat is in better condition than that sown broadcast.

Marion county, Mo.—Early-sown wheat not injured by the freeze—late-sown damaged.

Scott county, Mo.—Wheat in fine condition.

Callaway county, Mo.—Wheat and rye in good condition. Wheat acreage very large.

St. Genevieve county, Mo.—Prospect not so good in a number of years as now for wheat.

Harrison county, Mo.—Wheat never promised better in this county.

Carter county, Mo.—Wheat much above average.

Ralls county, Mo.—Wheat varies from very good to very poor—the larger amount only fair; one-fourth beyond hope of recovery; one-fourth very promising; the remainder in condition to be restored by favorable weather.

Salisbury, Chariton county, Mo.—"I have been over a large part of north Missouri, and from observation find a large area of land sown to wheat. At this date it looks well, and if no mishap occurs, Missouri will this year produce more than twice the quantity raised in any preceding year."

Marion county, Oregon.—Extensive preparations have been and are making to put in very large crops of cereals this spring, and a larger amount of new and old land has been broken up in western Oregon within the past four months than in any similar period since the settlement of Oregon.

Pawnee county, Nebraska.—Winter wheat and rye look fine.

Riley county, Kansas.—Wheat and rye in excellent condition.

Douglas county, Kansas.—Wheat and rye nearly a failure—winter-killed.

Woodson county, Kansas.—Wheat crop will not be heavy. Many fields injured by excessive wet and frequent freezing. The early-sown looks best. Rye fair.

Leavenworth county, Kansas.—Wheat frozen out badly. Wheat harrowed in on southern exposure is entirely gone. Ploughed or drilled in on same exposure, half killed. Ploughed or drilled in on northern exposure, three-fourths to full crop; and even when harrowed in on the north hill-sides, one-half to three-fourths crop may be expected.

Shawnee county, Kansas.—Wheat falls two-tenths below last year in appearance. Rye an average.

Miami county, Kansas.—Wheat badly frozen.

Nemaha county, Kansas.—Wheat put in early in September with drill will make a good crop. Late-sown broadcast badly killed. Same true with rye.

Republic county, Kansas.—Little winter wheat sown. Nearly all winter-killed.

Marion county, Iowa.—Wheat and rye promising.

Lee county, Iowa.—Wheat and rye as good as I have ever seen.

Allamakee county, Iowa.—Winter wheat looks well, the little that is sown here.

Lucas county, Iowa.—Winter grain looks much better than usual.

Scott county, Ill.—Wheat never looked better. Prospect of immense yield. Much larger area sown than last year.

Effingham county, Ill.—Wheat and rye never looked better.

Ford county, Ill.—Rye looks better than average.

Pulaski county, Ill.—Wheat looking remarkably well.

Macoupin county, Ill.—Wheat looking better than I ever saw it before

Tazewell county, Ill.—Wheat in splendid condition.

Schuyler county, Ill.—Unusually fine condition.

Clinton county, Ill.—Wheat and rye look better than at any time within the last 30 years.

Madison county, Ill.—Area in grain 50 per cent. greater than last year, and crop looking well.

Massac county, Ill.—Best prospect in three years.

Boone county, Ill.—Rye considerably injured by alternate freezing and thawing.

Clay county, Ill.—Wheat unusually good.

Lawrence county, Ill.—Promise for wheat better than during seven years.

Du Page county, Ill.—Wheat injured by freezing and thawing.

Pike county, Ill.—Some late-sown wheat injured, but general prospect good. Acreage increased 30 per cent. Rye in very good condition.

Fayette county, Ill.—Winter grain never looked better.

Cass county, Ind.—Wheat looks better than it has within the last 20 years.

Bartholomew county, Ind.—In quantity and appearance wheat is very much above an average.

Wayne county, Ind.—Wheat is looking unusually well, having stood the winter better than for a number of years.

Grant county, Ind.—Wheat looks extremely well.

Randolph county, Ind.—Wheat and rye never looked better in this part of the State.

Spencer county, Ind.—Condition of wheat and rye probably as good as at any time for ten years.

Boone county, Ind.—Winter grain very much better than usual.

Madison county, Ind.—Wheat and rye never looked better than now.

Brown county, Ind.—Wheat at least 30 per cent. above average condition.

Benton county, Ind.—Wheat never better.

Clinton county, Ind.—Wheat 50 per cent. above average condition.

Delaware county, Ind.—Wheat and rye never more flourishing.

Blackford county, Ind.—Wheat, best for last 8 years.

Marion county, Ind.—Never knew of less damage to wheat by freezing.

Mercer county, Ohio.—Wheat is very good, better than for five years.

Stark county, Ohio.—Wheat looks exceedingly well, and a large breadth sown.

Butler county, Ohio.—"I have lived in this county 60 years, and have never seen a winter so favorable as the last for wheat. It has grown during half the winter, and the same may be said of rye and barley."

Lorain county, Ohio.—Wheat looks better than for several years past.

Van Wert county, Ohio.—Wheat comes out in much better condition than for years.

Highland county, Ohio.—Wheat was very good until the late freeze in March, which has injured some fields very much.

Fulton county, Ohio.—Wheat much better than last year.

Carroll county, Ohio.—Wheat looks much better than for several years.

Jackson county, Ohio.—Wheat not as good as common; March a hard month on it.

Champaign county, Ohio.—Wheat and rye never looked better than at this time, within my recollection.

Monroe county, Ohio.—Wheat looks 100 per cent. better than for three years; rye much better than usual.

Logan county, Ohio.—Fine prospect for wheat.

Athens county, Ohio.—Both wheat and rye have suffered severely.

Clinton county, Mich.—Wheat wintered well, but was about one-fourth its usual size in the fall; it is fresh and lively. Drilled wheat looks much better than that sown broadcast, the ridges seeming to protect it from drying winds.

Kent county, Mich.—Wheat is small and thin, owing to the dry fall; it is even, and has wintered well.

Oakland county, Mich.—Wheat and rye better than for the last two years; the plant is small but healthy.

Washtenaw county, Mich.—Wheat and rye promise a fine yield.

St. Clair county, Mich.—Wheat and rye in average condition.

Berrien county, Mich.—From appearances we shall have abundant crops of wheat and rye.

Bay county, Mich.—Winter wheat sown early looks well; late sown looks light.

Leelenaw county, Mich.—Wheat and rye look fully as well as at any time during the last six years; prospect of a heavy crop.

Jackson county, Mich.—Wheat and rye in better condition than for 10 years.

Branch county, Mich.—Wheat and rye never looked better.

Livingston county, Mich.—Condition of wheat and rye fair.

Ionia county, Mich.—Wheat was sown late, but is uninjured by the weather.

Muskegon county, Mich.—Wheat looks badly, as it got very small growth last fall.

Carver county, Minn.—Winter wheat and rye look well; winter wheat little sown, though it usually does well here.

Scott county, Minn.—Acreage in rye increased 50 per cent. and condition superior to last year.

Outagamie county, Wis.—Wheat did not make much growth last fall; not so promising as last year.

Jefferson county, Wis.—Rye looks well; no wheat sown last fall.

Crawford county, Wis.—Grain badly winter-killed.

Rock county, Wis.—Rye unusually promising.

Marquette county, Wis.—Winter grain in better condition than last year.

Portage county, Wis.—Wheat and rye injured to some extent by cold and lack of snow.

EXTRACTS FROM CORRESPONDENCE.

DISEASES OF HOGS, ETC.

Lebanon, Kentucky.—Rev. Thomas C. Clelland thus gives his experience: Millions of dollars are lost to this country annually by what is called "hog cholera." Nine-tenths of this amount could as well be saved as ·t. The following facts are the result of long experience and close servation, carefully compared with the experience of our most practical and successful farmers. I readily admit that there are some diseases that swine flesh "is heir to," whose surest if not only remedy is in prevention; and sometimes even this is impossible.

Pleuro-pneumonia is induced in hogs by sleeping in the dust and wet straw, and by close confinement, followed by sudden exposure. A friend lost his stock hogs by shutting them out from their warm beds in March. Let their beds be warm and changed frequently during the winter. If this disease makes its appearance, the best thing to do is to scatter them as widely apart over the farm as possible. Some persons have kept their sick hogs on a dry lot, with not a drop of water, with apparently good effect. If you are willing to "count the cost," call in your family physician and tell him to prescribe just as he would were you the patient. Make the prescription in the form of a pill, turn the patient upon his back and drop it in his mouth and close the jaws an instant, until the pill is swallowed. I have known many instances of a speedy cure where all hope was l[ost]. I believe that it remains for science to disclose the fact that this, and all other similar diseases, either in man or beast, are the result of animalculæ or cholera fungi, invisible to the naked eye.

Worms and lice.—If other diseases slay their thousands, these slay their tens of thousands. We clip the following from a public journal:

> The writer having for several years sustained a heavy loss by hog cholera, has applied his mind to discover the cause and cure of the same, and now thinks he has gained the victory over the great enemy. By examining the carcasses after death I find they contain an incredible number of worms, and also of lice on the body. After making this discovery I experimented as to how the lice and worms could be exterminated in time to prevent an attack of cholera. The lice were easy to drive with coal oil; to kill the worms I steeped the herb "Jerusalem oak" in hot water until the liquor was very strong. I then mixed corn meal and fed the hogs while in health, which killed the worm before the cholera set up in the system.

No doubt worms and lice, nine times out of ten, are the cause of hog cholera. But I object to the use of the remedy. Never use coal oil. It will "drive the lice," but will not kill the nits; besides, it is very injurious to the skin, and often kills very young pigs. Soap-suds is just as effective, and far more healthy. Copperas is a far better anti-worm medicine than "Jerusalem oak," besides being a fine tonic and appetizer. This, mixed with ashes and salt—another excellent vermifuge—will prevent worms and give tone to the system. The best remedy for lice is grease and tar in equal parts stewed together, mixed with a very strong decoction of common tobacco. One application of this will last six months; while warm apply with the hand or mop tied to a rod. Change their beds, and if you have any old tobacco stems let your hogs sleep on them. Lice will kill hogs that are perfectly fat, by getting into their ears, eating into their eyes, and very often prevent hogs from thriving, where they do not kill them outright. The owner wonders why his hogs do not fatten. If you see nits shining thick about the neck and flanks, and great lice crawling all over the body, apply the above remedy; it will save you a barrel of corn to each hog or increase the amount of weight equal to its value.

Last year the writer had a sow with seven pigs; I weaned her pigs; all but one died with lice, and that one I saved by washing it in soap-suds. The sow did not gain a pound in a week; she was restless and wild until I applied grease and tobacco, when she became tame and began to fatten finely. Two years since a friend told me he was losing all his hogs with the cholera; two or three died each day. I asked to see them; they stood with their heads down, eyes sore, heads swelled, &c. As they were too weak for the application of tobacco, I advised a bath in strong, warm soap-suds. This would kill the present crop of lice. He saved every one.

The model farmer of our county told me he had lost several hogs. He found that, in cutting in two the smaller bowels, sometimes he would kill five or six worms. Another friend was losing his little pigs; he found their ears full of lice; otherwise perfectly fat and healthy. The most successful breeder of swine in this State gave me the result of sixty years' experience:

I prefer my pigs should come in the middle of February. I prepare a long row of square rail pens, one to each sow, fronting south, just high enough for her to stand under: the eve of her shed to reach the ground on the north side, to keep off cold winds. I fill the bottom of the pen with good dry straw, and train each sow to wait before her own door for her regular rations. I never let my sows with young pigs run on green clover, rye, or oats. Wheat or blue grass will not hurt them, but the native woods are preferable to either; clover, &c., will produce worms. In the spring, when I mark them, I prepare a tub of strong warm soap-suds, into which I put a quart of grease and a quart of tar, and a decoction of two pounds of tobacco. Into this I immerse the shoats; they are never troubled with lice afterwards. To keep off worms I feed once a week on ashes, (say one gallon to 50 hogs,) with one pint of salt, mixed well with a quarter pound of copperas. My hogs never have the cholera, though I send five or six hundred to market annually. In feeding I never surfeit my hogs. I give them just what they can eat, but none to waste. I prefer to see them rise up with avidity to receive their daily meals.

In conclusion permit me to say that these facts and suggestions have been collected and prepared with great care, and I know they are worthy of consideration by every one who would be a successful breeder of swine. If some trouble and pains are involved in the application of the above it will repay an hundred, and, in many instances, a thousand fold.

Gowdysville, Union county, South Carolina.—I had some pigs die in the following manner: They were in fair order and thriving finely; were fed on corn, wheat bran, and had access to a clover lot occasionally; age two months. They became droopy and sleepy-looking, and then in a short time died. The first one which became sick threw off from its stomach food which had become sour—this one recovered. I cut open the largest and fattest of those which died and found its stomach crowded with corn which had became sour, but would not digest; they had lice on them. But some hog-raisers say lice will not kill fat pigs. They had access to a few cotton-seed which were daily dropped from the cow-troughs, the quantity being small. It is generally said that raw cotton-seed will kill hogs. If so, how do they do it? Is there anything about the oil that affects the digestive organs? Or will lice on young pigs stop digestion? I rubbed the pigs with kerosene, and took them from the seed, and since that time have lost none. All the pigs that died seemed to have digestion stopped suddenly, one or two days before death, otherwise they appeared sound and healthy inside. Any information you may have on this subject will be thankfully received.

[Probably the hogs had too much clover, and this may have been the commencement of their sickness, as much clover breeds worms; but the fact of their being infected with vermin is sufficient to account for their falling off and general indisposition, as no animal upon which lice abound can thrive, and the younger the animal the more it suffers from ver-

min. The cotton seed could not have done the animals any harm; the oil of the seeds is nutritious and fattening. Cleanliness and disinfection of the animal's coat is the true preventive; weak lye, soap-suds, tar and soap wash or carbolic-acid soap are the best substances to disinfect and clean the skin.]

Kewanee, Henry county, Illinois.—About 18 months ago the hog cholera made its first appearance in this vicinity. One man lost 150 hogs, (all he had;) another 50, and several others smaller lots. While passing one of my near neighbors one day he told me that his hogs had been dying at the rate of two and three a day for four days, and he showed me one which he said would be dead in two hours; the animal was then going about quite lively, but was a little purple about the legs. That morning he gave them some of the medicine described below, and lost no more hogs, though when he commenced there was not a well hog in his lot of 38. Another neighbor's hogs, 15 in number, took the disease and were all sick. The first day he got some medicine, and they all got well in a few days; others used it with the same result. I could send the testimony of these men, but it is unnecessary. The receipt is as follows: Sulphur, 2 pounds; copperas, 2 pounds; madder, 2 pounds; black antimony, ½ pound; saltpetre, ½ pound; arsenic, ¼ pound. This quantity is intended for one hundred hogs, in doses of one pint, night and morning, mixed in bran or slop of some kind that the hogs will be likely to eat. It is well also to change hogs upon clean ground. A good preventive is to keep the pens clear of manure and all other filth, and have them as dry as possible. It is a great mistake that it is good for a hog to have mud and filth to wallow in; like all other animals he will do best by being kept as clean as possible.

CHICKEN CHOLERA.

Anne Arundel county, Md.—Chicken cholera has prevailed very generally, carrying off fully one-half of all the chickens in our section.

Warren county, Tenn.—We are now visited almost annually and continually with chicken cholera, for which we have found no specific. Last year I lost my whole brood twice. We have used every precaution and every remedy that promised success, but without avail. They would contract the disease, and at least 80 per cent. died.

Lincoln county, Ky.—A disease among turkeys and chickens, killing great numbers, sometimes all on the farm.

INSECTS.—ENGLISH SPARROWS.

South Vineland, Cumberland county, N. J.—Our "insect enemies" are the greatest drawbacks we find in fruit raising. If the Department could find any means for exterminating them the benefit would be incalculable. A few pairs of English sparrows will be set loose in our town this season, and a regular crusade against the insects is to be inaugurated with dishes of sweetened water, and blazing fires by night. We can scarcely expect a great increase in the number of our best friends, the birds, while we harbor their worst enemies, the cats.

Montgomery county, Pa.—Fruit is almost entirely neglected in our county owing to the destruction wrought by insects. Some very fine specimens of pears have been raised, and grapes have also been cultivated to some extent and very fine samples of wine produced. Agricultural societies in eastern Pennsylvania have lately passed resolutions favoring the project of importing insect-destroying birds, and in that manner rid our fruit and shade trees of the insects that annually destroy

both fruit and leaves. That the idea is a good one we do not doubt, and have every reason to believe that it will be speedily carried into execution.

CHEESE-MAKING IN NEW YORK.

F. B. Morse, secretary of the Lewis County, N. Y., Agricultural Society, furnishes the following statement of the Leyden Cheese Association for the year 1868:

Milk received at the factory, 1,660,144 pounds; cheese made, 181,517 pounds; cured cheese sold, 170,246 pounds; shrinkage, 11,271 pounds; proceeds of sale of cheese, $25,959 60; average sales per 100 pounds, $15 32. Milk required for one pound of green cheese, 9.14 pounds; milk required for one pound of cured cheese, 9¾ pounds; milk required for one pound of green cheese in May, 9.56 pounds; in June, 9.32 pounds; in July, 9.65 pounds; in August, 9.36 pounds; in September, 8.59 pounds; in October, 7.84 pounds. Number of cows, 552; hogs at the factory, 90.

The First Farmers' Association of the town of Rushford, Allegany county, in its fifth annual report, makes the following statement of the operation of its cheese factory for the past year, the establishment having been run night and day for four months of the season:

The whole number of pounds of milk received for the season was 3,720,515; manufactured into pine-apple cheese, 490,818 pounds; boxes of cheese sold, 4,798; pine-apple cheeses sold, 9,156; five-pound fancy cheeses sold, 1,241; cured cheese sold, 390,940 pounds. Cows from which milk was received, 1,138; average number of cows for the season, 831; average number of pounds of milk per cow, 4,477; average number of pounds of cheese per cow, 471. Total amount received by the committee, $61,397 12; of which $54,298 05 was paid to farmers; $6,763 70 paid for manufacturing; $300 paid to the committee, and $35 37 for incidental expenses. Milk required for one pound of cheese for the season, 9½ pounds. Average amount received per cow, $73 88; average net amount paid farmers per cow, $65 34; average price of four selected dairies per cow, $75 51. During the season there were 15 sales made, and the lowest price received was in June, 14⅜ cents per pound; and the highest in August, 18½ cents; average price for the 15 sales, 16 1-10 cents; average price received per pound was 15 7-10 cents.

PROFITS OF AYRSHIRES.

Baltimore county, Md.—Our correspondent wonders that farmers should be so dilatory in improving stock, and states that it costs $400 to raise 10 common cows worth $600, affording a profit of $200; while 10 Ayrshires cost no more, and sell for $1,000, or $600 profit.

YIELD OF MILCH COWS IN PENNSYLVANIA.

Montgomery county.—Cows which are not good milkers are sold yearly from dairy farms for butchering and replaced with better stock. It is held that cows not yielding 1,500 quarts will not pay, and 2,000 quarts per annum is not a large estimate for good cows.

INDIANA.

Dearborn county.—The southern portion of this county, bordering on the Ohio river, below the mouth of the Great Miami, is widely known as the best corn land, its average value being not less than $150 per acre, without any improvements. The uplands and hill-sides yield excellent crops of hay, wheat, barley, sorghum, and potatoes. Grape culture

is practised to some extent, the Ives Seedling taking the lead at present. Our peach orchards in ordinary years yield a surplus over home demand. Pears were more plenty than apples in our immediate neighborhood last fall, and sold for $2 per bushel on an average. Fruit culture receives more attention every year.

Sheep raising has experienced a new impulse hereabouts, especially as to fine-wooled sheep, owing to the great success of the Lawrenceburg Woollen Mills, one of the most complete and extensive manufacturing establishments in the country, and the first one of its kind in this section, making none but the finest cassimeres, a large quantity of which finds ready sale in the eastern markets.

WHEAT AND FRUITS IN NEW YORK.

Genesee county.—The Tappahannock wheat has proven quite an acquisition. The principal objection to it is its short straw. Diehl wheat is the most popular variety of white wheat now grown here; it proves to be very reliable. This is emphatically a wheat-growing section. The crop last year was somewhat below the average yield, but the acreage was much larger than usual. Red wheat averaged 18 to 20 bushels per acre; white wheat from 20 to 25; Diehl wheat in many instances as high as 35 bushels and over. Probably ¾ of last year's crop is in the hands of the producers now. Price, $1 40 for red, and $1 50 for white. One of our leading millers and buyers told me a few days since that there was ¼ or 25 per cent. more wheat in the county than he ever knew before.

There is a large extent of land set in orchards; some farmers having from 25 to 100 acres of apples. The trees mostly cultivated are the late-keeping varieties: Russets, Baldwins, Greenings, and King apples. There are a great many pear orchards, but few have realized expectations. Grapes are cultivated quite extensively, (mostly Isabella,) but for the past three years have not ripened well. There is a large quantity of potatoes through this county, very few having sold in the fall. They are now worth 40 to 50 cents per bushel.

EXPERIMENTS WITH SEEDS.

Austinburg, Ohio.—The Poland oats received from the Department of Agriculture yielded about fifty-fold, while the common variety produced only about twelve-fold.

Sibley, Minnesota.—The New Brunswick oats received from the Department of Agriculture yielded 45 bushels per acre, and averaged 47 pounds per bushel.

Burlington, Iowa.—From a sample of the Tappahannock received from the Department I raised 100 bushels at the third sowing; it brought $4 per bushel, when sold for seed.

Marshall, Michigan.—From a package of the Potato oats received from your Department I raised from the second year's sowing 200 bushels of fine, sound oats, weighing about 45 pounds per bushel. I consider one bushel worth two of the common oats, which weigh from 28 to 32 pounds per bushel. I regard them as a very decided improvement on the common oats cultivated in this section of the country.

Hawkins county, Tennessee.—Of the Tappahannock wheat, sent in 1866, a half gallon produced ninety-fold, and the second crop was also very large. From that half gallon, crops of from 2 to 20 acres are now growing on 8 to 10 farms. The seed of this variety should be sown early.

COTTON, ETC., IN ARKANSAS AND GEORGIA.

Arkansas county, Ark.—I was made to say, in your November and December report, that the average product of 1867 was less than 200 pounds of lint per acre; "this year the *average* is less." It should have been, "the *acreage* is less," as I put the crop of 1868 at 15, which would be 300 pounds lint to the acre. In this I was below the amount, principally from the fact that the return of lint from the seed was much better than in 1867. My crop was about 200 pounds lint per acre; but it was much below the average on account of causes which I could not control; principally from late planting, on account of high waters; next, it was mostly on the black land, which suffered very much from the rains of August and September; still my product was over the average to the hand on the river, as I made seven bales cotton, 266 bushels corn, 16⅔ bushels wheat, and two tons of hay to the hand, one-third of whom were women. My land in cultivation was 12 acres cotton, seven of corn, one and a quarter of wheat to each hand; cultivated mostly with the Buckeye cultivator, as labor is scarce and land plenty. I had a notion that by planting my cotton in checks, four feet by four, I could cultivate more land to the hand, and make as much per acre as by the drill plan, and after one year's trial I have no reason to doubt my judgment. One of my croppers made, on three and nine-tenths acres, planted four by four, 1,676 pounds of lint, including weight of bagging and ties, or 1,556 pounds of lint, and, as he was late in gathering it, much was lost.

I am satisfied that the sulky plough can be used to great advantage on all our places that are free of stumps.

I see a tendency in some of your southern correspondents to speak very despairingly of the mode of culture in the south. My impression is that the cotton lands in the Mississippi valley were, before the war, the best cultivated lands in the United States, size of fields taken into consideration. We bought the best ploughs that we could find, and the best teams, and used every exertion to procure the most productive seed, and invariably laid aside all our tools when we found better. I much doubt if it will ever be equalled again. Our crops average 10 bales of cotton and plenty of corn and vegetables to supply the place for each hand, counting all names on the plantation books that went to the field that were over 12 years or under 45.

If you could induce Congress to tax all dogs it would enable the South to raise on an average 50 sheep to each family, with little or no cost. Before the war I had a flock of 700 sheep, that did not cost me more than $150 for all feed and attention. It is strange that no legislative body will give us the protection we ought to have.

Most of our lands for 1869 will be cultivated on shares, the planter furnishing land, teams, and implements, the laborer to find himself; some hands pay one-half the expense of feeding mules. Our planters are not very sanguine of a good crop, as the hands don't work as well as last year, and in many places there are not enough hands if the season should prove rainy. I look for a repetition of the role of 1866; still I may be mistaken.

McIntosh county, Ga.—Cotton-planting is now commencing under better auspices than for several years. The freedmen in this county conduct themselves well, as they have usually done; are quite contented, and are returning to the employ of their former owners, who are now able to raise a little credit to hire labor on a small scale and buy fertilizers. It is not probable that there will be more or even as much cot-

ton planted as formerly, but I trust it will be better tended, and yield more than ever, provided we have no more caterpillars. I presume the corn crop will be about the same. Fences have been made and repaired, and seeds are now going into the ground.

MARKET GARDENS AND ORANGE ORCHARDS IN FLORIDA.

Putnam county, Fla.—This portion of the State, bordering upon the St. John's river, is being rapidly converted into market gardens, and, so far, this project has been attended with very flattering success. The past winter has been one of unusual severity, the cold weather lately experienced being without precedent since 1835. On Christmas morning the thermometer sunk to 18° Fahrenheit, fourteen degrees below the freezing point; and again on the 1st of March it sunk to 26°, six degrees below the freezing point. It was feared that the orange trees would be killed by the freeze of Christmas, but happily the injury done was very slight. The crop for this year will be fully up to the average. The freeze of March 1 did some damage to early vegetables that were exposed, such as tomatoes, cucumbers, beans, &c. Since then, however, the weather has been warm and in all respects favorable to vegetation, so that the crops will be quite as early as in any previous year. Tomatoes and cucumbers are in bloom, and potatoes are nearly ready for market.

CASTOR BEAN, RAMIE, ETC., IN TEXAS.

Goliad county, Texas.—Before the emancipation of our slaves we relied upon cotton for our main support; since then we have raised some more than we could get picked. The caterpillar came to destroy the best part of the crop, and our planters have no longer any existence. They are now small farmers, raising enough to feed their hogs and make their bread; raising broom-corn to supply the country with brooms, and raising all the minor articles, such as before the war were bought from the north or northwest. This year, however, considerable attention is given to the castor bean. Hundreds of acres are planted or will be planted. Our soil is prolific, and in some instances has already yielded 60 bushels of castor beans to the acre. As yet we have no machinery in this county for getting out the oil, but in an adjoining county there is one of small power, whilst in Gonzales, about fifty miles distant, there is a steam-engine of great power and all the apparatus necessary to the manufacture of oil.

The ramie plant is beginning to attract attention; it has been tried by myself and others on a small scale, but sufficiently for me to say that it stands the climate well. In summer it stands the heat as well as cotton. I had it growing side by side with cotton, and am fully satisfied that it will bear all the heat and drought that cotton will. In winter cotton dies, being killed by the frost. Ramie is killed down to the ground by frost, and as soon as the frost is over the plant puts out again, and so will continue to do under repeated frosts; although we have passed through, for us, a cold winter, still the roots of the ramie have not been injured in the least. I look upon this plant as of great value to the south. If it would make nothing but ropes, it would be a crop that would pay splendidly; and, in addition to its value, it is a good lazy man's crop, for it does not need the labor consequent upon a crop that needs replanting. How many years it will do without replanting, I do not know; but this is the second year for my small experiment, and it is coming up thicker and stronger than last fall.

Our stock interests are passing away rapidly. So many are depredating upon not only beeves, but also stock cattle, that, unless this thieving is arrested, in a few years the stock interests will be no more. We want laborers here. Our fertile fields are in many instances lying idle, the fences going to decay.

Rusk county, Texas.—There is an increased disposition among the freedmen to cultivate the soil. Not so many idling about the villages; in fact, they are fast learning that indolence and politics will neither feed, shelter, nor clothe them. Some are working for wages, while many are cultivating on shares, the plan of cropping and mode of cultivation being usually directed by the whites, which seems necessary to success. An increased breadth of cotton will be planted, affording just ground for fears that the grain crop will be too much overlooked in the cotton region. On the whole, both whites and freedmen are reaching a just appreciation of their true positions, respectively, so necessary to the prosperity of each.

Small farms, thorough cultivation, and manuring to a high point, are now the topics of our best informed farmers. There is a great desire to obtain suitable labor-saving agricultural implements. Here is a rich field for the manufacturers of such articles suitable to the country, and not of too costly a character.

This part of Texas being timbered, and mostly of a soft, fine, loamy soil, quite fertile and free from rocks, offers rare inducements for homes in a country of cheap lands, good water, a mild and salubrious climate, where the farmer can labor at all seasons of the year, and grow almost every product necessary either for sustenance or luxury.

FOREST TREE CULTURE.

Adair county, Iowa.—Timber-planting is receiving some attention in this section, and its rapid growth is very encouraging. A settler in the southern part of this township (Richland) planted a small grove of cottonwoods ten years since, which are now fine trees, 30 to 40 feet high, and one of them measures more than two feet in diameter one foot above the ground.

Gunnison, Sangrete county, Utah.—We have no forests in the valleys of the Rocky mounta[illegible], but scattered cottonwoods, and in the mountains no hard woods e[illegible]t dwarf oaks, mahogany, and maple, and near the rim of the basin, [illegible]warf ash. In the valleys, along the rivers and creeks, cottonwood, thorn, and willows are generally to be found, but the climate is too dry to favor forest-growing without irrigation. The dwarf hard woods are not fit for timber, hence we are compelled to get our supply from the east, 1,200 miles distant. Our farmers' club intend experimenting with various hard wood trees, as we believe their cultivation practicable in the valleys where irrigation is applied until the trees shade the ground.

THE CLINTON GRAPE IN IOWA.

Maquoketa, Jackson county, Iowa.—After ten years' experience I am convinced that the Clinton is the best grape for this latitude, as was fully proved last season. The preceding winter had been very dry and bare, with but little snow, and the ground was frozen deep. When the spring opened I found that half the Concords were dead, half the Isabella, two-thirds of the Delaware, and half the Hartford Prolific; in fact more than half of all the downy-leaved varieties were winter-killed,

while those remaining alive looked sickly all summer, and it remains to be seen how these will come out the ensuing spring. The best care was taken of all, being covered alike; but the Clinton alone came out unscathed, not one stalk being lost, and all looking as thrifty as ever. Young two-year-old roots of the Clinton I did not cover at all; in the spring they were transplanted and showed as vigorous growth as ever. As with the Clinton so I found it with the other green-leaved varieties as well. The Clinton is a prolific bearer. A root two years old, and others two years' growth as a stock, bore the last season 84 bunches, averaging four bunches to the pound—21 pounds, worth here 10 cents a pound.

STOCK IN CALIFORNIA.

Mendocino county, California.—It is impossible, in California, to arrive at any correct average of the value of horses or mules. There are a large number of "California" horses, which uniformly range at a low price; for three years old and upwards, not exceeding $12, perhaps not more than $10. A few of these horses, however, have been broken to harness, and become quite useful. These range at from $40 to $70. But during the last five years our people have given much attention to the work of improving their stock of horses. Half-breeds, bred from good stock, attain more than double the value of the original inferior stock. But there are some good mares bred to good horses, and those take a high position in our markets; a good three-year-old filly is worth from $150 to $250, owing to her size and action; geldings, about the same, while good stallions are sometimes worth $1,000. It is much the same with mules. The old stock are mostly small and inferior—suitable only for packing, while many of the young ones are large, fine animals.

While we are vastly improving our cattle, the difference in them does not take so wide a range. The old California stock has nearly disappeared, and we seldom see anything but "American" or half-breeds.

Hog-raising is an important branch of enterprise in Mendocino county, and now is a source of much profit, with a prospect of continuing so for some years to come. But our specialty consists in sheep, in which some of our citizens have largely invested, and are exercising much care to import improved stock. Mendocino county, with her hundreds of thousands of acres of semi-fertile hills and mountain slopes, is peculiarly adapted to the rearing of healthy sheep. Our climate, too, is favorable to this enterprise, and we predict that the day is not far distant when she will rank high among the wool-growing districts.

AGRICULTURE IN MONTANA.

Gallatin county, Montana.—The cultivated portions of Montana lie between 45° and 48° north; the growing seasons, in consequence of the elevation, being shorter than in the same latitude in the Atlantic States. Most of the small grains, however, mature to perfection, and with immense yields, in some instances in Gallatin county as high as 80 bushels of spring wheat and 60 of winter being obtained per acre, the average being 35 bushels throughout those portions best adapted to the raising of grain; and 50 bushels of oats and of barley per acre is common; oats weigh very heavy, from 48 to 50 pounds to the bushel struck measure. Wheat is also of an extra quality, there being no lack of that which will flour an XXX brand, and equal to the best St. Louis brands. There is a great variety of soils, the best for grain-raising being loamy, very warm and quick, and containing a large amount of lime in solution,

being therefore very durable. This soil is confined to the creek and river bottom lands. In producing the heavy yields above referred to no extra cultivation was added. The grain was sown (90 pounds to the acre) broadcast, and harrowed, in a rather hurried manner. Beds of sand and gravel underlie the soil at the depth, generally, of eight feet, and it never seems to suffer for want of drainage.

It is fast becoming an established fact that the best table potato may be grown in Montana. But of all varieties, whether of grains or vegetables, the earliest varieties are most successful.

Corn so far is not a success, except, perhaps, in very limited portions of the Territory, the nights being too cold, tending to check its growth and maturity. Garden vegetables, which are not *too tender*, (in reference to frosts,) do exceedingly well.

All the valleys and immense mountain slopes and foot-hills are literally one vast pasture, covered by nature with the richest bunch-grass. Fine beef is made by grazing cattle on these grasses alone. As a stock-raising country these valleys are not surpassed by any portion of the American continent. These portions are exceedingly well supplied with water from the numerous springs and mountain rivulets, and almost, without exception, of the purest waters.

The banks of the streams are usually skirted with timber. But aside from this the mountains and mountain spurs contain an inexhaustible supply for building and lumber purposes. There are numerous mills both for lumbering and flouring purposes. The agricultural resources of the Territory are ample to supply the population of an ordinary State, yet a still greater resource in its adaptability to the raising of stock. Irrigation has to be resorted to in most parts to produce crops of either grain or vegetables.

THE SOUTH COAST COUNTRY OF CALIFORNIA.

Mr. A. S. Taylor, of Santa Barbara, California, writes as follows:

Since the spring of 1867 the coast country of California, between San Diego and Monterey, has experienced a great change from its former dullness and apathy, and the population, from all reports, has been more than doubled. In the spring of that year a large immigration from the northern section of the State, and from the Atlantic States, consisting of steady farmers and mechanics, with their families, teams, and tame stock, has come in and bought land in large quantities, and given an entirely new life to this long-neglected portion of the republic, which, within its own confines, covers as many square miles as the entire State of Pennsylvania. Within this short time as many as 50,000 new settlers have established themselves in the country mentioned. and the old Spanish grants, measuring by the league, have been nearly all transferred to capitalists, speculators, and small purchasers, and the prices advanced, in many cases, 400 per cent. Speculators are now selling off with great profit to themselves, as well as benefit to the public interests, State and national. Large numbers have made their homes in Santa Barbara, Los Angeles, and San Diego, on account of health, as the climate is not only one of great salubrity, but is extremely pleasant and agreeable, and admirably fitted for a sanitarium, for such as labor under pulmonary complaints, old fevers, rheumatisms, indigestion, and chronic derangement of the bowels, the diseases of women and children, and those bodily ailments which the art of medicine fails to conquer. There is no doubt that when the Pacific railroad is opened, and hotel accommodations are properly established, this portion of California will attract large numbers of visitors from the Atlantic States, Europe, and India, for the purposes of health, pleasure, and recreation. No district of country on the western continent surpasses it in salubrity and picturesque scenery, and it is bounded in its whole length by the breezes of the Pacific ocean, which, with the dry, pure atmosphere, completely neutralize all malarious poisons in the soil; indeed, the land is so declivitous that no swamps can be found, and little room for mosquitoes or fevers.

Not only has the new emigration greatly extended the cultivation of the grape, fig, orange, and other sub-tropical fruits, but all the old vineyards and fruit gardens have been made prosperous and more reliable, and it is probable that, from the cheapness of California wines, spirits, and fruits, a home market will be formed, and the people in this portion of the republic consume their tons of fresh and dried fruit and thousands of bottles of wine daily; and the men who inhabit the pacific States will soon be enabled to get their wine as

cheap and as good as do the people of Italy, France, Austria, or Spain, to the great benefit of the revenue and prosperity of the country.

The seasons of 1865, 1866, 1867, 1868, and 1869 have done wonders for this portion of the country, and as seasons appear to go in meteorology by cycles, there is a good prospect that there will be a continuance of the same for 10 or 12 years, when there will be enough inhabitants in this part of the State to effectually counteract the phenomena of dry years by the completion of irrigating works, for which the formation of the country is admirably adapted.

It is estimated by residents of 20 years' standing that four times as many fruit trees have been set out in southern California in the last two years as in any two years since 1850, and at least ten times as much land fenced and cultivated as anterior to 1867, and which has required some 6,000,000 feet of lumber from the mills north of San Francisco to satisfy the augmented demand, giving a new stimulus to the lumber trade, of the North Pacific. This country has always produced wheat, barley, oats, &c., of the best quality, since 1780, and as soon as all the improvements in agricultural machinery are set going, this section is so close to the sea that these staples of commerce can be as cheaply grown as around the bay of San Francisco, if not cheaper, and much more so than in the region of the great lakes or the north Mississippi States, the farming lands lying within from one to ten miles of shipping ports. There is no record of any dangerous hurricane or wind for 100 years, or since 1769, on all the coast from Monterey to San Diego, and for ship anchorages it may with justice be termed a storm-less shore; the few vessels lost in that time being traceable more to bad charts and bad sailors than to bad weather.

CROPS IN UTAH.

Springville, Utah county, Utah.—About one-fourth of the wheat, barley, oat, and corn crops was destroyed by locusts the past season; some farmers lost their entire crop. The potato crop was good. The sorghum was not injured by the locusts, there being manufactured in this place 10,760 gallons of excellent molasses this season. The vegetable seeds received from time to time from the Department have succeeded well.

Preparations on an extended scale are being made for the production of silk. Many thousands of mulberry trees will be planted in the spring.

The California grape is in general cultivation here and fruits well, but has to be laid down and covered in winter. The hardy kinds, such as the Clinton, Catawba, Concord, Isabella, Delaware, Iowa, and Israella, grow thriftily, but have not fruited much yet. We raise excellent fruit, such as the apple, pear, plum, apricot, peach, and cherry, which are free from injury by insects.

WOOL ON HAND.

The following estimate of the amount of wool unsold April 1, 1869, is obtained by deductions from the county returns:

States.	Pounds.	States.	Pounds.
Maine	145,000	Texas	188,000
New Hampshire	143,000	Arkansas	11,000
Vermont	540,000	Tennessee	74,000
Massachusetts	46,000	West Virginia	178,000
Rhode Island	43,000	Kentucky	264,000
Connecticut	75,000	Missouri	484,000
New York	2,516,000	Illinois	849,000
New Jersey	26,000	Indiana	338,000
Pennsylvania	820,000	Ohio	1,381,000
Delaware	2,000	Michigan	870,000
Maryland	91,000	Wisconsin	519,000
Virginia	134,000	Minnesota	58,000
North Carolina	97,000	Iowa	538,000
South Carolina	27,000	Kansas	45,000
Georgia	54,000	Nebraska	8,000
Alabama	35,000		
Mississippi	75,000	Total	10,711,000
Louisiana	37,000		

DEATH OF B. P. JOHNSON.

The death of Benjamin P. Johnson, for 22 years the efficient secretary of the New York State Agricultural Society, and the laborious and successful editor and compiler of the New York Agricultural Reports, is thus announced by his successor:

NEW YORK STATE AGRICULTURAL SOCIETY,
Albany, New York, April 16, 1869.

SIR: With deep regret I have to announce to the Department the decease of the venerable Benjamin P. Johnson, which took place at his residence in this city on the 12th instant.

The exalted character of Colonel Johnson and his services to the cause of agriculture are known so well by the honorable Commissioner that it is unnecessary to attempt his eulogy at this time. The society has committed that duty to the honorable Lewis F. Allen, of Buffalo, an ex-president of the society, who will be able to do justice to the subject.

Mr. Johnson was born at Canaan, in Columbia county, in this State, November 30, 1793, graduated at Union College in 1813, studied for the profession of the law under the Hon. Elisha Williams, at Hudson, and practiced for many years at Rome in this State. He represented Oneida county in the assembly of the State in 1827, 1828, and 1829, was president of the State Agricultural Society in 1845, and on the 22d day of January, 1847, was elected secretary of the society, which office he held until the election in February last, when he resigned the active office of corresponding secretary and accepted the position of recording secretary. Mr. Johnson was commissioner to the international exhibitions at London in 1851 and 1862. His remains were interred at Rome on the 15th instant.

I have the honor to be, very respectfully, your obedient servant,

T. L. HARRISON, *Secretary.*

Hon. HORACE CAPRON,
Commissioner of Agriculture.

THE "SPARTINA" FIBRE.

The dearth of paper material has threatened to prove a drawback to the spread of general intelligence, and a hindrance to educational progress. In Europe a new material has been adopted, or rather a very ancient fibre has been utilized by the adaptation of paper-making machinery, until a large portion of the paper made, both wrapping and printing, is of this fibre—the esparto grass of Spain and Algiers. Seventy thousand tons are annually brought into England, and a large quantity into France. It has also been imported into this country, and its acclimation is in process of experiment in the south.

Other fabrics, native to this country, are in use here to an increasing extent, among the most promising of which are the bamboo cane of the south, and the "cord grass" of the west. This "cord grass" (*Spartina cynosuroides*) is quite abundant in the low river bottoms, and in tracts of marshy land throughout the northern States. It is easily recognized by its long bristly one-sided spikes, flowering in August. The peculiar toughness of its fibre warrants the use of its common name, "cord grass," the living stem of which is very difficult to break. It grows to a height of three to six feet, covers extensive tracts of land, and yields a very heavy crop, which is so easily cut and carried to market that it has been sold for five dollars per ton. The cost of production not exceeding that of the poorer quality of wild hay, and the extent of area united to its growth being practically unlimited, thorough experiment should be made in testing its value for newspaper material. Its successful use in the manufacture of wrapping paper warrants further investigation into its adaptation for higher grades of paper.

The following letter, in answer to a recent inquiry from this Department, is from a manufacturer who has successfully used hundreds of tons of it:

QUINCY, ILLINOIS, *April* 15, 1869.

SIR: I have the pleasure to acknowledge the receipt of your letter of inquiry in reference to the "marsh or cord grass" as a fibre for the manufacture of paper, and in reply would state that this grass is known among botanists as "*Spartina cynosuroides.*" It grows wild upon the inundated bottom lands of the Mississippi river, the most northern limit of its growth extending nearly to Burlington, Iowa, and its southern limit being about the confluence of the Illinois with the Mississippi river. The territory yielding the greatest quantity and the best quality, is found in the bottom lands of Adams and Pike counties, in Illinois, and Marion county, Missouri. In these localities there are vast tracts of lands on which can be cut from two to four tons of this grass per acre. It grows from three to seven feet in height, and when cut early makes very good hay for cattle and horses. Its roots are strong, branching, and near the surface, and each stock grows separate, springing from an eye or pointed protuberance on the root. There are no joints in the stalk, it grows very erect and stiff, and the stalk is formed by the circular overtapping and compression of the leaf, like the banana. I have used many hundred tons of this grass in the manufacture of wrapping paper. It is much superior to straw, yielding, when properly treated, a much stronger, longer, and softer fibre, and a much larger percentage of stock. Its cost, delivered at my mill, during the past two years, has been about $5 per ton.

My mill has a capacity for making two and one-half tons of paper per day. Has been running about 18 months, and I have used this grass almost entirely for stock. I know of no other paper-makers who use it, and paper-mills are few in the vicinity in which this grass grows.

Experts in the manufacture of paper, who have worked in mills in England, where large quanties of esparto grass is used, and which is imported from Spain and Portugal, have examined this grass and pronounce it a better material for paper stock than esparto.

The later this grass is cut the better it is for paper stock; that cut in September or October is the best. Experiment shows that it bleaches quite as readily as straw, and those experienced in the manufacture of printing paper express themselves as satisfied that printing paper can be made from it, fully equal in quantity, and difficult to tell from that made from rags, and so certain am I of this that I am now endeavoring to enlist a little additional capital for the purpose of converting my mill into a print and book paper-mill, and use the grass entirely as stock.

The production of this grass is almost unlimited in this vicinity, and the land on which it grows is almost valueless for any other purpose, being subject to annual inundation of from two to four feet in depth.

Very respectfully, your obedient servant,

JAMES WOODRUFF.

HON. HORACE CAPRON,
Commissioner of Agriculture.

RAMIE, OR "CHINA GRASS."

A communication has been received from Charles Frederick Dennet, Boulogne, France, under date of February 29, 1869, making inquiries concerning the "ramie." He has been led to infer that this fibre is something different from China grass, and has written to parties in the south for information concerning it. In answer to a request for samples, a Mr. Bruckner, of New Orleans, sends him an advertising pamphlet, with the statement that "a considerable quantity is annually received in Europe, and manufactured into fabrics of the finest quality, excellence in strength, and beauty in finish;" but on careful investigation by a clerk of the consulate at Liverpool, not an ounce of it was discovered or a man found who had seen or known anything of it. The letter of his New Orleans correspondent further says, "that it is as yet a new thing here, and judging from my experience the past year, it is likely to remain a new thing for several years to come. At present there are no manufacturers engaged in making up ramie in this country, and had sufficient been produced it would have been shipped to Europe in its raw state, merely freed from the wood." His stock of last year's growth had been exhausted by samples sent to agents to stimulate the sale of cuttings.

So far as the Department has been able to ascertain, little if any use has thus been made of the fibre, except as an aid to speculation in roots and cuttings. To forward these commercial operations, the statement is either falsely or ignorantly made that this ramie is not China grass,

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and that it will not grow from seed. It is time that honest experiment had demonstrated either the success or failure of this effort to add to the list of our producing industries. Thus far, while instances of successful propagation and vigorous growth are numerous, and even a few cases of large plantations of the *Bœhmeria* are reported, no information of *bona fide* shipments of fibre in quantity has been communicated to the Department, or evidence offered of its manufacture in this country, beyond a few experimental specimens. The economical utilization of the fibre by improved processes and skilled labor is a great desideratum; but the plunder of hopeful experimenters by extortionate prices (for a plant that will grow like willows) obtained through misrepresentation and gross exaggeration, will not be abetted by the Department of Agriculture.

A great difficulty in the way of its manufacture is found in the preparation of the fibre. Mr. Dennet, above quoted, an American now in France, is experimenting in the preparation of various fibres, with reference to the avoidance of hackling, beating, and mangling by machinery, aiming to free them from woody, mucilaginous and other substances, without affecting their strength or integrity, and using the waste in soap-making. He says: "We then bleach before spinning. I am not satisfied to employ the bleach as ordinarily used; but I prepare and make my own liquid chlorine as a bleaching agent, say 2,000 gallons at a time. I employ the *manganese and hydrochloric acid* of commerce, the former at six francs per hundred-weight or the latter at three and one-half francs per hundred-weight, and use the waste steam of the factory as heat—not fire—to effect the decomposition. When the chlorine gas begins to go off en route to the receiver, I arrest both the acid and the gas, separating one from the other, turning back the acid and letting the chlorine gas go en route to the 2,000 gallons of water with a given quantity of chloride of lime therein, which is kept in motion while the gas is coming off, 12 or 14 hours. After a given time we have a pure, limpid, strong eight and one-half to ten degree Baumé chlorine bleach, *free of acid*, free of chloride of lime, or any other deleterious or injurious agents, which are found in the "warranted" and "guaranteed" bleaching powders which are supplied by merchants and used by bleachers throughout Europe and America, and for which they have to pay from 25 to 35 per cent. for stuff no better than dirt, getting six and one-half, seven to eight degrees of chlorine, full of acid, chloride of lime, &c., of a dirty sea-green color, always indicative of acid.

The evil of the old system is, that when the bleach is employed, coming in contact with the fibre, the acid, being the heavier body, seizes hold of the fibre and retards the bleaching; the material is also filled with the chloride of lime. When the yarn or thread, or material, is dried, it is not a strong white, (especially if jute,) but a creamy white; and further, when it comes in contact with heat, the cylinder being calendered, the color shoots off, and when being printed in colors, other agents are at work; and when colors are drawn, as in carpet-making, they cannot employ successfully other than black or chocolate; the white goods and paper are injured, and finally rot. This has been proven with printers and booksellers, and the paper-makers know it well. I know this from having had 23 years' experience with paper. Why do the bleachers of England, France, America, everywhere employ the sulphuric acid bath? After the use of chlorine they dilute the acid, to be sure; but the poison once in cannot be got out, injuring their pulps, their yarn, their goods.

The great secret in treating the fibre is, first to well understand its nature, properties, and character. Some are full of rosin and silicate, and, when pulped, are black; but when bleached by this process with

pure chlorine, are white, and will not deteriorate or injure. The pulp can be put into an air-tight room, and the stock bleached by gas. By this art the manufacturer can print and the carpet-weaver can draw on any colors, and the paper-maker have a stock that he can shelve; the color will hold fast and strong and the material will not rot.

He says further concerning the China grass or ramie fibre, and the difficulty in its manufacture:

"The persons who have treated the China grass, especially the French, in attempting to give it lustre, a *glacé* surface, have so treated by acids and otherwise to get it white, as to make it crispy, glassy, (instead of *glacé*, soft, and smooth,) and brittle. The consequence is, where attempts have been made to work it up with silk, cottou, flax, wool, great difficulty has been found in making it nap."

The following correspondence is given as a suitable answer to the inquiries of this and many other correspondents:

SENATE, *March* 26, 1869.

MY DEAR SIR: I have several, in fact numerous letters, asking information touching the present status of the ramie. Will you send me a circular note giving the information concerning it.

Very respectfully, yours,

W. SPRAGUE.

Hon. H. CAPRON, *Commissioner.*

The response to the above is herewith presented:

DEAR SIR: Yours of the 26th instant, asking information relating to the present status of the ramie plant, *(Boehmeria tenacissima,)* is received.

It is the China plant of commerce, yielding a long, strong, and lustrous fibre, which has been known in the east for centuries, and of late years imported into Europe and experimented with by European manufacturers, who have met with some success, and at the same time serious obstacles, especially in the brittleness of the fibre. A considerable quantity was imported into Great Britain a few years ago, but the importation was reduced in 1867 to 584 cwts., and in 1868 to eight cwts. In eleven months of last year the cost of this fibre imported was only £32.

This plant has been propagated in this city for 14 years, and its seed has been distributed by this Department for two years. It has been planted throughout the extreme south, and everywhere grows luxuriantly, and gives assurance that unlimited quantities of material for fibre could be produced. I am not disposed further to encourage its growth until manufacturers perfect processes, and invent or adopt machinery for preparing and manufacturing the fibre so economically that a great demand shall spring up for the raw material. All depends upon the successful attainment of such an end. The farmer of this country can answer any demand for it, but will wait till the draught is made upon him.

The subject has been discussed in the Annual Report of 1865, in that of 1867, and the latest results of the culture will be given in that of 1868. I have encouraged the experiment, and yet hope to see valuable results from it, while deprecating the blind spirit of speculation in cuttings, and the circulation of exaggerated and unreliable statements concerning its habits, productiveness, price of its fibre, and the manufacturing demand for it.

Respectfully,

HORACE CAPRON,
Commissioner.

Hon. WILLIAM SPRAGUE,
United States Senate.

AGRICULTURE IN NEBRASKA.

A correspondent furnishes the following statement in reference to the resources of the State of Nebraska:

A line drawn diagonally from Maine to California will intersect a similar line from Washington Territory to Florida somewhere within the comparatively new State of Nebraska. By this simple demonstration it will be perceived at a glance that, as far as geographical position is concerned, Nebraska holds the central place in the great combination of States comprising the American Union. It has an area of about 73,000 square miles, or nearly twice that of either of the great and influential States of New York or Pennsylvania. Its population, which in 1860 was estimated at 28,000 persons, has now probably reached five times that number. Nebraska is strictly an agricultural State. It has neither forests, water-power, nor minerals, not even coal, to any considerable extent, so far as is yet known.

The climate is of a medium temperature. The thermometer may sometimes in the summer reach 100 degrees at noon, but the strong breezes from the Rocky mountains always render the night cool and comfortable. Winter weather commences about the first of December, and although thaws and rains prevail a considerable portion of the time until the first of April, balmy and delightful days, and even weeks, intervene, the mercury in the meanwhile descending below zero only on rare occasions.

The topography is entirely characteristic. No other section, not even those which are formed like it, high rolling prairie countries, possess the same peculiarities. There are, as a general thing neither plains nor hills; the whole surface looks as if cast in a mould. There is no level ground except at the margins of the streams, which prevail only at rare intervals, and then it scarcely ever reaches an extent of more than 200 or 300 acres in any one place. The prevailing form of the surface is a succession of ridges gently and smoothly rolling like so many great wrinkles on the brow of nature, but without uniformity, and lying towards each other at every conceivable angle. These irregularities of surface are so gentle, and the hillocks so round and smooth, that no impediment is experienced to the cultivation of the land.

In respect to streams and timber there is a deficiency, annoying to all settlers, and which, in the minds of many, is an obstacle altogether insurmountable. Except on the margins of the water-courses, or where the enterprising settler has supplied the deficiency by artificial aid, the State is destitute of trees. Whenever the prairie fires are kept in check, however, the timber will grow rapidly and vigorously. The principal varieties of trees are the oak, hickory, and cottonwood. In four or five years the latter will attain the size of a man's arm, and become available for fuel and other useful purposes.

The streams are uniformly deep and sluggish, but narrow. During the droughts of summer the banks are often left six or eight feet high, as perpendicular and smooth as if cut with a spade. Although the streams have a tendency to dry to the bottom throughout the whole extent, there are at intervals, in the beds, springs which never yield to the heat. In tracing the course of a stream, these springs or pools are to be found at the distance of every half mile or less. They vary in size from 5 to 50 feet in breadth, and from 10 to 100 feet in length. They are generally oblong in shape, and are concealed from view by the tall grass with which they are surrounded, unless immediately approached. Without this wise provision of nature for supplying the vast herds of the buffalo which once grazed here, these animals could not have subsisted during the summer. The water in these springs is generally clear, cool, palatable and abundant. The well water of Nebraska is also of excellent quality and easily obtained. In many instances it is not necessary to dig more than 15 or 20 feet; and, in some cases, good water has been obtained at the depth of 10 feet. The soil, although easily penetrated by the spade, has a tenacity which renders unnecessary the walling of wells.

The drought during summer is the great impediment to agriculture in Nebraska; but last season the counties bordering on the Missouri river were unaffected by it, and the supply of rain in that section was abundant. This difference is accounted for in the minds of many practical observers in the attraction furnished to passing clouds by the water of the Missouri and the growth of heavy timber on its banks.

From the nature of the soil, however, and the peculiarities of the surface, a protracted period of dry weather does not affect vegetation here as in many localities. The rain, on falling, fills the numerous gulleys and is rapidly absorbed by the ground. The hot sun and fresh breezes on the tops of the hillocks causes a free evaporation, but excessive dryness is prevented by a constant supply of moisture, brought to the surface by capillary attraction. It is a well-known fact that, in mountainous countries, springs which are dry in rainy seasons, give forth a copious supply of water when the soil has been parched with heat for any considerable time. The same law, on a more extended scale, seems to be in operation throughout Nebraska; for experience shows that a protracted, heated, and dry term does not have the effect in parching vegetation growing upon her irregular surface that would follow in a flat prairie section.

The great pest of Nebraska is the grasshopper or locust, yet it has this affliction only in common with other localities.

The soil has the dark color common to all prairie countries; but the tinge is more inclined to gray than is observable in the soil of Illinois. The loam does not extend to the same depth as in that State, and contains a larger proportion of silica. After digging a few feet, earth of a bright yellow cast is reached.

The native grass affords to the casual observer no special indication of fertility. It is by no means of rank growth, not being more than 8 or 10 inches high, sparsely set, and in limited quantity. Few weeds or shrubs are to be seen. The grass in the low lands, however, attains a vigorous size, and often reaches as high as a man's head, from which the settler obtains his hay for winter use.

The wild grass, although apparently dry and harsh, is quite nutritious; and cattle thrive on it marvellously. This section was in former times the favorite resort of the wild cattle, whose instinct led them to the best pastures.

In general appearance there is nothing about Nebraska to gratify the imagination except where cultivation and art have beautified the landscape. When Lewis and Clark looked upon the locality in the unbroken solitude of nature, I do not wonder that they termed it the "Great American Desert;" but time and the pressure of emigration westward have demonstrated the grossness of the misnomer.

The climate and soil are favorable to the production of every variety of grain and grass. Wheat and corn flourish to an extent not surpassed in any of the States of the great West. It is not uncommon for the farmer to raise 30 bushels of the former and 75 of the latter per acre. Oats and barley yield in the same proportion.

All kinds of vegetables, potatoes, beets, carrots, cabbages, onions, &c., attain great perfection.

Attempts at raising tobacco and sorghum have been attended with considerable success.

There are considerable numbers of wild grape vines and plum trees in the timber along the water-courses, but the adaptability of this soil and climate to general fruit culture has not yet been fully tested. Fruit trees have been planted in considerable numbers, but have not yet sufficiently matured to demonstrate their bearing capacity. The apples, pears, grapes, and plums, thus far produced, are of the first quality. Berries of various kinds develop readily and fully; and I believe that care and experience will produce the same results with the larger fruits.

For stock raising Nebraska has ample resources. The vacant lands of the State and of the railroads give the herdsman a wide range. A herd law, which renders fences unnecessary and acts as a protection to the grain grower, is an actual benefit to the stock raiser. Much attention has been devoted to this department of agriculture in various sections. The State was the natural home of wild horses and cattle; and the Indian ponies, in proportion to their bulk, are as hardy a race of animals as can be found anywhere. The air is clear and healthful, the climate temperate, the surface of the ground irregular, the grasses nutritious and abundant, together with an exhaustless supply of all other varieties of food. Thus far stock raising has met with good success; and Nebraska is producing many fine horses and mules, and has some excellent specimens of the best breeds of horned cattle and sheep, the high ground and the dry and salubrious atmosphere being particularly favorable to the latter.

A large amount of the land of Nebraska is withheld from settlement by railroad grants and speculators. The homestead or pre-emption settler is the only party who can now receive the advantage of the government's liberality. The fact that there is a constant stream of this class of immigrants pouring into the State is a sure indication of a sentiment prevailing in the older States in accordance with the views herein expressed; and I believe they cannot seek a location where practical sense and vigorous industry will meet a more ample return. They must not expect to find a land flowing with milk and honey, or imagine that ease and repose await them. They will not find all the comforts and necessaries of life ready prepared. Their paradise will only come from the sweat of the brow. The pioneer's hope rests on a willing heart and a ready hand. Luxuries he must not expect; comforts he will only find by a cheerful contentment with his lot. If he is destitute of money and has but one poor yoke of oxen, and a frail covering for his wagon to protect his wife and children from the cold night winds, he need not despair. With the example in his mind of others who have preceded him, he may well feel that he has at his command resources which will not fail him.

Necessity is the mother of invention, and the Nebraska settler, in default of trees to build a log-house, does not appeal in vain to mother earth for shelter. He can select the favorable side of a ridge and prepare a "dug-out." This architectural anomaly is worthy of a description, and some idea of its mode of construction may be valuable to those who contemplate trying a pioneer life. The settler cuts into the bank an opening of the size required, digging two or three feet below the level of the surface in front. The plastic nature of the soil allows him to dress the sides and the floor as smoothly as if the cavity had been cut from a bed of solid marble by the chisel of a skilled workman. He then proceeds to the nearest bottom, and cuts a couple of forked saplings, of which to make his door posts. Having placed horizontally on the prongs another sapling, he pins to the middle of it another prong to support the ridge-pole. He then has the front part of his roof; the rear being in the bank is easily managed. He then places on top such twigs and branches as he can find, and perhaps a

board or two, and overlays compactly with sods and prairie grass. He then has a roof that will shed water, perhaps not as effectually as boards and shingles, but which for want of them must be made to serve the purpose. As a finishing stroke, all the openings in the sides, except a door and window, are compactly filled in with layers of sods. Fireplaces and chimneys are constructed in the same primitive style, but a common substitute for them is a small cooking stove, with the pipe projecting through the roof. Shelters for cattle are made nearly in the same way, the front being left open.

Another mode of constructing a dwelling is to use sods, instead of bricks, and prairie mud instead of mortar. These materials are a substitute for the sun-hardened tiles and adhesive clay of New Mexico, and the habitations are dignified in this section by the name of "adobe houses."

In these rude and uncouth structures the patience and efforts of the housekeeper are doubtless severely taxed to attain comfort and render appearances comely, but I have seen in them an order and neatness which would be sought for in vain in some more pretentious residences.

In some of the more favored locations the settler has the materials for stone or log-houses. Were it not for the scarcity of fuel, good bricks might be manufactured. Log, stone, or brick houses are extremely rare. The most usual kinds are those described, or the small frame shanties, built of imported lumber, costing from $75 to $100, which are generally the choice of men of the requisite means. I doubt, all things considered, if the latter are as comfortable as the former. Any of these structures come within the requirements of the homestead law, which demands that the settler's dwelling shall have a window, door, floor, and roof, and be a comfortable house to live in.

The first duty of the immigrant, after having provided a shelter for himself and family, and one for his cattle, is to prepare his ground for a crop. The best time for breaking prairie is between May and August, although some continue this work all the year round, when the weather will permit. Between the months named the sap is running upwards, and the roots will die, which is not the case when it is descending. Ground broken later becomes overgrown by means of the reinvigorated roots of the grass, and it is found very difficult to eradicate them.

Recently a company having 30,000 acres on Salt creek, near Lincoln, the capital of the State, introduced a steam plough, costing $10,000, from Leeds, England, and designed continuing operations all winter. They broke to the depth of seven or eight inches, entirely covering the sod; the result of the experiment remains to be seen. The usual depth of breaking is about two inches, or just enough to detach the roots and peel off the sod.

The settler who has means at his command will have his own teams and hire assistance, or, if he chooses, can get his ground broken by contract at $3 50 per acre. But the majority have neither money nor sufficient teams; perhaps only one yoke of cattle or a span of horses. The method of such is to "change work" with their neighbors, uniting their own and the labor of their teams. In this humble way they commence operations and lay the foundation of competency and independence.

The soil is allowed to remain undisturbed until the spring opens, when it is easily pulverized with the harrow, and is prepared for the seed without additional labor.

No successful attempt has been made to raise winter wheat in Nebraska. The ground, in consequence of the high winds, is kept bare of snow, and the sprouts yield to the rigor of the weather.

One of the resorts of the pioneer to obtain a crop, when he cannot wait for the full preparation of the ground, is to plant "sod corn." Having broken the prairie in the spring and allowing it to remain until planting time without further attention, he then proceeds to raise the sod with a hoe, and, at proper intervals, throws in a few grains of corn, pressing back the sod with his foot; or, if he prefers, he can cut the sod with an axe, covering the grains, of course, in the same way. Often a crop of 30 or 40 bushels of corn to the acre is raised by this method.

Having provided for a crop, the next thing which will occur to the sagacious farmer is to make an effort to supply the deficiency in timber. He will select a favorable location and after ploughing several furrows to prevent the encroachment of the prairie fires, he will proceed to plant on the area within the requisite number of trees. This work is done by making furrows at intervals of three or four feet and then with a hoe securely setting the roots of the twig. The cottonwood, on account of its rapid growth, is generally selected. A great abundance of little trees of this species is obtainable from the banks of the Missouri. The lack of fuel is at present one of the greatest drawbacks to the prosperity of Nebraska; but if the present attention to tree culture is continued, it will in 15 or 20 years have a greater abundance of timber than many of the older States.

I commenced by referring to the central location of Nebraska, and shall conclude with mere allusion to the advantages which her position as a great agricultural centre afford. With the mining regions of the Rocky mountains on one side, and the hungry east on the other, as the means of communication radiate to all points of the compass, her abundant crops, her flocks and herds, will find their natural markets, and rich returns will come back to fill the farmers' heart with gladness; civilization will extend its full power, and every boon within the scope of rational human aspiration be granted her people.

CASTOR-OIL BEAN.

The culture of the *Palma Christi* is extending in Texas and in Florida, as well as other southern States, and is found to be profitable. This plant delights in a deep, dry, sandy loam, and is claimed to be, like clover, an ameliorator of the soil, and to such an extent that land owners have offered the gratuitous use of land to be planted in this crop. The Department is frequently called upon for information concerning its culture. It is said to be a native of India, but has been dispersed throughout the temperate portions of the civilized world. While it grows only to a height of about three feet towards the northern limit of its culture, it becomes a plant of eight or ten feet in semi-tropical regions, resembling a small tree.

The oil is extracted by boiling the seeds, or by pressure in a hydraulic press; the latter process yields oil of the best quality. In India it is mixed with water, and the water evaporated. The hydraulic press was used in St. Louis as early as 1847. A press, patented by Mr. Latourette, October 28, 1851, greatly increased the product. One of these presses is estimated to use 150,000 bushels of beans per annum, making 400,000 gallons of oil.

A thorough preparation of the soil is required, as for planting corn or any other hoed crop. The hills should be six feet apart in good soil in latitude 30° to 35°. If very rich, or further south, the plants will be near enough at seven feet. In more northern locations, as in southern Illinois and Missouri, the distance might be five feet, but not less than four. It is convenient to leave a space every half dozen rows sufficient for the passage of a team in gathering the beans. Two quarts of seed will plant an acre. Soaking the beans in hot water before planting will assist germination. But one or two plants should be left to grow, though half a dozen or more might be allowed for the use of cut-worms. The culture is simple as that of the common bean or maize, nothing being requisite but frequent loosening of the surface with a cultivator until the plant begins to monopolize the field and shade the ground. Frequent culture, as with corn, is important, but care should be taken not to injure the stalks by careless movements of the team.

The harvesting commences from the first to the middle of August in this country, when the pods begin to turn brown, and it should not be delayed till the husks open and the beans are expelled. The entire spike, containing many pods, should be cut off. Drying yards, with exposure to the sun, the surface well rolled, have been employed, but are not deemed necessary. The beans should be kept dry, as sprouting nearly destroys their value, and cleanliness is important. The price varies considerably, according to the importation and production, and also locally from proximity to market and other causes. It has been as high as $5 per bushel within three years, and as low as $1 25. Twenty bushels per acre is an average yield, though three times as much has been obtained.

DECREASE OF WOOL-GROWING.

In a recent address before the Boston Social Science Association, Edward Atkinson said:

Our supply of leather from our own cattle is entirely insufficient, being only two-thirds of what we need; and this insufficiency is greater now than formerly, from two causes. The first is the excessive demand for beef during the war; the second, the unnatural stimulus given to the raising of sheep rather than of cattle, caused by the so-called protective duty on wool.

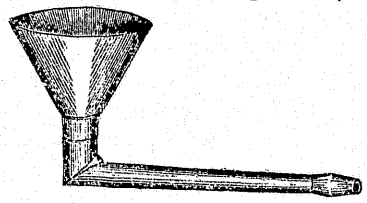
The plain inference that cattle-raising has declined and wool-growing advanced since the enactment of the present wool tariff, and as a result of such enactment, is correct neither in one nor the other branch of this statement. On the contrary, cattle have increased and sheep diminished, but not as a result of the passage of that law. The diminution in sheep has been heavy—not less than 20 per cent.—while the increase of cattle has been very slight. The need of woollens during the war excited an extraordinary demand, in the supply of which home producers shared with foreigners. The high price of gold acted as a protection, but the cattle and wool interests enjoyed that advantage in equal proportion. When the tariff was enacted a reaction in wool had commenced, not only in the United States, but also, in a less degree, in every wool-producing country. The law has simply broken the force of that reaction, and prevented a ruinous sacrifice of all our flocks, which would have bankrupted thousands, without benefiting in the slightest degree the cattle farmer, or cheapening beef or hides.

SMUTTY CORN POISONOUS.

Professor John Gamgee communicates the following:

In the Germantown Telegraph of the 13th instant there appears a paragraph on the poisonous properties of smutty corn, which may mislead. There is no doubt whatever that in West Virginia, Iowa, as well as New York and other States, an abundance of smutty corn has been fed to cattle with disastrous results. Combined with an excess of other food it does little injury, especially if cattle are supplied freely with fresh water. It should be used very sparingly, if at all, as the smut or fungus—*Ustilago maydis*—is a poison that acts deleteriously on the alimentary canal and the nervous centres.

Referring to treatment, however, some one has given me credit for a much more liberal use of medicines than I am accustomed to, and my prescription is not correctly stated. A pound of epsom salts, with or without half an ounce of aloes, and two drachms of ginger, given in half a gallon of tepid water, will usually overcome the constipation. Sulphur is a convenient substitute sometimes, given in treacle or gruel; but five pounds at a dose is about five times as much as there is any necessity for. Farmers will find that one or two four-ounce doses of common salt will make the cattle drink greedily; and either plain water or linseed tea, *ad libitum*, will prove a good means of affording relief. In all affections attended with constipation of the bowels, warm water injections prove invaluable. A device similar to that shown in accompanying cut is very easily made by any tinman, and will be found a cheap and effective substitute for a syringe.



WHEAT IN MINNESOTA.

The following statement shows the amount of grain and flour at Winona, and at the stations of the Winona and Saint Peter railroad, on the opening of navigation this spring:

	Bushels.	
Winona, in elevator	299,008	
Winona, in warehouse	104,000	
Winona, 9,050 barrels flour, reduced to wheat	45,250	
		448,258
Minnesota City		3,000
Lewiston		10,518
Utica, estimated in warehouses		3,500

		Bushels.
Saint Charles		25,137
Eyota, in elevator	28,951	
Eyota, in warehouses	10,000	
		38,951
Rochester, in elevator	32,966	
Rochester, in warehouses	12,000	
		44,966
Kasson, in elevator	23,307	
Kasson, in warehouses	6,000	
		29,307
Claremont		21,000
Waseca		103,357
Byron, Meridian, and Havana, estimated		10,000
Total		737,994

THE WESTERN GRASSHOPPER.

Mr. B. O. Driscoll, of Doniphan City, makes the following suggestions in regard to the grasshopper or locust of the western States:

"I would recommend ploughing all clear naked spots, roadsides, &c., especially north, and when eggs are found along hedge rows the surface should be scooped into a ditch or furrowed, and then covered deep with a plough. Where there is danger of an incursion of those wingless grasshoppers, I would suggest a ditch, as is often used in Montana and elsewhere, or a close fence four feet high, or, better still, a bed of straw in their line of march, to be burned when their advance guard are passing over, or have gathered upon it, when those not destroyed will turn back and seek other fields of pasture. As to the kind of crop to plant, I have no suggestions to make, for I find that no *green thing* is exempt from their ravages, and that when one crop is wanting another will suffice, but that hemp, cabbage, and barley are preferred to many other kinds, and to protect cabbage and potatoes, I would recommend strong salt water. Air-slacked lime will answer a good purpose for many kinds of crops after the salt water. Many fruit trees have been injured by the grasshoppers, but none have been killed to my knowledge."

FOREST CULTURE.

The legislature of Nebraska has passed a law exempting from taxation for five years $100 worth of the real property of each tax-payer for each acre of forest trees he shall plant and cultivate, provided that the trees shall not be planted more than 12 feet apart and shall be kept in a healthy and growing condition; and an exemption of $50 worth of real property for each acre so cultivated, whose distance shall not exceed 33 feet apart.

The Northern Illinois Horticultural Society recently adopted resolutions urging the legislature of that State to pass a law for the encouragement of the planting of forest trees, either by remitting State taxes or by giving premiums for plantations of useful forest trees. The society

also adopted the following list of timber trees for cultivation in northern Illinois:

"*For groves.*—European larch, black walnut, butternut, white pine, tulip tree, and white, red, and blue ash.

"*Nut-bearing trees.*—Butternut, black walnut, shellbark hickory, and chestnut.

"*Shade and ornamental trees.*—White elm, silver maple, white ash, mountain ash, tulip tree, honey maple, honey locust, rock elm, and cucumber tree.

"*Evergreens.*—Norway spruce, white spruce, Austrian pine, white pine, red pine, balsam of fir, arborvitæ, and red cedar."

ADULTERATION OF SEEDS.

The adulteration of seeds has become so great an evil in England that leading agriculturists of that country are calling loudly for special legislation in reference to the matter. It is proposed that this dishonesty shall be declared a crime by act of Parliament, to be punished by fines graded according to the various forms of the offence. While such a law is regarded as a desideratum, it is deemed of even greater importance that farmers should educate themselves in the detection of such adulterations as a safeguard stronger than the law itself. The subjoined table, showing the prices and germinating powers of different samples of clover seed, is taken from the London Gardners' Chronicle. The specimens reported on were obtained in the market. Most of the samples contained a proportion of weeds, which were put aside, the clover seeds alone being subjected to trial:

Samples.	Price per cwt.	Percentage of dead seeds.	Percentage of germinating seeds.
	Shillings.		
1. Red clover	56	32	68
2. Do	32	50	50
3. Do	51	40	60
4. Do	66	5	95
5. Do	74	4	96
6. Do	80	5	95
7. Do	70	5	95
8. Do	75	3	97
9. Do	60	40	60
10. Do	27	70	30
11. Do	75	10	90
12. Do	72	5	95
13. Do	80	5	95
14. Do	66	60	40
15. Do	70	15	85
16. Cow grass—clover	90	4	96

BRITISH IMPORTS OF COTTON AND WHEAT.

Cotton.—The following table from official returns shows an increase of only five per cent. in the cotton imports of Great Britain for 1868 over those of 1867. This country still heads the list, with an increase of over eight per cent., while British India fails to furnish as much as in 1867. The proportion of the United States receipts to total imports is also larger, being above 43 per cent. of the whole supply. The statement is as follows:

Cotton, raw.	Quantities imported.	
	1867.	1868.
	Cwts.	*Cwts.*
From United States	4,715,733	5,128,971
Bahamas and Bermuda	10,623	737
Mexico	22	
Brazil	628,761	882,114
Turkey	57,024	40,983
Egypt	1,127,541	1,153,419
British India	4,449,259	4,408,095
China	4,707	
Other countries	278,981	243,574
Total	11,272,651	11,857,893

Wheat.—The wheat deficit of Great Britain, always comparatively large, was less than usual in 1863, and the imports were consequently reduced from 34,645,569 cwts. in 1867 to 32,639,768 cwts., or 60,927,566 bushels. This country has advanced its position to the second place, displacing Prussia; Russia still occupying the first in supplying the bread deficiency. The United States sent 5,908,149 cwts., or 11,028,544 bushels. This is quite as much as could be expected in the present condition of production, more than the future will probably average, and more perhaps than is desirable to send abroad, as we can never expect to gain anything but the impoverishment of lands and the dwarfing of national industries by exporting cereals or other bulky products of agriculture. This export, respectable as it is, is but 18 per cent. of the receipts of Great Britain from foreign sources.

In addition to the wheat, the amount of flour imported was 3,093,022 cwts., which is a slight decrease. Of this the United States sent 676,192 cwts., or 386,395 barrels, equivalent to 1,931,975 bushels, which added to the unmanufactured grain would swell our wheat exports to 12,960,579 bushels.

	Imported.		Entered for home consumption.	
	1867.	1868.	1867.	1868.
Wheat:				
From Russia ..... cwts..	14,025,236	10,053,617	14,159,861	10,168,271
Denmark ..... cwts..	418,012	654,419	422,509	668,526
Prussia ..... cwts..	5,572,263	4,584,742	5,603,694	4,602,797
Schleswig-Holstein and Lauenburg. cwts..	127,222	45,412	127,632	46,259
Mecklenburg ..... cwts..	651,884	647,205	654,569	647,684
Hanse Towns ..... cwts..	700,935	756,654	705,794	764,802
France ..... cwts..	597,405	56,414	599,402	56,755
Illyria, Croatia, and Dalmatia cwts..	542,635	1,004,701	543,964	1,011,147
Turkey, Wallachia, and Moldavia. cwts..	2,446,638	3,049,088	2,455,311	3,068,555
Egypt ..... cwts..	1,451,774	3,219,536	1,458,457	3,241,313
United States ..... cwts..	4,188,013	5,908,149	4,219,966	5,954,911
Chili ..... cwts..	1,946,227	1,309,575	1,957,386	1,309,575
British North America ..... cwts..	683,127	557,443	684,492	559,321

HUNGARIAN WHEAT EXPORTS.

The following figures exhibit the exports of wheat from Hungary for the several years ending July 1, 1868:

Years.	*Centner.	Years.	Centner.
1855–'56	2,449,284	1862–'63	8,381,761
1856–'57	4,651,200	1863–'64	4,452,991
1857–'58	3,289,270	1864–'65	4,310,218
1858–'59	2,242,072	1865–'66	4,471,003
1859–'60	2,051,032	1866–'67	8,571,438
1860–'61	6,800,758	1867–'68	30,801,657
1861–'62	8,737,659		

*113.44 pounds.

ENGLISH CEREAL CROPS OF 1868.

The following table, from the Mark Lane Express, gives a condensed view of the aggregate results of the reports from 536 correspondents from every part of England, the details of which were given in our last monthly report:

Classification.	Wheat.	Barley.	Oats.	Beans.	Peas.
Failure			13	23	6
Two-thirds under average		4	5	22	2
One-half under average		29	36	43	16
One-third under average	1	32	66	71	20
One-fourth under average		11	18	36	18
One-fifth under average		4	8	1	1
Under average	12	252	241	142	166
Average	134	135	93	68	150
Over average	288	25	5	4	18
One-fifth over average	7	4			
One-fourth over average	38	3	2	1	6
One-third over average	18	1			
One-half over average	20	3	2		
Two-thirds over average	9		1		
Double the average	1				
Total	528	503	490	411	403

In analyzing the above table we find that out of 528 returns on the wheat crop, there are only 13 under an average, against 134 averages and 381 over an average. In addition to this, the average weight and quality of the grain was from two to three pounds per bushel greater than usual, adding from four to five per cent. to the product of flour, of which the excess consists, the bran and offal of good wheat being lighter and less in quantity than that of inferior grain. The returns of barley show 332 under, against 171 average and above it. The bulk of this crop was too thin for malting, having been deteriorated in quality as well as quantity from too hasty ripening, especially on light soils. It is estimated that the crop is from one-third to two-fifths of an average, and a large proportion of this not fit for malting and available for grinding purposes and seeding only. Out of 490 returns on the oat crop there are 387 under, against 103 average and over, and the total deficiency is estimated at two fifths. The bean and pea crops also show considerable deficiency.

AGRICULTURAL PRODUCTION IN PRUSSIA.

The Prussian government has a statistical system by which the productions of agriculture are reported yearly. The following is the official statement of the results of the harvest of 1868 in the different provinces, the figures being less or more than 100, as they represent more or less than an average crop:

Province.	Wheat.	Rye.	Barley.	Oats.
Prussia	94	84	76	73
Brandenburg	100	90	73	72
Pomerania	101	97	81	79
Silesia	101	82	76	80
Posen	104	97	74	75
Saxony	103	94	88	87
Westphalia	99	104	79	76
Rhenish Provinces	95	96	84	83
Hohenzollern	92	98	86	91
Hanover	102	100	82	78
Schleswig-Holstein	101	93	72	72

The average production for the whole kingdom of Prussia was thus as follows last year: Wheat 99, rye 94, barley 80, oats 79. For 1867 the corresponding average was: Wheat 74, rye 74, barley 87, oats 97.

Statement of the number of live stock in the United Kingdom and in various foreign countries, according to returns furnished by the statistical departments of the respective countries.

Countries.	Date of returns.	Cattle.			Sheep and lambs.	Pigs.
		Cows.	Other kinds.	Total.		
Great Britain	1868	2,143,895	3,280,086	5,423,981	30,711,396	2,308,539
Ireland	1868	1,463,058	2,157,294	3,620,352	4,822,444	862,443
Total United Kingdom, (including Isle of Man and channel islands.)	1868	3,625,137	5,458,279	9,083,416	35,607,812	3,189,167
Russia in Europe, (exclusive of Poland and Finland.)	(*)	.....	.....	22,816,000	39,315,000	9,517,000
Russia in Asia	(*)	.....	.....	2,628,000	5,815,000	580,000
Sweden†	1866	1,235,000	750,000	1,985,000	1,650,000	390,000
Norway	1865	.....	.....	953,036	1,705,394	96,166
Denmark proper	1866	811,831	382,030	1,193,861	1,874,052	381,512
Prussia	1867	4,865,898	3,130,920	7,996,818	22,262,087	4,875,114
Wurtemberg	1867	465,943	445,070	911,013	655,856	254,883
Bavaria	1863	1,521,113	1,641,274	3,162,387	2,039,963	921,456
Saxony	1867	413,755	211,505	625,260	304,087	325,564
Holland	1866	.....	.....	1,271,563	1,076,374	321,534
Belgium‡	1856	.....	.....	1,257,649	583,485	458,418
France	1862	5,781,465	8,415,895	14,197,360	33,281,592	5,246,403
Spain	1865	.....	.....	2,904,598	22,054,467	4,264,817
Italy‡	1867	.....	.....	3,708,635	11,040,339	3,886,731
Austria	1864	6,094,865	7,565,457	13,660,322	16,573,459	7,914,855
Switzerland	1860	627,116	365,779	992,895	445,400	304,191

*Average of 1859 to 1863. †Estimate returns. ‡Results of census of 1866 not yet known.

THE NETHERLANDS AND THE PROJECTED EXHIBITION.

International exhibitions are coming thick and fast upon us. One has been announced for Holland in the autumn, while others in prospective are looming up in the distance. It is a bold step for a little kingdom like Holland, inviting exhibitors from all countries, and it may be interesting as well as instructive to examine the capacity and resources of this little territory. The superficies of the Netherlands is 3,284,000 hectares,* or about 500,000 hectares more of the lands more or less submerged of the Zuyder Zee and Dollard are included. The provinces of Zealand and of Holland have added to their territory by means of dikes 263,000 hectares, of which 180,000 hectares are highly fertile, argillaceous land, producing madder and cereals. The highest elevation of this extremely level country is scarcely more than 600 feet above the level of the sea. The population of the kingdom is only 3,605,000, of which 254,000 are employed in agricultural pursuits. The cultivated lands include 807,104 hectares; pastures, 1,317,000 hectares; forests and woodlands, 225,687 hectares.

The agricultural products were, a few years since, stated to be as follows, in hectolitres:† wheat, 1,741,222; rye, 3,671,000; buckwheat, 1,244,000; barley, 1,509,000; oats, 3,700,000; beans and peas, 1,000,000; potatoes, 14,000,000. The total value of these was estimated at £17,000,000. The values of the products of the forests, gardens, and pastures have not been estimated. The value of the live stock in the kingdom is estimated at over £16,000,000. The last official returns (in 1866) the Netherlands possessed 254,019 horses, 1,308,008 cattle, 967,312 sheep, 295,814 hogs, 123,198 goats, and 2,848 asses and mules.

Among the manufacturing industries of Holland may be mentioned

*Hectare, 2.4711 acres. †Hectolitres, 2.83782 bushels.

brick-yards, tile-works, and potteries to the number of 500 to 600, in Gelder, Overyssel, and South Holland, the annual make of bricks being about 400,000,000; 400 to 500 distillers of Geneva or Hollands, of which 221 are in Schiedam; more than 300 manufactories of tobacco and cigars, principally at Amsterdam, Utrecht, and Eindhoven, which export largely to Germany and North America; many factories where madder and garancine are prepared; 300 to 400 oil-crushing mills; steam acid factories; paper mills; sugar refineries, producing 126,000 tons annually; rice-mills, &c., besides the cotton, flax, and woollen industries.

The projected exhibition is to be held in August and September, principally of articles of domestic economy, suited chiefly to the wants of the working classes, and which, at a low price, combine usefulness with solidity. The articles principally sought are plans and materials for dwellings, household necessaries, clothing; food, such as corn-chandler's wares, preserved meats, drink; modes of preparing the same; workmen's tools; means of moral, intellectual, and bodily development; and finally, reports, statistics, and regulations of associations for promoting the well-being of the working classes. The exhibition is to be held in the Crystal Palace at Amsterdam, and promises to be a success.

FACTS FROM VARIOUS SOURCES.

The legislature of Maine has enacted a law providing that commercial manures sold in that State shall have affixed to every barrel, bag, or parcel thereof, which may contain 50 pounds or upwards, a printed label, specifying the name of the manufacturer or seller, his place of business, and the percentage which it contains of soluble phosphoric acid, of insoluble phosphoric acid, and of ammonia. Dealers failing to comply with this provision, or who shall affix false labels, are to be punished by fine of $10 for the first offence and $20 for every subsequent offence; and any purchaser may recover in an action of debt 25 cents for every pound of soluble phosphoric acid, six cents for every pound of insoluble phosphoric, and 35 cents for every pound of ammonia, deficient. The act takes effect on the 1st of July next.

The Maine board of agriculture has directed the several agricultural societies receiving bounties from the State, to offer in premiums for the encouragement of wheat culture a sum, equal to one-fourth of the bounty so received during the years 1869, '70, '71.

During the month of December, 1868, the following entries were made at the land office at Beatrice, Nebraska: Entered by the State of Nebraska, 32,400 acres; homestead entries, 6,100 acres; pre-emptions, 3,200 acres; cash entries, 2,660 acres; land warrant entries, 860 acres; final homestead entries, 640 acres.

It is stated that the coal fields of Tennessee cover an area of over 3,000,000 acres.

A hog owned by J. M. McElheny, New Hudson, Alleghany county, New York, fed exclusively upon whey, weighed 687 pounds, dressed.

An unofficial statement of our imports from the British provinces for the last fiscal year makes the total value $28,599,139, on which the duties collected were $3,290,916, or 13 per cent. only; while American farmers, in the direct and indirect taxation growing out of the war of the rebellion, suffer a burden four times as great, yet a few traders would like still more of that sort of "reciprocity."

The Maryland Agricultural and Mechanical Association has recently purchased a tract of 72 acres of land, lying two miles northwest of the city of Baltimore, upon which it is contemplated holding an exhibition during the last week of October. The State and city authorities have each appropriated $25,000 for the use of the association, and the citizens of Baltimore have also subscribed $25,000, and it is believed that an exhibition will be had creditable to the State of Maryland and surpassing anything of the kind ever gotten up within her limits.

The township trustee of Corydon, Harrison county, Indiana, has paid out to farmers for loss of sheep by dogs for the year ending March 1st, $398, at the rate of $2 per head. The amounts paid out by the other townships would probably make a total of $1,000 for the county.

Thirteen years ago a gentleman purchased 22 acres of land near Los Angeles, California, for $200. The first year he planted nine acres of vines and fenced the entire tract with a live fence. The remaining 13 acres have since been planted in trees, of which there are bearing 212 orange trees, 100 lemon trees, 29 walnut trees, 300 apple trees, 200 peach trees, and a few lime, plum, quince, fig, &c. The nine acres of vineyard produced $950 after paying expenses of cutting, being a net profit of over $100 per acre; and the fruit crop from the 13 acres (including the oranges, now beginning to ripen, estimating them at the prices realized last year) amounted to $2,650, making the net receipts from the crops produced on the 22 acres last year about $3,000, most of the labor being performed by the owner. The live fence last year supplied a surplus of fire-wood, which was sold at good prices.

The San Diego Union states that out of 55,000 head of cattle that started from Texas during the past year for California, not over 5,000 reached that State.

J. H. Lick, Lick's Mills, Santa Clara county, California, planted acorns of the cork oak in 1858, and now has 85 trees from 15 to 20 feet high and from 8 to 10 inches in diameter.

The lumber products of the western counties of Michigan for the year 1868 are estimated as follows:

County.	Lumber.	Lath.
Muskegon	300,000,000	130,000,000
Ottawa	200,000,000	100,000,000
Oceana	70,000,000	40,000,000
Mason	65,000,000	30,000,000
St. Joseph, Holland, S. Haven, G. Traverse, &c	20,000,000	10,000,000
Manistee	125,000,000	70,000,000
Totals	780,000,000	380,000,000

In addition to the above not less than 50,000,000 shingles and a large number of staves, railroad ties, pickets, &c., were produced, making a grand total much larger than the above figures indicate.

In the Pahranagat district, in the southeastern part of the State of Nevada, distant from Austin perhaps 180 miles, is a remarkable mountain of salt about 70 miles south of the mines. It is reported to be about five miles in length and 600 feet in height. The body of salt is of unknown depth. It is chemically pure and crystalline, and does not deliquesce on exposure to atmosphere. Like rock, it requires blasting from the mine, whence it is taken in large blocks, and is as transparent as glass.

In a paper read before the Botanical Society of Edinburgh, Dr. Lindsey states that in studying the literature of Greenland lichenology, in connection with an examination and determination of the lichens collected by Robert Brown in west Greenland in the course of the exploring expedition of 1867, he was surprised to find that there was no recorded modern list of the lichens of that country, and he has accordingly drawn up a list of all found, or recorded to have been found, in Greenland up to the present day, compiled from all sources of information accessible to him, the list including 268 species and varieties.

A French chemist states that chloride of lime, if it happens to be in the slightest excess, has a tendency to give a yellow tinge to the pulp; that all energetic acids, without exception, tend to give a reddish color to the paper when exposed for a long time to the effect of the sun or of moisture, and that the least trace of iron is sufficient in a very short time to blacken the pulp. He says that he has succeeded in avoiding all these inconveniences by the use of the following mixture: For a hundred weight of wood pulp he employs 400 grams (four-fifths of a pound) of oxalic acid, which has the double advantage of bleaching the coloring matter already oxidized, and of neutralizing the alkaline principles which favor such oxidation. He adds to the oxalic acid one pound, or a little more, of sulphate of alumina, entirely deprived of iron. The principal agent in this mode of bleaching is the oxalic acid, the power of which over vegetable coloring matters is well known. The alum has no bleaching power of its own, but it forms with the coloring matter of the wood an almost colorless lake, which has the effect of increasing the brilliancy of the pulp.

According to statistics published by the chamber of agriculture and commerce of Turin it appears that the quantity of silk cocoons sold throughout Italy last year amounted to 622,473 myriagrammes* of the value of 45 327,626 francs, being an increase in quantity of 188,231 myriagrammes and in value of 16,485,158 francs over the yield of 1867. To this quantity must be added 128,849 myriagrammes brought to market but not sold, against 2,124 myriagrammes the preceding year, making the total increase 209,478 myriagrammes, and in value 18,682,526 francs. Taking into account the quantity of cocoons which were sold privately, the total production of cocoons during the year may be estimated at 1,312,228 myriagrammes, of the value of 95,543,232 francs. The best results seem to have been obtained from the Japanese varieties of silkworm, the seed of which were imported direct from that country, producing cocoons of a greenish color. The reproduction from Japanese seed of other years did not give such good results. The lowest prices paid were 10 francs per myriagramme, at Pavia, for cocoons of inferior qualities; the highest 165 francs, at Perugia, for those of superior quality. The medium price paid for cocoons of superior quality was 104.42 francs at Castello, and for inferior quality 34.44 francs at Samo. The average price throughout the kingdom was 72.81 francs per myriagramme.

The returns of the British board of trade show that the imports of wheat and flour for the years 1867 and 1868 amounted to 17,705,707 quarters, at a cost of £50,384,115. The value of other grain importations during the same period reached £24,601,027, making an aggregate of £74,985,142. Of the above only about 500,000 cwts. were exported, the value of which is not stated.

* Myriagramme, 22.04737 pounds.

It appears from Dr. Anderson's report on the number and distribution of cinchona plants in the government grounds at Darjeeling, on the 1st of September last, that the cultivation of bark progresses. The total number in the various plantations at that date was 2,075,078, viz: *C. succiruba*, 1,118,557; *C. calisaya*, 20,354; *C. micrantha*, 29,667; *C. officinalis* and *vars*, 901,408; *C. Pahudiana*, 5,092.

Official statistics show that in the grand duchy of Hesse there are on 556 square miles 40,691 hives of bees, being 73 hives to the square mile; in Alzey there are 238 hives to the square mile; in Offenbach 23; Prussia (not including Hanover) 38; Schwartzburg-Sondershausen 32; Bavaria 42; Sachsen-Altenburg 45; Sachsen-Meiningen 49; Schwartzburg-Rudolstadt 50; kingdom of Saxony 52; Sachsen-Weimar 56; Wurtemberg 64; Baden 67; Oldenburg 74; Hanover 72.

A royal decree in Prussia makes it unlawful to kill or confine in cages the blue-gorge, red-gorge, nightingale, hedge-sparrow, red-start, wagtail, wren, blackbird, titmouse, finch, linnet, sparrow, greenfinch, thistle-finch, wood-pecker, lapwing, swallow, church-owl, starling, crow, raven, roller, gnat-snapper, sparrow-hawk, cuckoo, wrey-neck, buzzard, hawk, and owls, with the exception of the horned owls. It is likewise interdicted to disturb the broods or to carry off the nest of these birds, or to catch them by snares, gins, bird-calls, or any similar devices. Transgressors of this order will be punished by a fine of from one to ten thalers or confinement in jail, or both. The sale of any of the birds named is also prohibited under penalty of fine or imprisonment.

The annual trade of Cuba is over $170,000,000. In 1862 the production of the island was $306,000,000; taxes paid in, $37,750,000; imports $57,400,000; exports, $43,400,000. The rural wealth was then estimated at $381,000,000; wealth of towns, $170,000,000; industrial and commercial wealth, $774,000,000. The productions in the same year were: sugar, $62,000,000; tobacco, $30,000,000; other items, $37,000,000; total, $129,000,000.

The too rapid increase of sheep in Australia is checked by boiling them for their tallow. Four hundred sheep are cut to pieces and thrown into a big boiler, steam from another boiler is turned on, and soon the carcasses are reduced to a pulp; the tallow rises to the top and is drawn off through large taps into barrels for export. The gravy and other juices, the remains of the meat, and the bones, which are so softened as to crumble easily in the hands, are given to pigs. Four thousand sheep are boiled down in a day.

METEOROLOGY.

COMPILED IN THE DEPARTMENT OF AGRICULTURE FROM REPORTS BY OBSERVERS FOR THE SMITHSONIAN INSTITUTION.

Tables showing the highest and lowest range of the thermometer, (with dates prefixed,) the mean temperature, and amount of rain and melted snow, (in inches and tenths,) for February and March, 1869, at the stations and by the observers named. Daily observations at 7 a. m., and at 2 and 9 p. m.

FEBRUARY, 1869.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MAINE.				°		°	°	In.
Houlton	Aroostook	Charles H. Fernald	10, 13, 22	56	8	—12	19.0	5.22
Steuben	Washington	J. D. Parker	13	42	8	— 1	25.3	2.20
Williamsburg	Piscataquis	Edwin Pitman	13	36	2	0	19.5	6.22
West Waterville	Kennebec	B. F. Wilbur	13	45	25	2	25.2	6.45
Gardiner	....do	R. H. Gardiner	13	44	8	— 5	24.9	6.75
Standish	Cumberland	John P. Moulton	13	49	8	0	24.3	3.51
Norway	Oxford	Howard D. Smith	17	47	25	— 6	23.2	5.75
Cornish	York	Silas West	13	47	2	1	23.9	3.75
Cornishville	....do	G. W. Guptill	13	45	28	4	24.0	6.12
Averages							23.3	5.17
NEW HAMPSHIRE.								
Stratford	Coos	Branch Brown	10	39	2	—12	18.8	5.40
Shelburne	....do	F. Odell	22	46	8	—16	22.5	4.[illegible]
North Barnstead	....do	Charles H. Pitman	13	46	2	5	26.8	3.55
Goffstown Centre	Hillsboro'	Alfred Colby	13	50	2	6	25.5	3.85
Averages							23.7	4.21
VERMONT.								
Lunenburg	Essex	H. A. Cutting	10, 13	39	8	—12	20.1	4.13
Barnet	Caledonia	B. F. Eaton, M. D.	9	40	8	—16	17.4	3.20
North Craftsbury	Orleans	Rev. E. P. Wild	11	40	2	—14	18.7	7.13
Randolph	Orange	Chas. S. Paine	12	45	8	—17	21.9	4.60
Woodstock	Windsor	Doton & Miller	13	48	8	—21	19.4	4.00
Near St. Albans	Franklin	A. H. Gilmour	12	38	8	—15	16.7	.....
West Charlotte	Chittenden	Miss M. E. Wing	11	53	8	— 8	24.3	4.31
Middlebury	Addison	H. A. Sheldon	13	40	28	— 3	21.9	4.45
Brandon	Rutland	Harmon Buckland	9	49	2	— 2	24.1	4.12
Averages							20.5	4.49

Table showing the range of the thermometer, &c., for February—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MASSACHUSETTS.				°		°	°	*In.*
Kingston	Plymouth	G. S. Newcomb	13	57	2, 8	10	30.0	3.10
Topsfield	Essex	S. A. Merriam	13	54	8	5	28.0	5.82
Lawrence	....do	John Fallon	13	50	8	7	28.4	14.31?
Georgetown	....do	S. A. Nelson	13	52	8	4	28.8	5.45
Milton	Norfolk	Rev. A. K. Teele	13	62	28	9	31.2	4.21
Cambridge	Middlesex	Rev. J. B. Perry	13	64	8	9	31.7	.....
North Billerica	....do.	Rev. Elias Nason	13	54	28	1	30.6	.....
West Newton	....do.	John H. Bixby	13	59	28	0	30.3	.....
New Bedford	Bristol	Samuel Rodman	13	56	2	13	32.3	4.85
Worcester	Worcester	Jos. Draper, M. D.	13	52	8	10	28.3	5.49
Mendon	....do	Jno. G. Metcalf, M. D	13	52	2, 8, 28	10	27.4	1.25
Lunenburg	....do	G. A. Cunningham	13	53	8	7	27.3	2.90
Amherst	Hampshire	Prof. E. S. Snell	13	51	8	— 1	28.0	4.17
Richmond	Berkshire	Wm. Bacon	13	52	8	2	26.8	5.72
Williams College	....do	Prof. A. Hopkins	13	54	8	— 2	28.5	3.78
Hinsdale	....do	Rev. E. Dewhurst	13	47	2	4	23.7	5.10
Averages							28.8	5.09
RHODE ISLAND.								
Newport	Newport	Wm. H. Crandall	13	47	2, 6, 8, 28	18	32.4	6.84
CONNECTICUT.								
Pomfret	Windham	Rev. D. Hunt	13	52	28	8	27.7	4.40
Columbia	Tolland	Wm. H. Yeomans	13	64	28	8	31.2	.....
Middletown	Middlesex	Prof. John Johnston	13	63	8	9	30.0	3.84
Waterbury	New Haven	Rev. R. G. Williams	13	57	8	7	30.2	3.89
Colebrook	Litchfield	Charlotte Rockwell	13	54	28	5	25.2	1.87
Brookfield	Fairfield	Rev. S. W. Roe	13	50	8	8	29.3	7.60
Averages							28.9	4.32
NEW YORK.								
Moriches	Suffolk	E. A. Smith & daugh's	13	58	8	15	36.5	7.88
South Hartford	Washington	G. M. Ingalsbe	9	48	8	—10	25.8	4.35
Garrison's	Putnam	Thomas B. Arden	13	57	8	12	31.0	2.49
Throg's Neck	Westchester	Miss F. Morris	13	58	28	14	33.2	.....
White Plains	....do	O. R. Willis	15	65	28	14	32.4	.....
Deaf and Dumb Inst.	New York	Prof. O. W. Morris	13	57	28	14	32.8	7.29
Columbia College	....do	Prof. Chas. A. Joy	22	46	28	15	32.7	4.60
Flatbush	Kings	Rev. Eli T. Mack	13	58	28	15	34.3	4.13
Nyack	Queens	C. de la Verny	13	63	28	17	35.0	5.47
Newburgh	Orange	Jas. H. Gardiner	13	64	2, 8	12	31.5	2.65
Minaville	Montgomery	J. W. Bussing	13	48	8	— 6	22.2	1.57
Sloansville	Schoharie	G. W. Potter	13	60	2	1	25.1	3.76
Gouverneur	St. Lawrence	Cyrus H. Russell	11	42	28	—18	20.4	5.15
North Hammond	....do	C. A. Wooster	11	42	28	— 8	22.6	4.90
Houseville	Lewis	Walter D. Yale	13	45	28	— 8	22.4	4.25
South Trenton	Oneida	Storrs Barrows	10	44	2, 28	— 4	22.2	4.55
Cazenovia	Madison	Prof. Wm. Soule	13	55	7	0	25.8	4.18
Oneida	....do	S. Spooner, M. D.	12, 13	48	8	— 2	26.0	4.41
Depauville	Jefferson	Henry Haas	12	40	28	— 4	21.5	5.01
Oswego	Oswego	Wm. S. Malcolm	12	44	8	9	27.2	4.50
Palermo	....do	E. B. Bartlett	13	45	28	— 8	22.3	3.90
North Volney	....do	J. M. Patrick	13	46	7	3	25.5	.....

Table showing the range of the thermometer, &c., for February—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
NEW YORK—Con'd.				°		°	°	*In.*
Ludlowville	Tompkins	C. P. Murphy	13	60	6, 8	0	27.8	.....
Nichols	Tioga	Robert Howell	13	62	8	0	28.2	.....
Newark Valley	Tioga	Rev. Sam'l Johnson	13	57	6, 8	— 8	25.9	.....
Rochester	Monroe	H. W. Mathews	12	49	28	13	29.3	4.13
Little Genesee	Allegany	Daniel Edwards	13	60	25	— 6	25.8	2.06
Suspension Bridge	Niagara	W. Martin Jones	13	50	27	11	26.5	5.75
Buffalo	Erie	Wm. Ives	12, 13	46	27	9	27.3	4.87
Averages							26.5	4.43
NEW JERSEY.								
Paterson	Passaic	Wm. Brooks	13	57	28	11	32.3	6.06
Newark	Essex	W. A. Whitehead	13	60	28	15	33.3	5.06
Trenton	Mercer	E. R. Cook	13	52	28	13	37.3	3.52
Rio Grande	Cape May	Miss J. R. Palmer	13	66	28	16	38.5	7.00
Moorestown	Burlington	Thos. J. Beans	13	64	28	13	34.7	4.86
Newton	Sussex	Thos. Ryerson, M.D.	13	52	8	7	28.9	1.88
New Germantown	Hunterdon	Arthur B. Noll	13	59	28	10	32.5	3.51
Newfield	Gloucester	E. D. Couch	14	68	28	11	36.0	.....
Greenwich	Cumberland	R. C. Sheppard	14	63	28	17	37.7	3.57
Vineland	....do	John Ingram, M. D.	14	70	28	13	37.8	4.45
Averages							34.9	4.43
PENNSYLVANIA.								
Nyces	Pike	John Grathwohl	13	58	8	— 4	26.2	3.68
Fallsington	Bucks	Eben'r Hance	13	60	28	15	35.0	5.10
Philadelphia	Philadelphia	Prof. J. A. Kirkpatrick	13	61	28	17	37.6	4.49
Germantown	... do	Thomas Meehan	15	56	28	15	33.2	.....
Horsham	Montgomery	Miss Anna Spencer	13	65	28	13	34.3	3.25
Plymouth Meeting	....do	M. H. Corson	13	64	28	14	35.1	4.34
Dyberry	Wayne	Theodore Day	12, 13	49	8	— 6	24.7	.....
Whitehall	Lehigh	Edward Kohler	13	54	28	10	32.4	.....
Factoryville	Wyoming	Redman Sisson	13	54	8	2	28.2	2.70
Reading	Berks	J. Heyl Kaser	13	62	28	16	35.9	.....
Parkesburg	Chester	F. Darlington, M. D.	15	54	28	12	34.3	4.35
West Chester	....do	Geo. Martin, M. D.	13	66	28	13	33.6	4.20
Phenixville	....do	I. Z. Coffman, M. D.	13	62	28	14	33.9	5.50
Silver Spring	Lancaster	H. G. Bruckhart	15	54	28	16	35.0	.....
Ephrata	....do	W. H. Spera	13	64	28	14	35.1	4.88
Mount Joy	....do	J. R. Hoffer	13	64	28	18	36.7	.....
Harrisburg	Dauphin	John Heisely, M. D.	13	59	28	18	34.9	3.50
Carlisle	Cumberland	Wm. H. Cook, M. D.	13	65	28	15	34.7	3.60
Fountain Dale	Adams	S. C. Walker	13	65	28	15	35.0	4.18
Tioga	Tioga	E. T. Bentley	13	54	6, 8	— 6	22.2	1.70
Lewisburg	Union	Prof. C. S. James	11	48	8	6	30.3	1.62
Ickesburg	Perry	Wm. E. Baker	13	67	25	10	32.2	3.86
Grampian Hills	Clearfield	Elisha Fenton	13	58	25	— 3	25.7	2.35
Johnstown	Cambria	David Peelor	13	58	28	8	31.7	.....
Franklin	Venango	Rev. M. A. Tolman	13	64	28	0	29.3	3.70
Connellsville	Fayette	John Taylor	14	68	28	2	33.0	.....
New Castle	Lawrence	E. M. McConnell	13	60	28	4	32.7	.....
Beaver	Beaver	Rev. R. T. Taylor	13, 14	57	25	11	36.0	4.00
Canonsburg	Washington	Rev. W. Smith, D. D	13	68	27	6	33.9	2.05
Averages							32.5	3.65

Table showing the range of the thermometer, &c., for February—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MARYLAND.				°		°	°	*In.*
Woodlawn	Cecil	Jas. O. McCormick	13	64	28	14	35.9	4.67
Annapolis	Anne Arundel	Wm. R. Goodman	13, 15	66	28	18	41.6	5.45
St. Inigoes	St. Mary's	Rev. J. Stepheuson	13	62	28	20	37.7	5.56
Emmittsburg	Frederick	Eli Smith	13	71	28	14	32.8	.....
Mt. St. Mary's Coll	....do	Prof. C. H. Jourdan	13	64	28	14	35.1	4.12
Averages							36.5	4.95
DIST. OF COLUMBIA.								
Washington	Washington	Smithsonian Instit'n.	13	58	28	20	39.7	4.10
VIRGINIA.								
Johnsontown	Northampton	C. R. Moore	13	66	5, 28	24	42.3	3.00
Hampton	Elizabeth City	James M. Sherman	15	69	28	24	43.5	2.50
Zuni Station	Isle of Wight	Robert Binford	14	70	6	24	44.9	4.25
Bacon Castle	Surry	B. W. Jones	14	73	28	25	45.6	.....
Comorn	King George	E. Taylor	13, 14	68	28	23	41.8	3.37
Mt. Solon	Augusta	Jas. T. Clarke, M. D.	13	76	6	16	42.1	3.96
Staunton	....do	J. C. Covell	13	62	28	18	39.5	2.94
Lexington	Rockbridge	W. H. Ruffner	13	73	6	12	40.7	2.65
Lynchburg	Bedford	C. I. Meriwether	12	67	28	22	44.1	.....
Snowville	Pulaski	J. W. Stalmaker	12, 14	62	6	12	37.1	16.20?
Wytheville	Wythe	Rev. Jas. A. Brown.	13	65	6	14	37.3	2.80
Averages							41.7	3.96
WEST VIRGINIA.								
White Day	Monongalia	W. H. Sharp, M. D	14	70	6	4	37.5	.....
Cabell C. H	Cabell	C. L. Roffe	21	60	26	16	38.6	2.10
Averages							38.1	2.10
NORTH CAROLINA.								
Kenansville	Duplin	Rev. Jas. M. Sprunt.	21	74	6	26	48.9	4.65
Goldsboro'	Wayne	E. W. Adams, A. M.	15	75	5	26	50.3	3.25
Raleigh	Wake	Miss Mollie H. Taylor	13, 14	73	28	24	47.2	3.80
Oxford	Granville	W. R. Hicks, M. D.	13, 14	66	1	20	42.1	6.56
Trinity College	Randolph	Edward D. Pearsall	12	68	5	22	44.2	13.00?
Albemarle	Stanley	F. J. Kron	13	71	6, 28	16	43.4	4.75
Statesville	Iredell	Thos. A. Alison	19	62	28	15	38.9	5.63
Asheville	Buncombe	E. J. Aston	13	62	24, 28	16	40.2	.....
Do	....do	J. T. E. Hardy, M. D.	12, 13	62	24, 28	14	42.3	.....
Averages							44.3	6.66
SOUTH CAROLINA.								
Aiken	Barnwell	John H. Cornish	13	70	28	25	50.0	6.73
Gowdysville	Union	Charles Petty	19	65	28	22	50.1	.....
Camden	Kershaw	Colin Macrae	19, 20	69	6	19	47.0	5.45
Averages							48.7	6.09
GEORGIA.								
Atlanta	Fulton	F. Deckner & Son	13	67	24, 28	16	43.7	9.93
Macon	Bibb	Prof. J. F. Adams	12	70	28	26	48.7	6.48
Do	....do	Miss S. J. Whitney.	12	69	28	23	47.7	6.20
Averages							46.7	7.54

Table showing the range of the thermometer, &c., for February—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
ALABAMA.				°		°	°	*In.*
Carlowville	Dallas	H. L. Alison, M. D	13	74	28	27	50.9	10.82
Moulton	Lawrence	Thos. M. Peters, A. M.	21	63	28	20	43.4	3.98
Havana	Hale	S. K. Jennings, M. D.	12, 13	70	24, 28	24	49.1	9.30
Averages							47.8	8.03
FLORIDA.								
Jacksonville	Duval	A. S. Baldwin	22	79	5, 24	40	59.4	7.25
Port Orange	Volusia	Mrs. J. M. Hawks	22	85	5	40	60.0	.....
Ocala	Marion	Edward Barker	22	84	6	36	62.6	.....
Pilatka	Putnam	W. M. L. Fiske, M. D.	22	87	5	35	60.7	4.90
Averages							60.7	6.08
TEXAS.								
Houston	Harris	Miss E. Baxter	20	76	23	26	51.6	.....
Columbia	Brazoria	J. B. Bostwick	20	80	23	26	55.7	3.04
Blue Branch	Burleson	F. S. Wade	10	77	22	29	52.0	2.97
Lavacca	Calhoun	L. D. Heaton	20	80	23	27	56.0	3.01
Waco	McLellan	Edwd. Merrill, M. D.	11	73	23	20	51.8	3.00
Austin	Travis	J. Van Nostrand	20	83	23	28	52.4	0.61
Averages							53.8	2.53
LOUISIANA.								
New Orleans	New Orleans	Robt. W. Foster	20	78	23	35	.....	.....
MISSISSIPPI.								
Grenada	Yalabusha	Albert Moore	21	74	28	20	49.5	5.20
Brookhaven	Lawrence	T. J. R. Keenan	20	78	23	26	51.4	10.20
Natchez	Adams	Robt. McCary	13	71	5, 23, 24, 28	27	46.6	7.47
Marian C. H.	Lauderdale	Thos. W. Florer	14	78	28	18	47.5	7.70
Averages							48.8	7.64
TENNESSEE.								
Elizabethton	Carter	Charles H. Lewis	13, 21	69	5, 24, 28	16	40.7	2.70
Tusculum College	Green	S. S. and Rev. W. S. Doak.	13	68	5	17	39.0	.....
Lookout Mountain	Hamilton	Rev. C. F. P. Bancroft	19	65	28	12	43.7	.....
Clarksville	Montgomery	Prof. W. M. Stewart	13	68	28	15	42.2	3.14
Trenton	Gibson	W. T. Quigley	21	67	27	16	44.4	5.45
Memphis	Shelby	Ed. Goldsmith	12	71	23	17	44.5	3.97
Averages							42.4	3.82
KENTUCKY.								
Pine Grove	Clark	Sam'l Martin M. D.	13	66	28	10	38.7	2.54
Lexington	Fayette	S. R. Williams	13	67	5	6	38.6	3.06
Danville	Boyle	O. Beatty	12, 13	74	28	12	44.9	1.87
Louisville	Jefferson	Mrs. L. Young	13	70	28	12	40.7	3.50
Clinton	Hickman	Rev. T. H. Clelland	13	63	27	14	40.8	3.82
Averages							40.7	2.96
OHIO.								
New Lisbon	Columbiana	J. F. Benner	13, 14	65	28	— 4	32.9	1.84
Steubenville	Jefferson	Jos. B. Doyle	13	62	28	32	36.0	2.06
Martin's Ferry	Belmont	Martin B. Shreeve	13	67	5, 27	12	34.5	2.69
Painesville	Lake	E. J. Ferris	13	64	28	6	30.6	4.65

Table showing the range of the thermometer, &c., for February—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
OHIO—Continued.				°		°	°	*In.*
Gilmore	Tuscarawas	Samuel M. Moore	14	68	28	6	32.9	3.10
Milnersville	Guernsey	Rev. D. Thompson	13	67	6	3	32.3	3.85
Cleveland	Cuyahoga	Mr. & Mrs. G. A. Hyde	13	67	28	1	30.7	3.02
Wooster	Wayne	Martin Winger	13	70	28	— 2	33.5	2.05
Gallipolis	Gallia	A. P. Rodgers	13	68	28	17	39.4	2.94
Kelley's Island	Erie	Geo. C. Huntington	13	56	28	12		2.67
Sandusky	....do	Thomas Nelll	13	65	25	5	32.5	3.45
North Fairfield	Huron	C. Burras	13	68	28	5	32.3	3.99
Carson	....do	Mrs. M. M. Marsh	13	61	25, 28	10	32.5	2.50
Westerville	Franklin	Prof. Jno. Haywood	13	67	5	9	34.1	2.98
Marion	Marion	H. A. True, M. D	13	65	25	6	31.6	3.15
Hillsboro'	Highland	J. McD. Mathews	13	64	28	11	34.9	3.25
Toledo	Lucas	John Trembly, M.D.	13	65	28	3	30.3	3.44
Bowling Green	Wood	John Clarke	12	69	28	3	30.9	5.69
Urbana University	Champaign	M. G. Williams	13	66	28	9	32.9	3.40
Bethel	Clermont	Geo. W. Crane	13	67	28	11	35.8	2.63
Jacksonburg	Butler	I. B. Owsley, M. D	13	67	28	8	34.9	3.57
Mt. Auburn Inst	Hamilton	Prof. S. A. Norton	12, 13	68	28	11	39.3	3.20
Cincinnati	....do	R. C. Phillips	12, 13	70	28	19	41.7	3.05
College Hill	....do	John W. Hammitt	12	62	28	10	35.3	3.44
Averages							33.9	3.19
MICHIGAN.								
Monroe City	Monroe	Miss H. I. Whelpley	13	69	28	5	31.0	4.55
Adrian	Lenawee	L. May Holme	13	62	27	2	23.2	.....
State Ag. College	Ingham	Prof. R. C. Kedzie	12	60	5	— 4	26.7	2.95
Litchfield	Hillsdale	R. Bullard	13	62	5	4	27.5	2.85
Coldwater	Branch	N. L. Southworth	13	64	25, 28	6	28.3	1.78
Grand Rapids	Kent	E. S. Holmes, D. D. S	12	56	4	— 1	28.0	1.88
Northport	Leelenaw	Rev. Geo. N. Smith	10	45	27	4	24.5	1.63
Homestead	Benzie	George E. Steele	12	47	28	— 4	25.4	.....
Holland	Ottawa	L. H. Streng	13	56	5	0	31.2	3.48
Otsego	Allegan	Milton Chase, M.D	12	68	5	14	34.6	.....
Copper Falls	Keweenaw	S. H. Whittlesey	11	36	24	— 1	15.4	4.03
Penn Mine	....do	Richard H. Griffith	12	40	17	— 3	20.2	.....
Averages							26.3	2.89
INDIANA.								
Aurora	Dearborn	Geo. Sutton, M. D	13	66	27, 28	14	35.0	3.30
Vevay	Switzerland	Chas. G. Boerner	13	70	27, 28	13	38.0	4.05
Muncie	Delaware	G. W. H. Kemper, M.D	13	66	28	5	33.9	4.40
Spiceland	Henry	Wm. Dawson	13	66	28	8	33.9	3.20
New Albany	Floyd	E. S. Crozier, M. D	12, 13	67	28	12	39.9	2.83
Jalapa	Grant	Albert C. Irwin	12	67	28	6	34.6	5.94
Knightstown	Rush	J. Deem	13	65	23	9	34.9	4.03
Indianapolis	Marion	J. V. Woolen, M. D	13	65	23, 24, 28	9	34.0	3.70
State University	Monroe	Prof. C. M. Dodd	13	65	28	9	35.3	3.37
Merom	Sullivan	Thomas Holmes	13	65	28	8	35.2	3.28
Lafayette	Tippecanoe	S. W. Newton	12	64	28	4	32.0	3.70
Kentland	Newton	Daniel Spitter	11, 12	60	27	6	31.3	10.47?
New Harmony	Posey	John Chappellsmith	12, 13	66	28	13	41.4	3.80
Averages							35.3	4.31

Table showing the range of the thermometer, &c., for February—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
ILLINOIS.				°		°	°	*In.*
Chicago	Cook	J. G. Langguth, jr.	12	65	28	5	31.8	2.24
Near Chicago	do	Samuel Brookes	12	60	28	3	27.2	.....
Evanston	do	Prof. Oliver Marcy	12	59	27	6	30.3	2.94
Marengo	McHenry	O. P. Rogers	12	57	5	0	27.1	1.65
King's Mills	Kane	Mr. and Mrs. A. Spaulding	12	58	27, 28	— 2	24.2	1.98
Louisville	Clay	D. H. Chase, M. D.	.....	.....	27, 28	10	.....	.....
Belvidere	Boone	G. B. Moss	15	59	5	— 8	25.3	2.68
Ottawa	La Salle	Mrs. E. H. Merwin	12	66	28	4	32.3	1.85
Winnebago	Winnebago	J. W. & Miss Tolman.	12	58	27	0	24.5	2.14
Rochelle	Ogle	Daniel Carey	12	61	27, 28	— 4	25.5	.....
Wyanet	Bureau	E. S. & Miss Phelps	12	68	28	— 2	28.1	1.52
Tiskilwa	do	Perry Aldrich	12	62	28	0	29.8	.....
Hennepin	Putnam	Smiley Shepherd	12	66	28	0	30.0	.....
Elmira	Stark	G. A. Blanchard	12	62	5	— 7	26.6	2.86
Springfield	Sangamon	G. M. Brinkerhoff	12	70	27	4	31.1	.....
Loami	do	Timothy Dudley	16	63	27	2	31.9	2.95
Dubois	Washington	Wm. C. Spencer	12	69	28	7	37.0	3.75
Waterloo	Monroe	Francis Sum	12	69	23	10	39.1	1.14
South Pass	Union	H. C. Freeman	12	68	23, 28	10	37.9	.....
Lombard University	Knox	Prof. W. Livingston.	11	57	27, 28	— 1	27.2	1.20
Manchester	Scott	Dr. J. & C. W. Grant	12	70	27	3	32.4	1.97
Mount Sterling	Brown	Rev. A. Duncan	12	68	27	— 4	31.4	.....
Andulusia	Rock Island	E. H. Bowman, M. D.	12	68	5	— 2	30.3	.....
Augusta	Hancock	S. B. Mead, M. D.	12	64	28	— 2	30.1	2.57
Warsaw	do	B. Whitaker	12	67	22	— 4	28.9	1.88
Averages							30.0	2.21
WISCONSIN.								
Manitowoc	Manitowoc	Jacob Lapp	12	48	28	0	25.8	2.52
Plymouth	Sheboygan	G. Moeller	12	47	27	— 2	23.0	2.30
Hingham	do	Jno. De Lyser	12	50	27	— 2	24.6	.....
Milwaukee	Milwaukee	I. A. Lapham, LL.D.	12	56	27	2	26.7	2.76
Appleton	Outagamie	J. C. Foye	12	47	27	— 2	25.6	.....
Waupaca	Waupaca	H. C. Mead	10, 11	48	4, 24	0	24.2	.....
Embarrass	do	E. Everett Breed	12	45	27	— 9	22.3	2.40
Rocky Run	Columbia	W. W. Curtis	12	50	5	— 5	24.4	1.98
Madison	Dane	W. W. Daniels	12	59	27	— 1	22.9	2.35
Edgerton	Rock	Henry J. Shints	12	60	5	— 3	24.2	.....
Baraboo	Sauk	M. C. Waite	12	50	23, 24, 28	0	24.9	.....
New Lisbon	Juneau	J. L. Dungan	12	57	5	—17	23.9	.....
Bayfield	Bayfield	Andrew Tate	16	46	23	—12	19.8	.....
Averages							24.0	2.39
MINNESOTA.								
Afton	Washington	Dr. and Mrs. B. F. Babcock.	11	43	22	—24	17.5	2.47
St. Paul	Ramsey	Rev. A. B. Paterson	12	41	27	—15	18.7	2.83
Minneapolis	Hennepin	Wm. Cheney	11, 12	42	22, 27	—18	17.6	2.80
Sibley	Sibley	C. W. & C. A. Woodbury.	11	39	27	—21	15.2	2.30
Koniska	McLeod	Thos. M. Young	12	40	27	—26	15.0	2.20
New Ulm	Brown	Charles Roos	8, 10 / 11, 16	37	22, 27	—26	15.0	2.20
Madelia	Watonwan	W. W. Murphy	7, 10	40	22	—22	15.2	3.50
Averages							16.6	2.65

Table showing the range of the thermometer, &c., for February—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
IOWA.				°		°	°	*In.*
Clinton	Clinton	Dr. J. P. Farnsworth	12	65	23, 24	— 4	27.2	5.26
Dubuque	Dubuque	Asa Horr, M. D	12	56	5	— 2	26.0	2.24
Monticello	Jones	M. M. Moulton	12	56	5	— 8	24.5	1.13
Bowen's Prairie	....do	Samuel Woodworth	11, 12	64	23	—14	24.0	2.00
Muscatine	Muscatine	J. P. Walton	12	62	5	—12	28.5	1.58
Fort Madison	Lee	Dan'l McCready	12	68	23, 27	— 3	29.5	2.45
Guttenberg	Clayton	Jas. P. Dickerson	12	56	5	—16	23.2	.....
Mount Vernon	Linn	Prof. A. Collins	12	59	23	— 7	23.7	.....
Iowa City	Johnson	Prof. T. S. Parvin	12	62	5	— 8	27.0	3.00
Independence	Buchanan	Geo. Warne, M. D	12	53	23	—21	21.2	3.10
Near Independence	....do	Mrs. D. B. Wheaton	12	58	5	—19	19.9	3.15
Waterloo	Black Hawk	T. Steed	12	48	22, 23	— 8	23.0	.....
Marble Rock	Floyd	H. Wadey	12	48	27	—10	23.1	.....
Iowa Falls	Hardin	N. Townsend	11, 12	50	23	—10	24.2	3.97
Algona	Kossuth	I. H. Warren	11	41	22	—14	19.2	.....
Near Algona	....do	Ph. Dorweiler	1, 11	40	22	—18	17.4	2.28
Fort Dodge	Webster	C. N. Jorgensen	11	45	22	—10	21.7	1.46
Boonsboro'	Boone	E. Babcock	12	56	27	— 9	22.7	1.84
Rolfe	Pocahontas	Oscar I. Strong	11	46	22, 27	—12	19.2	1.93
Lizard	....do	Jas. J. Bruce	10	61?	27	— 4	25.5	4.98?
Fontanelle	Adair	A. F. Bryant	12	56	27	— 6	25.3	1.68
Grant City	Sac	E. and Rosina Miller	11, 12	48	22	—14	23.6	.....
Logan	Harrison	Jacob T. Stern	12, 13, 18	48	4, 22, 27	— 4	24.6	1.40
Woodbine	....do	M. E. & D. R. Witter	12	53	22	— 6	25.9	.....
Averages							23.8	2.61
MISSOURI.								
St. Louis University	St. Louis	Rev. J. Straetmans	12	70	27	12	38.4	1.82
Allenton	....do	A. Fendler, M. D	12	77	23, 28	7	36.0	2.45
Hematite	Jefferson	John M. Smith	12	75	28	9	38.9	2.10
Rolla	Phelps	Homer Ruggles	12	76	23	1	41.6	1.57
Jefferson City	Cole	Nicolas de Wyl	12	72	23	4	37.0	.....
Hermitage	Hickory	Miss Belle Moore	12	70	23	— 1	34.6	1.96
Bolivar	Polk	James A. Race	12	70	23	1	38.2	0.95
Warrensburg	Johnson	J. E. Pollock	12	70	27	0	30.4	0.50
Harrisonville	Cass	John Christian	12	64	23	— 2	33.1	1.03
St. Joseph	Buchanan	Rev. Henry Bullard	12	68	23	2	35.3	1.98
Oregon	Holt	William Kaucher	12, 13	68	23	— 5	31.2	2.51
Averages							35.9	1.69
KANSAS.								
Atchison	Atchison	Dr. H. B. & Miss Horn	11, 12	68	23, 27	— 4	30.9	1.65
Leavenworth	Leavenworth	J. Stayman, M. D	12	68	23	— 6	30.7	1.84
Olatha	Johnson	W. Beckwith	12	67	23	— 4	32.1	1.30
Baxter Springs	Cherokee	Ingraham & Hyland	12	74	23	— 7	33.0	2.80
State University	Douglas	Prof. F. H. Snow	12	66	23	— 3	30.6	1.44
Holton	Jackson	Jas. Watters, M. D	11	62	23, 27	— 3	30.?	.....
Neosho Falls	Woodson	Mrs. E. W. Groesbeck	12	65	23	— 9	31.3	1.60
State Agricult'l Coll.	Riley	Prof. B. F. Mudge	12	65	23	— 4	34.3	1.22
Council Grove	Morris	A. Woodworth, M. D.	11, 12	66	23	0	34.5	0.65
Averages							32.3	1.56

Table showing the range of the thermometer, &c., for February—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
NEBRASKA.				°		°	°	*In.*
Dakota	Dakota	H. H. Brown	8, 12	55	22	— 5	27.0	.....
Omaha Mission	Omaha Reserve	Rev. Wm. Hamilton	.....	.....	.....	.....	.....	.....
Elkhorn	Washington	John S. Bowen	12	55	22	— 2	27.7	.....
De Soto	....do	Charles Seltz	12	53	22	— 6	26.8	1.48
Bellevue	Sarpy	Mrs. E. E. Caldwell	12	63	4	— 2	30.6	2.00
Glendale	Cass	Dr. A. L. & Miss Child	12	63	4	—10	27.5	2.45
Nebraska City	Otoe	Prof. P. Zahner	12	64	4	0	31.7	2.60
Peru	Nemeha	J. M. McKenzie	12	67	20	— 3	30.3	1.05
Averages							28.8	1.92

MARCH, 1860.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MAINE.				°		°	°	*In.*
Houlton	Aroostook	Charles H. Fernald	27	53	2	—23	19.6	8.65
Steuben	Washington	J. D. Parker	28	50	6	— 4	26.4	3.54
Williamsburg	Piscataquis	Edwin Fitman	27	45	1, 6	—12	21.4	4.23
West Waterville	Kennebec	B. F. Wilbur	27, 28	55	6	—12	26.2	5.05
Gardiner	....do	R. H. Gardiner	28	49	1	—17	25.1	4.00
Standish	Cumberland	John P. Moulton	27	54	6	—19	24.0	4.39
Norway	Oxford	Howard D Smith	28	55	6	—20	23.3	2.97
Rumford Point	....do	Waldo Pettingill	27	50	6	—24	22.7	3.20
Cornish	York	Silas West	27, 28	54	6	— 8	25.0	4.96
Cornishville	....do	G. W. Guptill	27	46	5	— 5	24.4	5.76
Averages							23.8	4.68
NEW HAMPSHIRE.								
Stratford	Coos	Branch Crown	28	48	1	—22	19.4	3.60
Shelburne	....do	F. Odell	27	59	2, 6	—24	25.8	2.37
Goffstown Centre	Hillsboro'	Alfred Colby	28	56	6	— 1	26.4	3.40
Averages							23.9	3.12
VERMONT.								
Lunenburg	Essex	H. A. Cutting	28	47	2	—23	19.6	4.45
Barnet	Caledonia	B. F. Eaton, M. D	26	58	3	—30	18.9	3.70
North Craftsbury	Orleans	Rev. E. P. Wild	29	52	1	—17	19.3	2.74
Randolph	Orange	Charles S. Paine	27	50	1	—27	20.1	5.83
Woodstock	Windsor	Doton & Miller	27	49	1	—27	17.7	.....
Near St. Albans	Franklin	A. H. Gilmour	29	51	5	—29	18.8	.....
West Charlotte	Chittenden	Miss M. E. Wing	27	66	1	—17	26.3	3.64
Middlebury	Addison	H. A. Sheldon	27	47	1	—20	22.9	3.33
Brandon	Rutland	Harmon Buckland	27	55	1	—14	27.0	3.40
Averages							21.2	3.87
MASSACHUSETTS.								
Kingston	Plymouth	G. G. Newcomb	27	65	2	4	30.5	6.03
Topsfield	Essex	S. A. Merriam	27	57	6	— 8	27.2	6.73
Lawrence	....do	John Fallon	28	53	6	— 7	28.7	7.43
Milton	Norfolk	Rev. A. K. Teele	27	64	1	4	32.7	5.17
Cambridge	Middlesex	Rev. J. B. Perry	27	68	1	0	32.3	.....

Table showing the range of the thermometer, &c., for March—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MASSACHUSETTS—Continued.				°		°	°	*In.*
North Bellerica	do	Rev. Elias Nason	28	54	2	—11	28.1	.....
West Newton	do	John H. Bixby	27	62	2	— 4	30.7	3.56
New Bedford	Bristol	Samuel Rodman	27	64	5	6	32.1	5.98
Worcester	Worcester	Jos. Draper, M. D	27	55	1,5	2	28.3	4.83
Menlon	do	Jno. G. Metcalf, M.D.	27	56	5	0	27.4	4.10
Lunenburg	do	Geo. A. Cunningham	28	56	5	— 2	28.1	5.52
Amherst	Hampshire	Prof. E. S. Snell	27	54	1	— 9	27.3	4.46
Richmond	Berkshire	William Bacon	28	58	1,5	— 5	27.0	4.94
Williams College	do	Prof. A. Hopkins	28	50	1	— 8	25.1	4.44
Hinsdale	do	Rev. E. Dewey, 2d	26,28	50	22	— 5	25.2	5.72
Averages							28.7	5.39
RHODE ISLAND.								
Newport	Newport	Wm. H. Crandall	27	60	1,5	10	33.3	7.05
CONNECTICUT.								
Pomfret	Windham	Rev. D. Hunt	27	55	5	0	26.4	5.20
Columbia	Tolland	Wm. H. Yeomans	28	64	1	2	31.6	.....
Middletown	Middlesex	Prof. John Johnson	27	61	1	— 4	29.4	6.68
Waterbury	New Haven	Rev. R. G. Williams	27	55	2	— 4	29.1	5.02
Colebrook	Litchfield	Charlotte Rockwell	28	54	5	— 6	24.7	4.68
Brookfield	Fairfield	Rev. S. W. Roe	28	60	2	— 6	31.6	9.10
Averages							28.8	5.94
NEW YORK.								
Moriches	Suffolk	E. A. Smith & daugh's	27	71	5	11	36.5	8.32
South Hartford	Washington	G. M. Ingalsbe	28	58	1	—17	26.3	5.75
Garrison's	Putnam	Thomas B. Arden	27	58	1,5	5	34.0	6.58
Throg's neck	West Chester	Miss E. Morris	27	58	5	8	34.1	.....
Deaf and Dumb Inst.	New York	Prof. O. W. Morris	28	62	5	9	34.1	5.84
Columbia College	do	Prof. Chas. A. Joy	27	61	5	9	34.0	3.98
Flat Bush	Kings	Rev. Eli T. Mack	27	58	5	9	31.3	4.30
Nyack	Queens	C. de la Verny	28	72	5	12	37.3	6.00
Newburgh	Orange	James H. Gardiner	27,28	57	1,5	4	33.3	1.32
Minaville	Montgomery	J. W. Bussing	14	49	1	— 4	24.7	3.00
Sloansville	Schoharie	G. W. Potter	14,28	50	5	— 4	24.0	6.27
Gouverneur	St. Lawrence	C. H. Russell	28,29	48	1	—23	24.1	2.50
North Hammond	do	C. A. Wooster	28	54	7,22	— 5	23.9	1.96
Houseville	Lewis	Walter D. Yale	25	50	4,5,21,22	— 4	23.4	4.46
Leyden	do	C. C. Merriam	28	47	4	5	28.2	4.65
South Trenton	Oneida	Storrs Barrows	28	44	22	— 6	21.9	4.87
Cazenovia	Madison	Prof. Wm. Soule	28	50	22	— 1	25.9	.....
Oneida	do	S. Spooner, M. D	28	53	22	0	27.0	3.45
Depauville	Jefferson	Henry Haas	28	54	5,22	0	24.8	4.95
Oswego	Oswego	Wm. S. Malcolm	28	49	22	4	27.4	4.10
Palermo	do	E. B. Bartlett	28	48	22	— 3	23.2	1.93
North Volney	do	J. M. Patrick	28	51	21,22	4	26.3	.....
Ludlowville	Tompkins	C. P. Murphy	28	57	6	6	27.6	.....
Waterburg	do	D. Trowbridge	28	53	22	—10	22.9	.....
Nichols	Tioga	Robert Howell	28	57	22	— 2	29.0	.....
Newark Valley	do	Rev. Sam'l Johnson	28	54	22	— 8	26.2	2.15
Rochester	Monroe	H. W. Mathews	26	52	5	3	36.4	2.27

Table showing the range of the thermometer, &c., for March—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
NEW YORK—Con'd.				°		°	°	*In.*
Little Genesee	Allegany	Daniel Edwards	28	62	5	—18	25.7	2.05
Suspension Bridge	Niagara	W. Martin Jones	28	52	5	2	26.2	.....
Buffalo	Erie	William Ives	28	64	5	2	27.7	2.69
Averages							27.9	4.06
NEW JERSEY.								
Paterson	Passaic	William Brooks	27, 28	66	1	1	32.9	5.40
Newark	Essex	W. A. Whitehead	27	63	1	6	34.4	4.67
New Brunswick	Middlesex	I. E. Hasbrouck	27	60	1	5	33.6	3.74
Trenton	Mercer	E. R. Cook	27, 28	64	1	8	39.9	4.79
Rio Grande	Cape May	Mrs. J. R. Palmer	27	66	5	8	37.0	4.88
Moorestown	Burlington	Thomas J. Beans	14	68	1	9	36.5	4.63
Newton	Sussex	Thos. Ryerson, M. D.	28	60	5	3	31.5	4.89
New Germantown	Hunterdon	Arthur B. Noll	27	61	1	— 2	37.4	4.24
Newfield	Gloucester	E. D. Couch	27	66	1	9	36.4	.....
Greenwich	Cumberland	R. C. Sheppard	27	66	5	13	38.4	4.64
Vineland	....do	John Ingram, M. D.	27, 28	68	5	9	37.7	3.71
Averages							36.0	4.56
PENNSYLVANIA.								
Nyces	Pike	John Grathwohl	28	58	22	— 4	28.6	5.21
Fallsington	Bucks	Ebenezer Hance	27, 28	65	1	6	37.0	5.28
Philadelphia	Philadelphia	Prof. J. A. Kirkpatrick.	27	63	5	14	38.9	5.21
Germantown	....do	Thomas Meehan	28	65	5	8	36.5	.....
Horsham	Montgomery	Miss Anna Spencer	27	65	1	6	36.5	4.57
Plymouth Meeting	....do	M. H. Corson	27	63	5	11	36.4	4.62
Dyberry	Wayne	Theodore Day	28	60	5	— 8	25.5	5.15
Whitehall	Lehigh	Edward Kohler	27, 28	58	1	3	33.9	.....
Factoryville	Wyoming	Rodman Sisson	28	60	5	0	28.2	3.43
Reading	Berks	J. Heyl Raser	27	64	5	13	38.3	.....
Parkesburg	Chester	Dr. F. Darlington	27	64	1	9	36.6	4.35
West Chester	....do	Dr. George Martin	27, 28	62	5	9	35.8	4.03
Phenixville	....do	Dr. I. Z. Coffman	27	61	1	9	37.5	4.25
Silver Spring	Lancaster	H. G. Bruckhart	14	67	5	10	37.0	.....
Ephrata	....do	W. H. Spera	27	66	1, 7 22	14	36.6	4.56
Mount Joy	....do	J. R. Hoffer	14	69	5	14	39.4	.....
Harrisburg	Dauphin	Jno. Heisely, M. D.	27	61	5	13	36.5	4.76
Carlisle	Cumberland	Wm. H. Cook, M. D.	14	70	5	10	37.9	5.75
Fountain Dale	Adams	S. C. Walker	16	65	1, 5	11	37.6	4.48
Lewisburg	Union	Prof. C. S. James	.....	.....	.....	.....	.....	.....
Ickesburg	Perry	William E. Baker	14	65	5	8	34.9	4.89
Grampian Hills	Clearfield	Elisha Fenton	28	57	5	—10	25.7	4.57
Johnstown	Cambria	David Fccler	28	56	7	8	32.2	.....
Franklin	Venango	Rev. M. A. Tolman	28	66	7	0	28.9	4.45
Connellsville	Fayette	John Taylor	26, 28	68	7	2	32.3	.....
New Castle	Lawrence	E. M. McConnell	28	67	16	2	31.2	.....
Beaver	Beaver	Rev. R. T. Taylor	28	70	16	10	35.6	4.23
Canonsburg	Washington	Rev. W. Smith, D. L.	26	71	7	6	34.7	3.87
Averages							34.3	4.61

Table showing the range of the thermometer, &c., for March—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MARYLAND.				°		°	°	*In.*
Woodlawn	Cecil	Jas. O. McCormick	27	70	5	10	37.3	5.20
Annapolis	Ann Arundel	Wm. R. Goodman	27	68	5	13	42.1	4.36
St. Inigoes	St. Mary's	Rev. J. Stephenson	27, 29	64	5	15	40.7	4.39
Frederick	Frederick	Jno. K. Hanshew	14, 27	69	5	15	42.6	.....
Emmittsburg	....do	Eli Smith	27	70	5	8	37.7	.....
Mt. St. Mary's Coll.	....do	Prof. C. H. Jourdan	27	63	5	11	36.9	5.62
Averages							39.6	4.89
DIST. OF COLUMBIA.								
Washington	Washington	Smithsonian Instit'n.	27	65	7	16	40.7	3.23
VIRGINIA.								
Johnsontown	Northampton	C. R. Moore	14	67	7	18	43.2	2.80
Hampton	Elizabeth City	James M. Sherman	14	68	7	18	44.0	3.00
Zuni Station	Isle of Wight	Robert Binford	14, 29	72	7	19	46.6	2.32
Bacon's Castle	Surry	B. W. Jones	15, 27	75	7	19	46.9	.....
Comorn	King George	E. Tayloe	14, 27	70	5	16	42.1	1.95
Mt. Solon	Augusta	Jas. T. Clarke, M. D.	14	74	7	10	43.9	3.15
Staunton	....do	J. C. Covell	14	67	6, 7	14	40.7	5.06
Lexington	Rockbridge	W. H. Ruffner	27	73	1	17	45.0	3.78
Lynchburg	Bedford	Chas. I. Meriwether	14	67	7	18	47.6	.....
Snowville	Pulaski	J. W. Stalmaker	14, 27	72	7	4	41.5	11.50
Wytheville	Wythe	Rev. Jas. A. Brown	25	76	7	— 1	40.6	3.15
Averages							43.8	4.08
WEST VIRGINIA.								
White Day	Monongalia	W. H. Sharp, M. D	27	70	7	12	30.4	.....
Weston	Lewis	B. Owen	28	71	7	4	37.4	.....
Cabell C. H.	Cabell	C. L. Roffe	31	58	6	16	40.2	2.70
Averages							36.0	2.70
NORTH CAROLINA.								
Kenansville	Duplin	Rev. Jas. M. Sprunt	15	83	7	20	53.3	2.95
Goldsboro'	Wayne	E. W. Adams, A. M.	15, 27	80	7	19	53.0	2.95
Raleigh	Wake	Miss M. H. Taylor	14	80	7	18	48.2	3.70
Oxford	Granville	W. R. Hicks, M. D.	14	76	1	12	47.7	3.35
Trinity College	Randolph	Edward D. Pearsall	14	73	1, 7	24	46.9	2.80
Albemarle	Stanley	F. J. Kion	14	78	7	13	48.4	4.75
Statesville	Iredell	Thomas A. Allison	14	74	1, 7	10	43.8	3.50
Asheville	Buncombe	E. J. Aston	26, 27	70	7	12	43.9	3.70
Do.	....do	J. T. E. Hardy, M. D.	26	72	7	8	44.3	.....
Averages							47.7	3.46
SOUTH CAROLINA.								
Aiken	Barnwell	John H. Cornish	15, 27	75	1	25	53.3	2.32
Gowdysville	Union	Charles Petty	14, 15	77	1, 7	20	53.3	2.58
Camden	Kershaw	Colin Macrae	14	74	1	16	51.5	2.36
Averages							52.7	2.42
GEORGIA.								
Atlanta	Fulton	F. Deckner & Son	27, 31	76	1	16	49.7	5.85
Macon	Bibb	Prof. J. F. Adams	27, 31	78	1	25	55.4	2.13
Averages							52.6	3.99

Table showing the range of the thermometer, &c., for March—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
ALABAMA.				°		°	°	*In.*
Carlowville	Dallas	H. L. Alison, M.D.	31	84	1	30	57.7	5.70
Moulton	Lawrence	Thos. M. Peters, A.M	31	72	1, 7	22	48.7	3.77
Greene Springs	Hale	H. Tutwiler, LL. D.	31	83	1	20	52.7	3.25
Havana	....do	S. K. Jennings, M. D.	31	80	1	22	55.0	4.00
Averages							53.5	4.18
FLORIDA.								
Jacksonville	Duval	A. S. Baldwin, M. D.	29, 31	84	1	32	62.8	2.40
Port Orange	Volusia	Mrs. J. M. Hawks	29	82	1	34	65.5	.....
Ocala	Marion	Edward Barker	25, 28	81	1	30	69.7	.....
Pilatka	Putnam	W. M. L. Fiske, M. D.	30	85	1	32	64.0	3.44
Averages							65.5	2.92
TEXAS.								
Gilmer	Upsher	J. M. Glasco	14, 31	87	5	28	53.0	4.14
Houston	Harris	Miss E. Baxter	20, 31	84	5	37	62.3	.....
Columbia	Brazoria	J. B. Bostwick	30	88	6	35	64.9	1.92
Blue Branch	Burleson	F. S. Wade	29	84	15	31	60.4	5.30
Lavacca	Calhoun	L. D. Heaton	28	90	15	38	61.4	2.40
Waco	McLellan	Edw'd Merrill, M. D.	29	94	15	27	58.9	4.50
Austin	Travis	J. Van Nostrand	29	88	15	29	59.9	3.51
Averages							60.8	3.63
LOUISIANA.								
New Orleans	New Orleans	Robert W. Foster	31	82	5	41	.....	.....
MISSISSIPPI.								
Grenada	Yalabusha	Albert Moore	31	86	5	24	53.5	5.10
Natchez	Adams	Robert McCay	31	77	1	27	57.6	6.89
Marion C. H.	Lauderdale	Thos. W. Florer	30, 31	82	1	18	55.3	3.10
Averages							55.5	5.03
TENNESSEE.								
Elizabethtown	Carter	Chas. H. Lewis	14, 27	72	7	6	43.8	2.95
Tusculum College	Green	S. S. and Rev. W. S. Doak.	27	68	6	16	45.3	1.00
Clarksville	Montgomery	Prof. W. M. Stewart.	27	77	5	15	44.4	5.67
Trenton	Gibson	W. T. Grigsby	31	76	5	20	47.0	5.03
Memphis	Shelby	Ed. Goldsmith	31	82	1, 7	22	47.5	6.37
Averages							45.6	4.08
KENTUCKY.								
Pine Grove	Clark	Dr. Samuel Martin	27	70	7	8	39.0	3.48
Lexington	Fayette	S. R. Williams	28	70	7	9	39.7	4.39
Danville	Boyle	O. Beatty	27	75	7	10	44.6	3.50
Louisville	Jefferson	Mrs. L. Young	28	75	6	6	46.2	4.66
Clinton	Hickman	Rev. T. H. Clellan	27	77	5	15	42.4	5.69
Averages							41.2	4.34
OHIO.								
New Lisbon	Columbiana	J. F. Benner	28	65	1	— 6	30.4	4.12
Steubenville	Jefferson	Jos. B. Doyle	28	66	7, 16	10	34.3	2.77
Martin's Ferry	Belmont	M. B. Shreve	26	62	1	9	34.9	3.16
Painesville	Lake	H. J. Ferris	28	64	16	10	29.1	4.28

Table showing the range of the thermometer, &c., for March—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
OHIO—Continued.				°		°	°	*In.*
Gilmore	Tuscarawas	Samuel B. Moore	28	68	1	6	36.0	4.00
Milnersville	Guernsey	Rev. D. Thompson	27	64	16	— 1	32.6	3.24
Cleveland	Cuyahoga	Mr.&Mrs.G.A.Hyde.	28	69	16	3	29.6	3.89
Wooster	Wayne	Martin Winger	28	70	1,16	— 4	32.3	2.30
Gallipolis	Gallia	A. P. Rodgers	27	68	7	7	38.4	2.99
Kelley's Island	Erie	Geo. C. Huntington.	28	62	5,7	8	29.7	2.45
Sandusky	....do	Thos. Neill	28	68	7	5	30.1	2.67
Mt. Fairfield	Huron	O. Burras	28	71	7	9	31.3	3.50
Carson	....do	Mrs. M. M. Marsh	28	68	7	4	31.3	.....
Westerville	Franklin	Prof. Jno. Haywood.	28	72	6	7	33.8	4.59
Marion	Marion	H. A. True, M. D.	28	67	7	— 1	30.3	4.65
Hillsboro'	Highland	J. McF. Mathews	28	67	6	4	34.3	4.14
Toledo	Lucas	Jno. Trembly, M. D.	29	58	5,17	4	28.3	3.63
Bowling Green	Wood	John Clarke	28	73	16	— 5	29.9	2.54
Urbana University	Champaign	M. G. Williams	28	71	5	3	32.0	5.73
Bethel	Clermont	Geo. W. Crane	28	67	6	3	34.7	3.50
Jacksonburg	Butler	T. B. Owsley, M. D.	28	68	6	1	34.4	6.82
Mt. Auburn Inst	Hamilton	Prof. S. A. Norton	28	71	5	9	38.0	5.84
Cincinnati	....do	G. W. Harper	28	70	6	5	34.0	5.06
Do.	....do	R. C. Phillips	28	72	6	10	41.3	5.14
College Hill	....do	Jno. W. Hammitt	29	70	6	2	35.8	8.38
Averages							33.1	4.14
MICHIGAN.								
Monroe City	Monroe	Miss H. Whelpley	29	60	5	0	28.8	3.20
State Agricol'l Coll.	Ingham	Prof. R. C. Kedzie	28, 29	62	11	— 2	27.6	2.55
Litchfield	Hillsdale	R. Bullard	26	63	6	— 2	26.1	2.22
Coldwater	Branch	N. L. Southworth	28	63	8	—18	.....	.....
Grand Rapids	Kent	E. S. Holmes, D.D.S.	29	66	7	4	29.1	.....
Northport	Leelenaw	Rev. Geo. N. Smith.	25	52	4	— 2	24.5	.....
Homestead	Benzie	Geo. E. Steele	25	59	6	0	25.8	.....
Pleasanton	Manistee	J. D. Millard	29	61	4	— 1	24.0	2.20
Muskegon	Muskegon	H. A. Pattison	29	64	4	6	30.1	.....
Otsego	Allegan	Milton Chase, M. D.	29	70	6	6	31.6	.....
Copper Falls	Keewenaw	Dr. S. H. Whittlesey	25	53	4	—13	17.1	2.15
Penn Mine	....do	Rich'd H. Griffith	26	59	4	—10	19.8	.....
Ontonagon	Ontonagon	Edwin Ellis, M. D.	26, 27, 28	56	11	—12	21.1	.....
Averages							25.5	2.46
INDIANA.								
Vevay	Switzerland	Chas. G. Boerner	27	71	5	6	37.9	5.40
Muncie	Delaware	G.W.H.Kemper,M.D	28	76	6	1	38.9	4.50
Spiceland	Henry	Wm. Dawson	28	71	6	0	33.3	5.13
New Albany	Floyd	Dr. E. S. Crozier	27	81	6	5	39.9	2.56
Columbia City	Whitley	Dr. C. and Miss L. McCoy.	28	78	12	0	30.0	.....
Jalapa	Grant	Albert C. Irwin	28	75	6	5	32.8	3.06
Knightstown	Rush	D. Deem	28	71	6	— 1	33.3	4.00
Indianapolis	Marion	J. V. Woolen, M. D.	28	66	6	0	33.2	4.57
State University	Monroe	Prof. C. M. Dodd	27	66	6	2	35.5	6.29
Merom	Sullivan	Thomas Holmes	27, 28	68	6	0	35.7	4.08
Lafayette	Tippecanoe	J. W. Newton	27, 28	66	6	— 2	31.9	4.50
Kentland	Newton	Daniel Spitler	29	66	17	— 5	31.7	3.85

Table showing the range of the thermometer, &c., for March—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
INDIANA—Cont'd.				°		°	°	*In.*
New Harmony	Posey	John Chappellsmith	27	73	6	7	39.5	5.05
Harveysburg	Fountain	Dr. B. C. Williams	27	72	6	0	34.8	3.90
Averages							34.5	4.38
ILLINOIS.								
Chicago	Cook	J. G. Langguth, jr	30	68	6	3	32.4	1.33
Near Chicago	....do	Samuel Brookes	29	66	16	— 4	27.4	.....
Evanston	....do	Prof. Oliver Marcy	29	60	6	3	30.6	2.07
Marengo	Henry	O. P. Rodgers	27	58	5, 6	0	29.3	.....
Golconda	Pope	Wm. V. Eldredge	27	83	6	10	50.9	9.40
King's Mills	Kane	Mr. and Mrs. A. Spaulding.	29	60	6	— 4	26.3	0.69
Louisville	Clay	D. H. Chase, M. D	27, 29	72	6	5	37.8	8.25
Sandwich	DeKalb	N. E. Ballou, M. D	27	60	6	— 5	27.8	0.93
Belvidere	Boone	G. B. Moss	27	60	6	— 4	27.7	1.76
Ottawa	La Salle	Mrs. E. H. Merwin	27	65	5	6	33.5	1.38
Winnebago	Winnebago	J. W. & Miss Tolman	29	62	6	— 5	27.8	0.95
Rochelle	Ogle	Daniel Carey	27	60	6	— 6	28.4	.....
Wyanet	Bureau	E. S. & Miss Phelps	27	65	6	— 5	30.5	1.15
Tiskilwa	....do	Verry Aldrich	27, 30	60	6	— 3	30.8	.....
Hennepin	Putnam	Smiley Shepherd	27	66	6	— 1	31.0	.....
Elmira	Stark	O. A. Blanchard	27	62	6, 16	— 7	27.8	1.64
Peoria	Peoria	Fred'k Brendel	27	69	6, 16	— 2	31.6	1.61
Springfield	Sangamon	G. M. Brinkerhoff	27	74	6	— 2	34.6	.....
Loami	....do	Timothy Dudley	27	74	6	— 3	33.6	1.90
Dubois	Washington	Wm. C. Spencer	27	76	5	— 6	37.7	4.61
Waterloo	Monroe	Francis Sum	27	74	6	6	40.8	2.80
South Pass	Union	H. C. Freeman	27	76	5, 6	6	39.8	.....
Lombard University	Knox	Prof. W. Livingston	28	66	6	— 6	30.0	1.30
Manchester	Scott	Dr. J. & C. W. Grant	27	74	6	— 2	34.1	2.43
Mt. Sterling	Brown	Rev. A. Duncan	27	72	6	— 4	32.2	.....
Andalusia	Rock Island	E. H. Bowman, M. D.	30	66	6	— 5	31.9	.....
Augusta	Hancock	S. B. Mead, M. D	28	67	6	— 5	32.6	0.95
Warsaw	....do	B. Whitaker	27	75	6	— 6	32.1	1.56
Averages								
WISCONSIN.								
Manitowoc	Manitowoc	Jacob Lüps	28	53	4	— 6	26.2	0.75
Plymouth	Sheboygan	C. Moeller	29	59	4	— 8	24.6	0.70
Hingham	....do	John De Lyser	29	58	4	— 5	25.4	.....
Milwaukee	Milwaukee	I. A. Lapham, LL.D.	29	62	4, 6	— 1	27.7	1.17
Appleton	Outagamie	J. C. Foye	29	57	4	— 5	27.6	.....
Embarrass	Waupaca	E. Everett Breed	28	59	11	—14	24.3	.....
Rocky Run	Columbia	W. W. Curtis	29	62	6	— 8	26.9	1.13
Madison	Dane	W. W. Daniels	29	59	4	— 8	25.5	0.79
Edgerton	Rock	Henry J. Shinta	23	60	4	— 7	23.4	.....
Barahoo	Sauk	M. C. Waite	29	62	4	— 6	26.3	1.75
New Lisbon	Juneau	J. L. Dungan	29	66	4	—15	25.0	.....
Averages								
MINNESOTA.								
Afton	Washington	Dr. & Mrs. B. F. Babcock.	28	54	4	—20	20.7	0.47
St. Paul	Ramsey	Rev. A. B. Paterson.	28	55	4	—18	21.3	0.96
Minneapolis	Hennepin	Wm. Cheney	28	54	4	—23	20.3	0.96

Table showing the range of the thermometer, &c., for March—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MINNESOTA—Con'd.				°		°	°	*In.*
Sibley	Sibley	C. W. & C. E. Woodbury.	25, 28	49	4	—26	18.3	0.95
Koniska	McLeod	Thos. M. Young	25	45	4	—26	17.5	2.15
New Ulm	Brown	Charles Roos	28	49	6	—20	19.7	0.90
Madelia	Watonwan	W. W. Murphy	28	50	4, 6	—24	17.7	1.05
Averages							29.1	2.26
IOWA.								
Clinton	Clinton	Dr. J. P. Farnsworth	27	65	6	— 8	28.9	1.75
Dubuque	Dubuque	Asa Horr, M. D	28, 29	63	4	— 5	29.1	0.89
Monticello	Jones	M. M. Moulton	28	65	6	—10	28.2	.....
Bowen's Prairie	....do	Samuel Woodworth	27	66	6	—12	27.4	0.45
Fort Madison	Lee	Daniel McCready	27	68	4, 6, 16	— 3	32.6	1.68
Guttenberg	Clayton	Jas. P. Dickerson	27, 28	62	6, 16	—10	26.3	.....
Mount Vernon	Linn	Prof. A. Collins	27, 29	66	4, 6	— 8	27.9	.....
Iowa City	Johnson	Prof. T. S. Parvin	28	72	6	—12	30.3	0.59
Independence	Buchanan	Geo. Warne, M. D	27	63	6	—14	25.6	1.30
Near Independence	....do	Mrs. D. B. Wheaton	27	64	6	—17	24.6	2.05
Waterloo	Black Hawk	T. Steed	29	66	6	—14	26.2	.....
Rockford	Floyd	H. Wadey	27	62	6	—14	24.6	0.50
Iowa Falls	Hardin	N. Townsend	27	66	4	—12	26.8	0.83
Algona	Kossuth	I. H. Warren	28	56	4, 6	—16	22.2	.....
Near Algona	....do	Ph. Dorweiler	28	49	4	—18	19.5	.....
Fort Dodge	Webster	C. N. Jorgensen	28	64	6	—16	23.3	0.18
Rolfe	Pocahontas	Oscar I. Strong	28	57	6	—21	21.9	0.43
Fontanelle	Adair	A. F. Bryant	27, 28	68	6	—12	30.7	0.31
Grant City	Sac	Mr. & Mrs. L. Miller	28	68	6	—15	26.4	0.43
Logan	Harrison	Jacob T. Stern	28	66	6	— 8	31.5	0.50
Woodbine	....do	M. E. & D. R. Witter	28	67	6	— 8	20.5	.....
Averages							26.4	0.85
MISSOURI.								
St. Louis University	St. Louis	Rev. Jno. Straetmaus	27	75	6	7	39.8	2.73
Allenton	....do	A. Fendler	27	84	5, 6	5	39.1	4.21
Hematite	Jefferson	John M. Smith	27	81	5	5	40.9	5.90
Rolla	Phelps	Homer Ruggles	27	82	6	10	40.9	3.24
Jefferson City	Cole	Nicolas De Wyl	27	80	6	6	40.0	.....
Hermitage	Hickory	Miss Belle Moore	31	78	6, 15	6	38.8	2.91
Bolivar	Polk	James A. Race	27, 31	77	15	7	41.8	4.90
Warrensburg	Johnson	J. E. Pollock	27, 28	76	6, 15	0	39.9	2.22
Harrisonville	Cass	John Christian	31	78	15	0	37.8	1.35
St. Joseph	Buchanan	Rev. Henry Bullard	27, 28	70	15	6	39.2	1.94
Oregon	Holt	Wm. Kaucher	28	69	15	— 3	36.2	1.28
Averages							39.5	2.98
KANSAS.								
Atchison	Atchison	Dr. H. B. & Miss C. Horn.	27, 31	70	15	— 2	36.0	0.95
Leavenworth	Leavenworth	Dr. J. Stayman	31	80	15	— 2	35.7	1.03
Baxter Spring	Cherokee	Ingraham & Hiland	31	82	15	6	43.0	2.85
Lawrence	Douglass	Prof. H. F. Snow	31	80	15	0	35.1	1.15
Holton	Jackson	James Watters, M. D	31	80	15	— 2	37.0	.....
Le Roy	Coffee	J. G. Shoemaker	31	76	15	2	38.9	1.42
Neosho Falls	Woodson	Mrs. E. W. Grousbeck	31	82	15	1	36.8	1.90

Table showing the range of the thermometer, &c., for March—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
KANSAS—Continued.				°		°	°	*In.*
State Agricul'l Coll.	Riley	Prof. B. F. Mudge	31	72	15	— 2	35.7	1.06
Council Grove	Morris	A. Woodworth, M. D.	31	80	15	1	39.6	1.85
Averages							37.5	1.53
NEBRASKA.								
Dakota	Dakota	H. H. Brown	28	68	6	— 8	31.6	
Omaha Mission	Omaha Reserve	Rev. Wm. H. nilton	27	68	6	— 5	33.7	0.30
Elkhorn	Washington	John S. Bowen	28	68	6	— 4	32.0	
De Soto	do	Charles Seltz	28	66	6	— 9	31.3	0.28
Bellevue	Surpy	Mrs. E. E. Caldwell	28	69	6	0	34.8	
Glendale	Cass	Dr. A. L. & Miss Child	28	70	6	— 5	32.6	0.60
Nebraska City	Otoe	Prof. P. Zahner	27, 28	70	6	— 2	40.8	1.05
Peru	Nemeha	J. M. McKenzie	28	69	6	— 4	33.3	
Decatur	Burt	Dr. S. C. Case	28	69	6	— 2	32.6	0.63
Averages							33.6	0.41
UTAH.								
Wanship	Summit	Thos. Bullock	12	56	1	15	36.9	
CALIFORNIA.								
Murphys	Calaveras	Ephraim Cutting	11	72	31	28	50.0	6.13

NOTES OF WEATHER FOR FEBRUARY, 1869.

Steuben, Maine.—Faint auroras, 2d, 8th, 10th; severe storms of snow, hail, and ending with rain, 16th, 27th.

Williamsburg, Maine.—February snowfall, 55.25 inches; 56 inches deep now.

West Waterville, Maine.—Worst storm of season; 17.5 inches snow 26th, blocking roads. February snowfall, 45 inches; now fully four feet deep on a level.

Gardiner, Maine.—Auroras 2d, 8th, 18th; lightning and thunder during a northeast snow and hail-storm 4th; mean heat of February for 33 years, 20°.59; this February, 24°.54. Average moisture for 33 years, 3.27 inches; this February, 6.75 inches; but one equals it, February, 1853, when it was 9.47 inches. Snowfall this month, 34.5 inches.

Standish, Maine.—Snow in woods, 30 inches; most storms ended in rain.

Lisbon, Maine.—Sleet 15th, breaking down trees, and stopping cars till 17th.

Norway, Maine.—Snow-storm 3d, with gale and hail 4th; sharp lightning and heavy thunder at 2 a. m.; deepest snow of winter, 4 feet, 26th and 27th.

Cornishville, Maine.—Average heat of February for 40 years, 18°.50; this February, 23°.99; snowfall 43 inches deep, and solid as March enters.

Stratford, N. H.—Severe snow-storm, 19 inches, 3d, 4th, 5th; snowed on 19 days in February, 54 inches; and is now four to five feet deep in the woods.

Shelburne, N. H.—Good sleighing from November 9 to February 3, when the snow drifted, and its depth (five to six feet) stopped lumbering; in all 98.6 inches since October.

Antrim, N. H.—Hail, thunder and vivid lightning, 4th. Snow fell on 13 days in February, and on 30 this winter.

Goffstown Center, N. H.—Heavy thunder and sharp lightning 3d.

Lunenburg, Vt.—A snowy month; four feet on cleared land and five in the woods.

Barnet, Vt.—More snow on the ground than ever known before; it is light and drifts badly.

North Craftsbury, Vt.—Great snow-storm 3d, 4th; snow five feet in the woods, badly drifted; mails behind, and wells beginning to fail.

Randolph, Vt.—Snow-storms 3d and 4th, 18th, 26th and 27th; hail, sleet, and snow 23d; snowfall in February, 37.5 inches.

Woodstock, Vt.—Snow or rain on 17 days; 40 inches snow in February.

West Charlotte, Vt.—Frequent snow, hail, and rain storms.

Brandon, Vt.—A stormy month; snow drifted badly, with a sharp crust.

Kingston, Mass.—Aurora (evening) and thunder, (night,) 3d.

Georgetown, Mass.—Gale, thunder and lightning, 3d, at night; blue birds and robins 12th to 23d, few since; only wholly clear day 28th.

New Bedford, Mass.—Month very mild; little frost in ground, or ice in harbor or river; and only .75 inch snowfall.

Worcester, Mass.—Stormy all day, then thunder-storm, 3d; linnets 23d.

Lunenburg, Mass.—Average heat of February for 30 years, 26°.38; of 1868, 18°.92; of 1869, 27°.60.

Amherst, Mass.—Snow, hail, rain, 3d, 4th; hail, rain, 14th, 15th; rain and freeze 23d; snow 26th; winds and drifts 27th.

Richmond, Mass.—On 3d, snow and gale all day; at night heavy thunder, lightning, hail, and rain; rain, hail, snow, 15th, loading trees heavily.

Hinsdale, Mass.—A stormy, squally month; much snow and wind.

Providence, R. I.—On 3d, 6 to 10 a. m., snow, then rain till 9 p. m., and at midnight lightning, thunder, and rain. February 6°.45 warmer than in 1868.

Pomfret, Ct.—Thunder, vivid lightning, rain, hail, covering trees with ice, 3d. This February warmer than last, and above the average of the 16 last past, with little snow.

Columbia, Ct.—Snow, rain, sleet, thunder, lightning, 3d; blaebirds 24th.

Waterbury, Ct.—Snow, hail, rain, thunder, lightning, 3d; auroras 4th, 5th.

Brookfield, Ct.—Heavy thunder-storm 3d; auroras 5th, 11th; blue-birds 16th; robins 28th; best sleighing this winter; month unusually mild.

Moriches, N. Y.—At 9 p. m. on 3d vivid lightning in south, with some thunder; faint, low auroras 11th, 19th. An unusually mild winter.

South Hartford, N. Y.—Month unprecedentedly warm and mild; no thaw or rain of note; three months excellent sleighing; 35 inches snow in February.

Garrison's, N. Y.—Heavy thunder-storm from northeast 3d; month moderately and uniformly cold; ground covered with snow; little frost in the ground.

Nyack, N. Y.—Thunder-shower 3d; auroras 4th, 11th; river yet open.

Newburgh, N. Y.—Thunder, vivid sheet-lightning, hail and rain, 3d.

North Hammond, N. Y.—Month changeable; largest amount of snow on ground in several years; snowfall this month nearly four feet.

Depawville, N. Y.—Faint aurora 9th; since 10th, storms nearly daily, mostly snow, which is now two feet deep on a level.

Palermo, N. Y.—A hard drifting snow-storm 18 inches, 3d, 4th, 5th;

misty rain 14th, covering trees with ice; mean temperature of winter 22°.2; snowfall 112.5 inches.

North Volney, N. Y.—Aurora in luminous patches 5th; snow on 18 days, frozen rain on four, and rain on other three days.

Newark Valley, N. Y.—Remarkably mild month; little frost in ground.

Buffalo, N. Y.—February, mean temperature higher than in 11 years; ground bare of snow from 11th to 21st.

Newark, N. J.—Aurora 4th; the warmest February in 25 years was in 1851, the coldest in 1858; the average mean of the 25 was 30°.48; this month, 33°.29.

Morristown, N. J.—Very mild winter; only 16 inches snow; 11.66 inches water; average temperature 32.42; thermometer but once down to 9°.

Rio Grande, N. J.—Heavy thunder, diffuse lightning, great rain, 3d, 8 to 9 p. m.

Newton, N. J.—On 3d, snow last night; sleet and hail 7 a. m.; drizzly rain 2 p. m., frequent lightning; some wind and drizzle 6 to 9 p. m.; aurora 5th.

New Germantown, N. J.—Frequent flashes lightning 3d; auroras 5th, 11th.

Newfield, N. J.—Bluebirds 1st; thunder and lightning 3d; auroras 5th, 11th; robins 8th; larks and blackbirds 13th; frogs 14th; temperature 10° above last February.

Greenwich, N. J.—*Viola tricolor* 1st; dandelion 14th; lowest temperature this year, 28th; month very mild and open, but winter "went out like a lion."

Vineland, N. J.—Only three days, (5th, 7th, 28th,) below 32° all day.

Nyces, Pa.—Heavy rain, thunder and lightning at 7 p. m. 3d; thermometer at 30°.

Fallsington, Pa.—A mild, open, moist month, and bad roads.

Plymouth Meeting, Pa.—Froze in shade at m. on 1st, 2d, 5th, 27th, 28th, only.

Dyberry, Pa.—Thunder-storm 3d; robin 13th. Sleighing December 8th to February 13th. Last fortnight changeable weather, and much sickness from colds, &c.; February, snowfall 9.5 inches; all winter, 47.2 inches.

White Hall, Pa.—Snow, rain, lightning, thunder, 3d; bluebirds and robins 13th; much alternating snow, rain, cloud, clear, all the month.

Factoryville, Pa.—Snow, sleet, rain, lightning, thunder, snow again, 3d; month unusually mild; winter 4° warmer than average of four last; thermometer below zero only on December 11th.

West Chester, Pa.—Much lightning, some thunder, evening 3d; blackbirds 14th.

Phenixville, Pa.—Thunder-storm at 6 p. m. 3d; blackbirds 15th.

Ephrata, Pa.—Thunder-gust from west, with little wind, 6 to 8 p. m. 3d.

Fountain Dale, Pa.—Bluebirds and mountain robins, (red thrush,) 10th; robins 21st; except "lion-like," 27th and 28th, the month was fine—little frost, ice, or snow.

Tioga, Pa.—Diffuse lightning south, 7 p. m., 3d; aurora 5th.

Grampian Hills, Pa.—Snow still very deep 1st; fields getting bare 21st. First half of month mostly moderate and fair; last half cloudy, stormy, cold.

Franklin, Pa.—Rain on eight and snow on 13 days; mean of February, 1868, 18°.56; of this month 24°.75.

New Castle, Pa.—Winter very mild; extremes both in February, (13th and 28th.)

Canonsburg, Pa.—Violent wind at night 2d; smoky, then snow at night, 3d; bluebirds 3d; robins 21st.

Woodlawn, Md.—Frog music in marshes 13th; robins 14th.

Johnsontown, Va.—Rain last night; showers p. m. with distant lightning and thunder, 3d; frogs 12th; lightning, blackbirds, violets, 15th; (last year, violets March 25;) ice in a tub half an inch thick 24th.

Hampton, Va.—Lightning southeast 3d; weeping willows in full leaf 19th; robins 21st; narcissus 23d.

Bacon Castle, Va.—Thunder-shower 3d; alder and daisy 11th; elm in bloom 15th; turtle doves cooing 20th; maple and violets 24th. January and February both very mild, making a very mild winter.

Zuni Station, Va.—Brilliant aurora, distant lightning, 15th; maple blooming 18th; peach blossoms almost open 28th.

Lexington, Va.—Planted onions, crocus in blossom, hyacinth nearly, 13th.

Wytheville, Va.—Snow, rain, sleet, 1st and 2d; bluebirds, wild geese flying northwest, 12th; frogs 21st; doves cooing 22d; wheat looking well but bare and freezing.

White Day, West Va.—Thunder shower 3d; frequent snow squalls 16th to 27th.

Cabell Court House, West Va.—Wind, thunder, rain, snow, 3d; thunder, lightning, 13th.

Trinity College, N. C.—Ground frozen 5th; plum blooming 7th; ground frozen 16th; peach blooming 21st; ground frozen 25th and 26th to 28th inclusive.

Albemarle, N. C.—Small thunder cloud 3d; violets 4th; wild geese 6th; apricot 19th; coldest day this year 28th.

Aiken, S. C.—Robins 8th; peach blossoming 11th; thunder and lightning 14th.

Anderson, S. C.—Alder blooming 1st; cedar 19th; maple 21st; peach 23d; lunar halo and bow, 4° diameter, 24th. (All the colors were exhibited, equally bright, from circumference to centre—red, orange, yellow, green, blue, indigo, violet, red, orange, yellow—the last filling the interior space.) Except December and the last three days of February, this winter was "a failure."

Gowdysville, S. C.—Heavy general rain, then thunder, rain, and hail, 2d and 3d; ice, ground frozen, 5th; violets 6th; alder 11th; peach and plum 23d; snow 25th; severe freeze, endangering wheat, 28th.

Atlanta, Ga.—Fog, diffuse lightning, 9th; thunder storm 22d.

Macon, Ga.—Thunder and lightning in southwest evening 9th.

Moulton, Ala.—Month unusually mild, damp, cloudy, few heavy rains, snow scarcely whitened ground, no severely cold days.

Havana, Ala.—Thunder 1st, 9th; lightning 9th, 22d; light dash or snow 23d; frost and ice 28th.

Jacksonville, Fla.—First flakes of snow since February 27th, 1855, fell on 28th; mean temperature 3° above average; rain fall 4.87 inches above average.

Houston, Texas.—Auroras 2d, 5th, 28th; ice 23d; frost 24th, 28th.

Columbia, Texas—Thunder-storm with gale from southeast 12th; frost 28th.

Blue Branch, Texas.—Five inches sleet 21st; ice 8.10 inches thick 22d.

Lavacca, Texas.—Red mulberry in bloom 3d; mocking birds sing 10th; peach 13th; young dewberries set, plum blossom, 19th; coldest day this winter 28th; weather generally rainy and foggy all month.

Austin, Texas.—Peach 10th; lightning 12th, and thunder 21st.

Grenada, Miss.—Mist and light snow 3d; peach 10th; frogs, lizards,

butterflies, &c., 20th; rain and snow-flakes 22d, 23d; ground frozen 24th, 28th.

Brookhaven, Miss.—Frequent lightning and sharp thunder 1st; rain and sleet 3d; spit snow 4th; doves 8th; rattlesnake 10th; ice 23d.

Natchez, Miss.—Not one clear day; 5 rainy, 23 cloudy days.

Marian, Miss.—To 14th, rapid vegetation, since stationary; frost has nipped many peach blossoms, but farmers not yet discouraged.

Clarksville, Tenn.—Showers last night, ended in snow to-day, 3d.

Pine Grove, Ky.—Storm of wind and rain, ending in snow, 3d, 4th.

Clinton, Ky.—Frogs 10th; wild geese going north 13th; winter very mild; the great breadth of wheat sown looks fine, and a month forwarder than common.

New Lisbon, Ohio.—Bees 7th; bluebirds 13th; robins, crows 17th; larks 20th.

Milnersville, Ohio.—Heavy rain with thunder, 8 p. m. 3d; crows 9th; maple sugar manufacture commenced 11th.

Amesville, Ohio.—Spring-like 1st to 20th; snows light and few sleet storms, but from 20th to close it was quite wintry.

Kelly's Island, Ohio.—Drizzling at intervals 2d, 3d, 4th; channel clear of ice 15th; violent drifting snow and channel filled with ice 23d.

Sandusky, Ohio.—Ducks 13th; bluebirds 14th; nine inches snow 23d.

North Fairfield, Ohio.—Fog, mist, snow, wind, furious snow storm, 3d; first spring buds 10th; aurora 11th; bluebirds going south 16th; stormy month.

Carson, Ohio.—Rain at noon 2d, ended in blinding snow storm, east-northeast, 3d; bluebirds 12th; phebes 13th; robins 14th; drifting snow storm, east-northeast, 23d.

Marion, Ohio.—A month of frequent, sudden, and great changes.

Toledo, Ohio.—Rain, sleet, snow-storm, 2d, 3d; auroras 6th, 11th; highest February temperature (66°) in many years 15th; good sleighing 23d to close; a foot of snow on ground.

Urbana, Ohio.—Ice gone (remained here since November) 11th; lightning at night 14th; ponds frozen again 23d.

Bethel, Ohio.—Rainbow 2d; very bright rainbow 3d; distant lightning 22d.

Adrian, Mich.—Song sparrows 11th; rain on 4 and snow on 10 days. Prospect for fruit good; wheat looks well.

Litchfield, Mich.—Auroras 11th, 17th; frogs 12th; thunder-shower 14th.

Grand Rapids, Mich.—Second term sleighing, 3d; used up 8th; third term, 24th, considerable snow yet on the ground.

Northport, Mich.—Except a few days, first half of month and more was very mild; the remainder was windy, cold, and stormy.

Aurora, Ind.—Occasional showers, at night snow, 3d; robins 11th; lightning, southeast, 6 to 7 p. m. 14th; robins left 23d.

Vevay, Ind.—On 3d at 7 a. m. a rainbow of great beauty, and at 2 p. m. violent rain, hail and thunder; frogs 10th; lightning in east 14th; crocus 20th.

Spiceland, Ind.—Moderate rain, then snow, 3d; month unusually mild, mean temperature 5° above the average of 14 years.

New Albany, Ind.—House-fly, 2d; sprinkle of snow (colder than since Jan. 1st) 4th; sparrows 6th; crocus, silver maple, 12th; cold 23d to close.

Knightstown, Ind.—Lightning southeast in p. m. 14th; wild pigeons 15th; wild geese flying to southwest 24th.

Kentland, Ind.—Sleet, then rain all day, 2d; ending with snow storm 3d; spring like 3d to 18th; ground not frozen since general thaw.

Sunman, Ind.—Heaviest snow this winter (five inches) 22d; grain looks well and fruit is all safe yet.

Chicago, Ill.—First schooner from Saugatuck, Mich., 1st; lake navigation clear in all directions; aurora, 11th. Lake Michigan less ice this winter than for many years.

Kings Mills, Ill.—After 14th, stormy several days at a time, drifting snows and unpleasant; after 22d, very cold.

Belvidere, Ill.—Snow storm with heavy wind 3d. This winter 6°.88 warmer than last; this February 7°.97 warmer than last.

Ottawa, Ill.—Rain, hail, snow, sleet, 2d, 3d, 4th; then mild and thaw to 12th; snow storms and flurries 14th to 23d; Illinois and Fox rivers free of ice 17th; frozen over again 28th.

Winnebago, Ill.—Snow, sleet, 1st; drifting snow 2d; aurora 3d; mean temperature of this 2°.59 above average of last 12 Februarys; this winter 2°.35 above average of last 10 winters, in which 1862–'63 was warmest.

Hennepin, Ill.—Dull, foggy, misty, and some snow till 11th; bluebirds 13th; after this variable, frequent snows till close.

Loami, Ill.—Frogs, bluebirds, 12th; sugar-makers in woods, "distilling liquid sweets for daily use," 5th to 12th.

Dubois, Ill.—Drizzling 1st, 2d; changed to snow 3d; crows from south 10th; frogs 12th; turtle-doves cooing 19th.

Waterloo, Ill.—Rain 1st; dense fog 2d; snow 3d; bluebirds came 12th, but disappeared before 28th.

Mt. Sterling, Ill.—Mild till 22d, so that buds and grain needed the six inches snow on 21st to save them from the cold 23d, 27th, and 28th.

Andalusia, Ill.—Very brilliant aurora 3d; only appearance of wild geese and ducks 12th; river clear of ice 16th; full of ice again 28th.

Manitowoc, Wis.—Aurora—arch, beams, and corona, 7, 10, and 11 p. m. 3d; frogs morning and evening 7th and 9th.

Plymouth, Wis.—Bright but light-colored aurora 3d, after a heavy snow storm of 14 inches of snow.

Embarrass, Wis.—Brilliant aurora p. m. 3d; faint, a. m. 4th.

Baraboo, Wis.—Severe snow, drifting roads full, 3d; pleasant ever since.

Madison, Wis.—Brilliant aurora, arched band, and bright rays, 3d.

Rocky Run, Wis.—Aurora (streamers) 3d; (diffuse) 4th, 6th, 10th, 11th.

Rochester, Minn.—Auroral arch 3d; auroral light 4th; sleet, loud thunder, and vivid lightning in east, 13th.

St. Paul, Minn.—First 19 days very mild, the rest moderately cold. Two Februarys and one winter in 10 years have been milder, but this February had more snow and rain than any known—2.83 inches; average in 10 years but little over half an inch.

New Ulm, Minn.—Auroras (bright streamers) 3d; (even light) 4th.

Clinton, Iowa.—Rain, snow, 1st; snow all day, roads blocked, 2d; aurora 3d; river clear 17th; frozen again 23d. Mostly a spring-like month.

Dubuque, Iowa.—Rain last night, after lightning and thunder, 13th.

Monticello, Iowa.—Auroras 3d and 4th; Maquoketa river free from ice first time this winter 15th.

Bowen's Prairie, Iowa.—Snow-storm 2d, 3d; pleasant till 12th; rainy till 15th; pleasant till 18th; six inches snow 18th; steadiest cold we have had till close; a pleasant winter and best sleighing we have had for years.

Muscatine, Iowa.—Wild ducks 12th; ice broke up 15th; steamboats run 22d.

Guttenberg, Iowa.—Month wet and sloppy; hard on cattle.

Iowa City, Iowa.—Beautiful aurora, numerous streamers, 3d; snow-storm (eight inches) 1st, 2d, 3d; month very mild, frost out of ground

Independence, Iowa.—Snow all day 2d; aurora 3d; month ended wintry.

Waterloo, Iowa.—Forty hours snow (14 inches) 3d, 4th; Cedar river open 14th.

Iowa Falls, Iowa.—Rain, sleet, snow 1st; drifting snow storm 2d; aurora 3d.

Algona, Iowa.—Rain, snow, badly drifting snow storm 1st, 2d, 3d; auroras 3d, 4th; sharp lightning in west 12th; an unusually pleasant month.

Near Algona, Iowa.—Most brilliant aurora of the season, arch and streamers 3d; auroras 4th, 9th, 11th.

Boonesboro', Iowa.—Ice-sleet 1st; northeast snow storm 2d; drifting snow-storm 3d, blockading roads; aurora 3d.

Rolfe, Iowa.—Hail-storms, with lightning and thunder, 12th, 13th.

Lizard, Iowa.—Brilliant aurora 3d; lightning and heavy thunder (night) 12th.

Grant City, Iowa.—On 3d, old snow 12.5 inches deep, new fallen 11.5 inches.

Logan, Iowa.—Beautiful aurora 3d; forked lightning in southeast 16th.

Woodbine, Iowa.—Faint aurora 3d; first part of month spring-like, last cold; snow all gone except drifts.

St. Louis, Mo.—Steady drizzle, snow-storm 2d, 3d; sleet and freeze 21st.

Hematite, Mo.—Bluebirds 1st; frogs 6th; yellow crocus and butter-cup 13th; robins 15th; snow gone 25th. Snow for December and February (none in January) one foot. December the coldest, and January and February, the mildest ever known here.

Rolla, Mo.—Sprinklings 1st; showers 2d; snowy 3d, 26th.

Bolivar, Mo.—Frogs, robins, &c., 8th; were quieted before close of month.

Jefferson City, Mo.—River navigable all winter except a few days.

Hermitage, Mo.—Very uniform high temperature to 21st; only snow in February (1½ inch) 22d; no ice in the streams all month.

Warrensburg, Mo.—Lightning 9 p. m., thunder in night, 12th; again 19th; pellet snow 20th.

Oregon, Mo.—Bright aurora, no streamers, 8 to 10 p. m. 3d.

Atchison, Kansas.—Ice out of river 9th; thunder-shower 1 to 2 a. m. 13th; river blockaded with ice 23d; mildest February ever seen here.

Leavenworth, Kansas.—Distant lightning and thunder p. m. 12th; lightning p. m. 26th.

Lawrence, Kansas.—Frost out of ground 8th; bluebirds 10th; farmers ploughing 18th; Kansas river open all February.

Holton, Kansas.—Month of snow, rain, and mud; cattle-feed growing scarce; fruit safe except peaches; fall wheat looks well; some spring wheat sowed.

Burlington, Kansas.—Mostly foggy till 10th; lightning 11th; bees out 12th. Month variable, but no extreme changes of temperature.

Neosho Falls, Kansas.—Wild geese and ducks all winter; no ice put up.

Manhattan, Kansas.—Farmers sowing spring wheat; cold after 20th.

Dakota, Neb.—Brilliant aurora 3d; ice on river unsafe 16th; safe 22d.

Glendale, Neb.—Blustery 2d, 3d; snow drifted 4th; Missouri and Platte rivers breaking up 10th; rain, with lightning and thunder in southwest, p. m. 12th.

Nebraska City, Neb.—Aurora, faint white, 3d; ice broken up in river, blue-birds, zigzag lightning and thunder in west, p. m. 12th.

Peru, Neb.—Damp, drifted snow 2d; aurora, no arch, rays to zenith, 3d.

Sitka, Alaska.—Night of November 13th, 14th last, between this and California, a meteoric shower. Between 10 and 11.30 from 10 to 100 per minute; continued till daylight; first appeared in southeast and passed to northwest. It was similar to but less brilliant than one seen in Massachusetts in 1833.

NOTES OF WEATHER FOR MARCH, 1869.

Lisbon, Me.—A month of fine weather, but six days below zero.

Houlton, Me.—Aurora 9th, beams to the zenith, and there whirled as if they met opposing currents; at 8 p. m. the southern horizon was lighted up; later, a band of light from east to west; color, white with occasional red tinge.

Steuben, Me.—Auroras 7th, 8th, 13th, and a brilliant one 9th, red, blue and green, mixed with white light. The rain at end of March melted the snow.

Williamsburg, Me.—Auroras 7th, 9th, the latter very bright.

West Waterville, Me.—Auroras 7th, 9th; robins 14th but left again. Temperature of month, 10°.48 below last year's, and 5°.51 below average of five years. Winter snow, 105 inches.

Gardiner, Me.—Auroras 1st, 2d, 7th, 8th, 9th, 11th, 16th, 18th. Good sleighing the whole month. March, mean temperature for 33 years, 29°.98; this year, 24°.75.

Standish, Me.—Faint auroras 1st, 7th, 8th; bright 9th, 17th—crows, 13th. Good sleighing the whole month.

Norway, Me.—Coldest morning this winter, 6th. Month 7°.5 colder than in 1868.

Cornish, Me.—Auroras 2d, 5th, 6th, 9th, 12th, 13th. Song sparrow, 12th.

Cornishville, Me.—Average March temperature for 40 years, 28°; this, 24°.43. Snow hard, three to four feet deep. Cold freezing rain on 28th, 29th, damaged trees.

Antrim, N. H.—Snow fell on 43 days since in October last.

Stratford, N. H.—Month cold and stormy; snow now five feet deep in woods.

Goffstown Centre, N. H.—Coldest weather of winter, 1st to 7th; auroras 6th, 7th, 8th; bluebirds 27th, robins 28th. Month cold, good sleighing throughout.

Lunenburg, Vt.—Snow four to five feet deep; roads high as the fences.

Barnet, Vt.—Very cold March, ice on Connecticut river two feet thick—no spring birds—maple sap not flowing; snow never as deep on 1st April.

Craftsbury, Vt.—Month 13° colder than in 1868, its first week the coldest this winter. More than 12½ feet snow fell since October 17th.

East Bethel, Vt.—Coldest month this winter; on 1st thermometer from 25° to 36° below zero in this section; robins and bluebirds 27th, song sparrow 31st.

Woodstock, Vt.—Robins and bluebirds 29th. Snowfall, 26 inches.

West Charlotte, Vt.—Auroras 8th, 9th; robins 29th, phebes 29th.

Middlebury, Vt.—Month unusually cold, rivers yet sealed over.

Brandon, Vt.—Coldest day this year, 1st; robins 29th, blue birds 30th.

Kingston, Mass.—Aurora 9th, blue birds 13th, robins 16th. Only 36 inches snow this winter against 96 last. Mean temperature of March below January's.

Topsfield, Mass.—Blue birds 11th; month closes spring-like.

Milton, Mass.—In the 56 hours previous to 31st 2.6 inches rain fell. Coldest March since 1863.

Billerica, Mass.—Snow and frost nearly gone; spring birds here.

New Bedford, Mass.—Wild geese 14th; crocus 24th; robins and blue-birds 25th.

Worcester, Mass.—Aurora 9th; bluebirds 14th; robins 26th.

Mendon, Mass.—Bright aurora 5th; robins, wild geese 28th. Snow gone.

Lunenburg, Mass.—Coldest March since 1863, (27°.34,) and 6°.08 colder than March, average of 30 years (3°.16.) Sleighing good till 26th.

Amherst, Mass.—Coldest days of winter 1st, 2d; bluebirds 19th; robins 28th. Constant sleighing for 110 days.

Williamstown, Mass.—Aurora 9th; sleighing still good 24th; robins and a thaw 27th; bluebirds 28th.

Hinsdale, Mass.—Aurora 9th. A cold stormy month, severest of the winter. Over 120 days sleighing this winter, and good yet.

Pomfret, Conn.—Cold, rough March, frightful to invalids; coldest in 17 years, except 1856, with mean 22°.6. The warmest was 1857, mean 38°.50.

Columbia, Conn.—Brilliant aurora 14th; snow and thunder 15th.

Middletown, Conn.—River again closed 1st; open 11th; first shad 27th.

Waterbury, Conn.—Aurora, pale white light, 9th; bluebirds 12th.

Colebrook, Conn.—Blue birds 10th; sleighing from December 6th to March 28th.

Brookfield, Conn.—March severer than the winter months; roads very muddy.

Moriches, N. Y.—Aurora 9th; big frogs talking vehemently 28th.

South Hartford, N. Y.—Wild geese 25th; woodchucks 26th; robins 27th; ground yet covered with snow. First three weeks the severest part of winter. Sleighing 111 days.

Garrisons, N. Y.—Auroral light 31st. Month unusually cold.

Nyack, N. Y.—Bright aurora 10th; frogs and birds 17th.

New York, N. Y.—Aurora with a steady white light 9th.

Minaville, N. Y.—Bitter cold and windy till 25th; good sleighing from December 6th to March 28th; robins and bluebirds 27th. Streams opened 29th.

Sloansville, N. Y.—Bright aurora 1st; very bright 17th; maple sap not flowing; good sleighing all month; but little frost in the ground.

North Hammond, N. Y.—Crows 9th; sparrows 27th; robins 29th. More snow on ground than ever known at close of March.

Houseville, N. Y.—Auroras 4th, 17th; snow four feet deep in woods 20th; thaw 25th; snow yet three feet deep 30th.

Leyden, N. Y.—Bright aurora 9th; faint auroras 13th, 16th; blue-birds 28th. The pine bulfinch migrated here from Hudson's Bay in November, and is yet here feeding on maple buds. We had only one entirely clear day in March.

South Trenton, N. Y.—Bluebirds 25th; robins 30th. Little snow and no frost left.

Depauville, N. Y.—Auroras 4th, 6th, 18th; crow 10th; rain and thaw 26th. Month more wintry than January. March, 1865, was 10°.9, and of 1868 7°.9 warmer than the month just past.

Oswego, N. Y.—Sleighing good till 22d, when robins came.

Palermo, N. Y.—Thaw on 25th; snow as high as the fences. Coldest March in 16 years, except in 1856, and stormed on 25 days. Ground

covered with snow four months and two days, and 116 days sleighing this winter.

North Volney, N. Y.—Auroras 1st, 9th, 31st, robins and bluebirds 28th.

Newark Valley, N. Y.—Month steadily but not intensely cold; over 100 days sleighing this winter; ground but little frozen.

Little Genesee, N. Y.—March was winter continued; from December 10th till 24th good sleighing nearly all the time.

Buffalo, N. Y.—Robins and bluebirds 26th, a fortnight late; pigeon 31st. Month 6° below average of 11 years; after 25th spring like; sleighing till 20th.

Trenton, N. J.—The lowest temperature of winter was in March; December 25th 8°, March 1st 6°; so cold in March only twice (1856 and 1860) in 25 years, and the mean temperature lower than any of the 25 except in 1852, 1856, and 1863. Fair weather about 20 days.

New Germantown, N. J.—No sleighing in March; some ploughing done.

New Field, N. J.—Coldest day of winter 1st; thousands of crows and blackbirds 24th; farmers planting early potatoes 25th; chewink heard 30th.

Nyces, Pa.—Bluebirds 14th; robins and blackbirds 25th. Some snow yet.

Fallsington, Pa.—First frogs 10th. A cold wet month, to be followed "probably" by a dry summer. Please observe.

Horsham, Pa.—March came in like a lion, blustering and cold the first week; frogs 13th; went out lamb-like, but wet, so that little ploughing is done.

Plymouth Meeting, Pa.—Steadily cold till 9th, mild till 15th, cold till 19th; variable till close.

Dyberry, Pa.—Aurora 9th; bluebirds 13th; robins 26th; liverwort 27th; phebe-bird 30th. Sleighing 109 days, and winter's snow-fall 62 inches.

Factoryville, Pa.—Very cold till 25th; mean of six years, 33°.07; this March, 28°.17.

Phenixville, Pa.—Robins 6th; bluebirds 9th; butterfly and bees 24th; ploughing 25th.

Ephrata, Pa.—Frogs 13th; pewee 27th; raspberry buds bursting 27th.

Harrisburg, Pa.—Thunder-gust 10th. Snow on six and rain on eight days.

Carlisle, Pa.—First thunder-storm 10th; blackbirds 17th. Wheat promises finely.

Williamsport, Pa.—Frogs 27th; flood in Susquehanna 27th to 30th.

Grampian Hills, Pa.—Coldest morning of winter 5th; winter snow-fall 102 inches.

Connellsville, Pa.—Thunder-storm 10th; doves 19th; frogs 24th.

Newcastle, Pa.—Coldest day this winter 16th. Coldest March in ten years.

Beaver, Pa.—Warm a. m. 10th; p. m. thunder-storm; thermometer fell 30°, and some snow. A mild winter; not down to zero since New Year's day.

Canonsburg, Pa.—Lightning and thunder in southwest 10th; killdeer 21st; lark 28th.

Woodlawn, Md.—Susquehanna closed 7th; opened 9th; snake 27th. Rain or snow 15 days, making roads muddy, and delaying farm work.

Johnsontown, Va.—Coldest day since December 12 7th; strawberry blossoms 17th; peach 28th, (last year 31st.)

Hampton, Va.—Hyacinths 15th; peach 22d; wild plum 24th.

Bacon's Castle, Va.—Coldest morning this year 7th; daisy 8th; plum and peach 23d; Indian corn planted 25th; martins and whip-poor-wills 27th. A boisterous, windy month.

Zuni Station, Va.—Faint aurora 31st. Only one cloudless day, but a favorable month for farmers who have improved it.

Comorn, Va.—A March colder than February or January; yet no thick ice.

Mount Solon, Va.—Month cloudy and damp, with little rain till close.

Lexington, Va.—Planted peas 4th; Goodrich potatoes 12th; sowed oats 18th.

Wytheville, Va.—Lightning in north 31st; except a few days a cold, wet month.

Weston, W. Va.—More stormy than winter months; hail, rain, snow, thunder and lightning, sometimes all in one day of 24 hours.

Cabell Court House, W. Va.—Thunder-shower; vivid lightning; snow and sleet 14th and 15th.

Kenansville, N. C.—Light showers 10th, and lightning in east in evening.

Oxford, N. C.—Peach and plum in bloom 14th; martins 27th.

Trinity College, N. C.—Brilliant aurora 9th; bluebirds 11th; peach 13th; corn planting 17th; frost, injuring peaches some, 23d; heavy thunder, no lightning seen, 28th.

Albemarle, N. C.—First three days blasted some peach blossoms; thunder-storms 9th, 19th; whip-poor-will 25th; grain telling well, and farmers planting corn.

Gowdysville, S. C.—Ice 18th, killing peaches in full bloom; strawberry 23d; frost 23d, 24th; cherries 27th to 30th. The coldest March in several years.

Camden, S. C.—Frost 13th, 18th, 24th; thunder-storm 29th; spring-like 30th, 31st.

Anderson, S. C.—Peach 10th to 15th; pear 24th to 28th; wet, but good for vegetation.

Macon, Ga.—Frost 1st, 7th; lightning 19th. But little rain in March.

Moulton, Ala.—Frost on six mornings, and ice 6th, 7th, and 16th; martins 22d; lightning and thunder 25th. March wet; no heavy rains; season forward.

Greene Springs, Ala.—Only heavy rain 3d; thunder-shower 19th. After first week, favorable for planting; fruit not much injured by frosts.

Jacksonville, Fla.—Frost 1st; since, vegetation advanced rapidly.

Port Orange, Fla.—Frost and ice 1st, killing orange buds and young trees; also new growth of peach and other trees.

Pilatka, Fla.—Frost 2d, killing cucumber, beans, tomatoes, &c.

Gilmer, Texas.—Month backward; unfavorable for planting. Corn nearly all planted; fruit prospect very good.

Houston, Texas.—Aurora 6th; thunder-showers 19th, 23d.

Columbia, Texas.—Frost 1st, 6th; snow, with thunder, 9th, 19th.

Lavacca, Texas.—Swans going north 1st; tornado from northwest, with vivid lightning and heavy thunder, 9th; martins 14th.

Waco, Texas.—Last frost 16th; grasshoppers have destroyed gardens, and are injuring vines and trees.

New Orleans, La.—Slight frost 1st; snakes abundant 12th. Spring tardy.

Grenada, Miss.—Ground frozen 1st, 5th, 7th; thunder-storm, changing to sleet and snow, 15th; peaches much injured, and planting two to three weeks late.

Natchez, Miss.—Cold and frosty 1st; light frost 16th; not one clear day.

Marion, Miss.—Severe frost 1st; mocking birds 12th; fireflies 30th.

Elizabethton, Tenn.—Ground frozen 6th; frost 30th; peaches not much injured; wheat hardy and thrifty.

Clarksville, Tenn.—Fierce gale from northwest 6th; thunder-storms 22d, 28th, 29th.

Trenton, Tenn.—Sleet 3d; slight snows 10th, 11th; thunder-showers 14th, 19th, 29th; thunder-storms, with hail, 15th, 19th.

Memphis, Tenn.—Snow, 11th; rain froze in gauge, 15th; season backward.

Pine Grove, Ky.—Snowed on 3d, 8th, 11th, 12th, 15th; snowed or rained on 17 days; season late; peaches not much injured yet.

Lexington, Ky.—Martins 23d; first real spring day 27th; month chilly.

Clinton, Ky.—Heavy frost 2d; snow 3d; thunder-storm with sleet 14th; frost 23d; peach and plum in bloom 27th; toads 27th; fruit safe; wheat promising.

New Lisbon, Ohio.—Thunder and snow-storm 10th; awful snow-storm 22d; bluebirds, martins 26th; roughest March ever known; vegetation not started.

Steubenville, Ohio.—Thunder-storm 10th; frost on 10 mornings; snow on four days.

Paincsville, Ohio.—Robins 3d; swans going north 16th; frogs 28th; oriole 30th.

Gilmore, Ohio.—Thunder-storm with vivid lightning 10th; frost and snow gone.

Kelley's Island, Ohio.—Tedious snow-storms 10th, 22d, each about five inches.

Sandusky, Ohio.—Bluebirds 25th; pewees returned and nesting 26th.

North Fairfield, Ohio.—Snow three inches 10th; six inches snow 15th; five inches snow 22d; bluebirds returned after three weeks' absence 24th; frogs 28th; coldest March in eight years.

Carson, Ohio.—Meadow-larks 14th; killdeer and blackbirds 19th; pigeons 26th.

Hillsboro, Ohio.—March colder than January or February, but warmer than in 1867.

Bowling Green, Ohio.—Five snows (16.5 inches) in March; left 25th to 28th; frost gone 31st. Wheat well protected all winter, and promises well.

Urbana, Ohio.—Robins 1st; meadow-lark 9th; frogs 26th. Mean temperature of January, 33°.88; February, 32°.88; March, 32°.

Bethel, Ohio.—Thunder-shower 25th December and March the coldest months of the winter. The peaches are yet safe, except about one-fourth killed in March.

Jacksonburg, Ohio.—Lightning in the north 14th; zigzag lightning with heavy thunder 25th; thunder-storm 28th.

College Hill, Ohio.—Thunder, heavy rain, but little wind, 1st; wind storm, and thermometer fell 22° in 12 hours, 6th.

Monroe, Mich.—Snow melting, and freshets 23d to 31st; wheat promising; spring birds and frogs musical and jubilant.

Lansing, Mich.—Meadow-larks 18th; robins and bluebirds 26th; first thunder-storm 28th; frogs 29th. The river is free of ice.

Litchfield, Mich.—Coldest morning of winter by 4° 16th; heavy hunder and warm rain 28th; a severe March; snow gone except drifts.

Coldwater, Mich.—Robins and bluebirds 25th; light thunder-shower 28th.

Grand Rapids, Mich.—Thunder-shower 28th; steamboats running 29th.

Northport, Mich.—Coldest morning this winter 4th; aurora 13th.

Homestead, Mich.—Thunder-showers 27th, 28th; but little maple sugar yet.

Pleasonton, Mich.—Snow 24 inches deep in sheltered spots; leeks an inch long under it. Potatoes are often left in the ground all winter without injury.

Copper Falls, Mich.—Greater extremes than in any winter month, and 11°.19 colder than last March; sleighing good except two days.

Penn Mine, Mich.—On the 10th 21° below zero at Houghton, 10 miles distant.

Vevay, Ind.—Storm 14th; gusts of wind from southwest, incessant roar of thunder and occasional flashes of lightning till 15th, when it ended in snow; thunder-storm from south 25th, with a terrific electric explosion; peaches killed and rose-bushes blighted with March cold.

Spiceland, Ind.—Stormy and wintry 4th, 22d; March colder than either January or February.

New Albany, Ind.—Terrible thunder-storm of rain, hail, and snow 15th; pewee 21st; thunder-storm 25th, 31st; severe rain-storm 29th.

Columbia City, Ind.—Snowed all day 4th, 5th, 6th, 7th, 10th, 22d; first thunder-storm 28th; frogs, martins, 29th.

Knightstown, Ind.—Bluebirds, robins, 20th; month severe by spells.

Indianapolis, Ind.—Diffused aurora 17th; bluebirds and pewees 27th.

Marengo, Ill.—Diffused aurora 2d; robins 24th; thunder and lightning 27th.

Golconda, Ill.—Deluges of rain 14th, 22d; large flocks of blackbirds 16th.

King's Mills, Ill.—Aurora, streamers, 1st; bluebirds and robins 23d; cold, unpleasant month; spring wheat not sowed; poor prospect for ploughing.

Louisville, Ill.—Peaches not much hurt; no spring work done yet.

Sandwich, Ill.—Fox river closed 85 days, opened February 26th; closed again 6th, opened 26th; wild geese February 26th, again 26th; bluebirds 26th; robins 27th.

Belvidere, Ill.—Heavy fall of snow 12th; March, mean temperature in 1867, 27°.78; 1868, 35°.75; 1869, 27°.69; ground not yet ready for sowing wheat.

Winnebago, Ill.—First thunder-storm 27th; mean temperature 4°.11 below the March temperature of 11 years.

Wyanet, Ill.—Aurora 2d; blackbirds 23d; robins 25th; thunder showers 27th.

Hennepin, Ill.—Furious west wind, worst storm this winter, 29th; spring birds plenty; not much ploughing and sowing done yet.

Tiskilwa, Ill.—Thunder-storm 27th; frost out of the ground 31st.

Springfield, Ill.—First thunder (no rain) 27th; thunder (little rain) 31st.

Dubois, Ill.—Coldest March day known 5th; severe northwest storm, snow, hail, lightning, thunder 14th; pewee 16th; mud very deep; peaches killed; other fruit safe.

Waterloo, Ill.—Snow (6 inches) 3d; 24 hours rain 9th; frogs 25th; martins 27th.

South Pass, Ill.—Frost and wind of 5th and 6th injured many peaches; thunder-storm 14th; season unusually backward; no ploughing done.

Manchester, Ill.—Martins 3d; lightning, snow-storm 14th.

Mt. Sterling, Ill.—First thunder-storm 27th; frost nearly gone, but fields covered with water; farmers fear they will be unable to sow spring wheat.

Warsaw, Ill.—Sharp lightning and heavy thunder in west and north 31st.

Manitowoo, Wis.—Auroras 1st, 17th; thunder-storm from west 27th.

Plymouth, Wis.—Average mean of March for five years, 27°; this March 25°. April comes in with a heavy northeast snow-storm.

Milwaukee, Wis.—Auroras 2d, 16th; first thunder showers 27th.

Hingham, Wis.—Auroras 1st, 2d, 17th; robins; first thunder-storm 27th.

Embarrass, Wis.—Auroras 2d, 8th, 10th, 18th, 30th; loud thunder 27th.

Rocky Run, Wis.—Diffuse auroras 1st, 2d, 8th, 10th, 11th, 12th; ploughing 30th; regular northeast snow-storm 31st. Till 21st good strong winter; then till 30th fair April.

Rochester, Minn.—Auroral arch 2d, 17th; faint auroral light 14th.

St. Paul, Minn.—Coldest day since December 10th, 4th; fair sleighing till 23d; river open to Lake Pepin 31st. An unusually changeable March.

Afton, Minn.—Aurora 2d; last sleighing 26th; bluebirds 27th; robins 28th.

Koniska, Minn.—Crow river ice, 31 inches; breaks up 28th; singing of birds 29th.

New Ulm, Minn.—Auroras 1st, 2d, 10th; snow all day, increasing p. m. 31st.

Madelia, Minn.—Watonwan river opens 27th; northeast snow-storm 31st.

Clinton, Iowa.—Robins 23d; frogs, thunder shower 27th. No farm work done yet.

Dubuque, Iowa.—Auroras 2d, 12th; first boat from St. Louis 31st.

Monticello, Iowa.—Farmers sowing wheat 25th; first thunder-storm, with hail, 27th.

Bowen's Prairie, Iowa.—Gale with rain, hail, lightning, thunder 27th.

Ft. Madison, Iowa.—Second visit of bluebirds 22d; robins 23d; larks 24th; cold March; little sowing done; winter wheat and rye look well.

Iowa City, Iowa.—First thunder-storm 27th; snow, rain, and hail-storm 31st.

Independence, Iowa.—Faint aurora 2d; bluebirds, plover 24th; robins 25th; first lightning and thunder 27th. March goes out in a big lightning snow-storm.

Waterloo, Iowa.—Bluebirds 24th; robins, frogs 26th; snow-storm all day 31st.

Rockford, Iowa.—March came in very pleasant; went out stormy.

Iowa Falls, Iowa.—Railroad snowed up for three weeks 13th; hard wind all day 31st.

Algona, Iowa.—Ground covered with snow since November 16th; over 100 days' good sleighing; a first-rate winter for business.

Rolfe, Iowa.—Bright aurora 2d; a mosquito 29th; lightning in south 30th.

Logan, Iowa.—Sharp lightning and thunder 30th; high wind all 31st.

Woodbine, Iowa.—Sowing wheat 24th; ants working, young grasshoppers 25th; thunder shower, with hail, 31st. Month rather backward.

St. Louis, Mo.—First thunder and lightning 14th; thunder showers 30th.

Hematite, Mo.—Bluebirds nesting 20th; terrific thunder-storm 31st at night.

Rolla, Mo.—Month had 16 stormy days and great and sudden changes—40° or more in a day—besides much windy weather.

Jefferson City, Mo.—Snow and ice storm 14th; thunder and wind storm 31st.

Bolivar, Mo.—Heavy thunder, and heavens in a constant blaze, but no rain, 31st.

Warrensburg, Mo.—Coldest and most disagreeable winter in 25 years.

Harrisonville, Mo.—Distant thunder and diffuse lightning 27th, 31st.

Oregon, Mo.—Bees, bluebirds, 7th; prairies on fire 6th to 14th and 30th; snow all day and night 14th; robins 17th; first steamer up the river 22d; grasshoppers hatching out in great numbers 24th; frost out of ground 26th.

Leavenworth, Kansas.—Frogs 29th; hard frost a. m.; distant lightning 30th.

Holton, Kansas.—Bluebirds 8th; martins 30th; wheat nearly sown; fruit (except peaches) safe; month very changeable.

Lekoy, Kansas.—Wild geese here all winter, left for north 30th; thunder and diffuse lightning in southeast 31st; month dry, cool, and calm.

Burlington, Kansas.—Ground frozen 4.5 inches 5th; coldest day of season save one 15th; pewee, kingfisher 16th; kildeer 22d; martins 31st. Latest spring.

Neosho Falls, Kansas.—Robins 16th; blackbirds 26th. Cold, backward season.

Council Grove, Kansas.—Frost gone 9th, returned 10th; ground frozen 23d, frost out again 24th; excessive heat all day 31st.

Dakota, Neb.—Missouri broke up 22d, 10 days earlier than last year.

Elkhorn, Neb.—Horse-radish sprouting 2d; frost gone 31st.

Glendale, Neb.—Sudden change to cold 14th; some frost left yet.

Nebraska City, Neb.—Sudden cold 3d; river froze over 6th; ice left 7th; wheat sown 24th; pewee 30th; frogs 31st. Ploughing about 15th.

MONTHLY REPORT

OF

THE DEPARTMENT OF AGRICULTURE,

FOR

MAY AND JUNE

1869.

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1869.

MONTHLY REPORT.

WASHINGTON, D. C., *June* 19, 1869.

SIR: I herewith submit for publication the report of this division for the months of May and June, including a condensed statement of the condition of the growing crops, and articles upon Steam Plowing in New Jersey and in Louisiana; Fruit Culture on the Mississippi Rapids; Progress of Nebraska; Value of Sewage Deposits; Land Drainage in California; Wheat Culture in Virginia; Ixtle Fiber; the Esparto Grass; the Belgian Exposition of Agriculture and Forestry; Flax and Hemp in Russia; Agricultural Exports; Live Stock at Chicago; British Wheat Imports and British Wool Exports; together with Meteorological Tables and Notes on the Weather for the months of April and May, and a variety of extracts from the correspondence of the Department.

J. R. DODGE, *Statistician.*

Hon. HORACE CAPRON, *Commissioner.*

CONDITION OF THE CROPS.

The season has been somewhat peculiar; the mean temperature has been comparatively low, deluging rains frequent, hailstorms in unusual frequency and severity; frosts have been more destructive in the south than in the north, the cold and backward spring delaying bud development and flowering in the higher latitudes, and assuring a more abundant supply of fruits in the northern half of the country, with an unusual deficiency in the southern.

A result of these meterological conditions is almost everywhere seen in the replanting of corn, cotton, and other spring-planted crops, to a very remarkable extent, causing hindrance and obstruction in the work of the season, which was already delayed by the austerity and unseasonableness of the weather. The difficulties are great, but, in view of the perseverance and activity of our husbandmen, and the general dissemination of improved agricultural implements, not insurmountable. The spirit with which the repair of the damages has been entered upon has been indomitable, and the result of such efforts marvellous. Disasters which might naturally prove dispiriting have only stimulated activity. While these facts tend to discouragement, every day's advance in the season diminishes the cause of despondency, and obliterates the marks of the season's untowardness. A general increase having been essayed in acreage under cultivation, a good harvest will depend alone upon untiring efforts of labor and propitious seasons in the future.

Wheat.—The season has been generally well suited to the growth of small grains, throughout a wider geographical range than usual, and in more of the circumstances favoring successful production. Severe summer heats, in this climate, are apt to follow abruptly upon cool spring weather, and

develop rust, or enfeeble the plant at the critical period of its existence when its highest vigor is necessary to the production of a plump and perfect grain. This spring a cooler temperature in May and June has favored health and growth of wheat in latitudes south of 40°, and rust has been less prevalent than usual, and the promise greater of a satisfactory yield.

The returns show a high average condition of wheat, and indicate a good prospect of an abundant crop, if no casualties occur before or after harvest. It should be observed, however, that the size and succulence of the stalk favors "lodging" or "laying," which is reported as already somewhat serious in parts of the south and west.

Early in the season complaints were general of unthriftiness and backwardness, which in some cases were not remedied altogether by after-growth, but in most localities the plant became stout and healthy, though generally later in heading than usual. Very little winter-killing has been reported, the snow covering the ground with greater uniformity and more permanence than usual. In Tennessee the prospect is particularly good; in California better than last year if possible; in the great wheat-growing States of the west the growth has been vigorous in most places, quite too luxuriant in fact, and to some extent damaged in consequence.

Rust is reported in a few counties in North Carolina and other southern States, and in Kentucky, Missouri, and to a slight extent in Illinois and the Ohio valley. In Alexander county, Illinois, complaint is made that the lower portion of the head is not filled, the imperfection being attributed to wet and chilly weather. In a considerable portion of Indiana damage has been sustained by floods upon level and low lands. Grasshoppers have been destructive in Utah, and to some extent in other regions west of the Mississippi.

Accumulating evidence might be presented of the utility and economy of drilling and thorough cultivation, as also of the profit of fertilizing, particularly in badly managed, neglected, and worn-out lands. The proof is all upon one side, admitting neither doubt nor discussion.

Effort has been made to obtain reliable information concerning acreage. The result shows a gratifying increase, amounting to about six per cent., or more than the advance in population. The Department estimate of acreage in wheat in 1868 exceeded 18,000,000 of acres; the returns of correspondents indicate an aggregate increase of more than 1,000,000 acres in California, Iowa, Minnesota, and elsewhere. Full returns from the Pacific have not been received, but the following estimates of increase are warranted by a careful analysis of returns:

	Acres.		Acres.
Iowa	224,000	Indiana	130,000
Minnesota	145,000	Tennessee	130,000
Ohio	140,000	Missouri	96,000

A considerable increase has also been made in Pennsylvania, Virginia, West Virginia, Michigan, and other States. No increase can be shown either in New York, Illinois, or Wisconsin, among the larger States. A decrease is apparent in South Carolina, Louisiana, and Texas. In Illinois a small increase in winter wheat is balanced by a reduction of the spring wheat acreage.

Other grains.—Rye, barley, and other grains, are generally in fine condition. The largest increase is in barley, and in the States west of the Mississippi, particularly in California, while a slight enlargement of area is reported in the Ohio valley, in New York, and elsewhere. Oats in the Ohio valley have scarcely been sown to the usual extent, but a

greater area has been put in elsewhere in the west, as in Michigan, Wisconsin, Iowa, Missouri, and Kansas. The crop is not quite in average condition in some parts of New England, and in parts of Ohio, Indiana, Illinois, and Minnesota, while in the more southern States the low temperature of the spring months has effected a decided improvement in a crop that generally suffers in those latitudes by sudden and extreme elevation of temperature at the season of heading.

Corn.—Planting has been everywhere retarded, either by excessive rain or cold, and partial replanting has been an inevitable necessity, at some points to the extent of one-fourth the area, in some cases one-third or one-half, and in Wood county, Ohio, two-thirds of the acreage. At the date of reports planting was in progress, in many cases not half finished, and nowhere completed north of the Ohio river. Latest returns represent the crop as backward; in some instances feeble, but generally green and vigorous, with a promise, a favorable season intervening, of a fair yield. The extent of area planted has been limited by the supply of labor and the necessity for replanting; a statement giving approximate estimates of it will be issued in July.

Cotton.—The high prices of 1868 have stimulated the business of cotton-growing; new operators have flocked into it, old plantations have enlarged their boundaries, and the indications are, unless Providence interferes to prevent the injury which will result from a large crop at the present time, that prices will decline; when an increase of 25 per cent. in bales will yield no increase in dollars, and the profits of the culture, as of yore, will be absorbed in the purchase of corn and bacon which should be grown and cured at home. Complaints of late planting, bad stands, cold and unfavorable weather, are more or less general throughout the cotton States; yet it will prove a very bad year for the plant if the product of last year shall not be attained. It is not too late, with good weather and exemption from insects, to obtain a yield of 3,000,000 of bales, which is quite as much as the markets of Europe and America require at present, in addition to the growths of other cotton fields; a larger yield will be sure to reduce materially the price obtained. The actual increase in acreage planted will be calculated for the July report.

From the Atlantic States, from North Carolina to Florida, discouraging accounts are general. The plant is yellow and sickly; there is a poor stand; replanting has been done or corn put in instead. Latest reports are more favorable; good weather is producing a wonderful change in the prospect; in many cases "a few hot days have made a great improvement." A few reports from Florida and Arkansas show that insects are appearing to some extent. See "Notes on the Growing Crops" for more particular accounts of cotton planting.

Other crops.—Sorghum will be cultivated more extensively than for many years, for sirup mainly, but in some places with the intention of attempting sugar-making. Hops are generally looking well. In Richland, Crawford, Columbia, and Waushara counties, Wisconsin, yards have been ploughed up, as well as in Montcalm, Livingston, and Calhoun, in Michigan, and in Minnesota and elsewhere; yet the prospect is good for an ample supply of the market. Particulars concerning a variety of other crops may be found in the tables of comparative acreage and condition, and in extracts from reports.

Fruits.—The yield of small fruits is unusually abundant, with a fine promise for those coming in later in the season. Peaches will be abundant in New Jersey and Delaware. There will be a fair crop in the west, and a short supply only in some localities in the southern States, where untimely frosts prevailed.

Table showing the condition of the crops, &c., on the 1st day of June, 1869.

STATES.	Winter wheat.		Winter rye.		Winter barley.		Spring wheat.		Spring barley.	
	Acreage compared with last year.	Average condition June 1st.	Acreage compared with last year.	Average condition June 1st.	Acreage compared with last year.	Average condition June 1st.	Acreage sown this spring compared with last.	Average condition June 1st.	Acreage sown this spring compared with last.	Average condition June 1st.
Maine	10	10	9.8	10	.....	.....	9.9	10.6	10.7	10.5
New Hampshire	9.8	10.9	9.5	10.8	.....	.....	10.3	10.7	9.8	10.6
Vermont	10	10.4	10.6	10.2	.....	.....	10.8	10.1	10	9.7
Massachusetts	9.6	11.8	10.1	10.1	10	10	10	10.6	10	10.7
Rhode Island	.....	.....	10	10.3	.....	.....	.....	.....	9.3	10.3
Connecticut	10	10	10.5	9.5	.....	.....	10	10	10	10
New York	10.3	9.6	9.7	9.5	10.2	10	9.5	9.9	10.7	10
New Jersey	10.4	10.7	10.1	9.8	.....	.....	.....	.....	.....	.....
Pennsylvania	10.5	11	9.9	9.6	9.7	10.3	9.3	9.3	10	9.6
Delaware	11.5	11.5	15	11	.....	.....	.....	.....	.....	.....
Maryland	10.3	11.2	9.8	10	.....	.....	.....	.....	.....	.....
Virginia	11	12	9.5	10.6	9	11.7	.....	.....	.....	.....
North Carolina	10.3	12	9	10.1	.....	.....	.....	.....	.....	.....
South Carolina	9.7	10	9.3	10.1	8.7	10	.....	.....	.....	.....
Georgia	10.2	11.3	9.7	10	9.6	10	.....	.....	.....	.....
Florida	.....	.....	9	10.2	.....	.....	.....	.....	.....	.....
Alabama	10.1	10.9	9.6	10	9.7	10	.....	.....	.....	.....
Mississippi	10.1	10.5	10	10.6	10	10.8	.....	.....	.....	.....
Louisiana	11	7.5	10.5	7.5	.....	.....	.....	.....	.....	.....
Texas	8.2	12	11.3	11.3	8.3	10.2	12.3	9.8	.....	.....
Arkansas	11.2	10.4	10	9.7	.....	.....	.....	.....	.....	.....
Tennessee	11.5	11	9.5	11.4	9.9	12.2	9.5	11.8	10.2	12
West Virginia	11.5	12.8	11.6	10.6	8.2	10.7	10.3	10.5	9.2	10
Kentucky	10.5	12.6	10.8	10.5	11.8	10.2	10.1	9.6	9	9.2
Missouri	13	10.3	10.6	10.2	10.7	10.3	11.5	11	11.2	10.9
Illinois	10.8	11	10.4	10.9	10.2	10.7	9.3	10.2	10.9	10.4
Indiana	11	11.7	9.7	10.9	9.9	10.8	9.5	10.1	11.4	10.3
Ohio	11.2	11.6	9.7	10.8	9.7	10.7	9.2	10.2	10	9.8
Michigan	10.6	10.7	10.4	10.3	9.8	9.9	10	10	10.4	9.9
Wisconsin	9.1	10.7	10.5	10.5	10	10.4	9.7	10.4	10.9	10.3
Minnesota	10.3	11.1	10.7	10.5	.....	.....	11.8	10.1	13.7	9.9
Iowa	10.4	10	10.1	10.7	13.5	12.6	11.6	11.1	12	10.6
Kansas	13	11.5	10.9	10.8	10.7	9.7	10.1	11.9	18.8	10.3
Nebraska	11.6	10	.....	.....	.....	.....	13	11	12.5	10.7

Condition of the crops, &c.—Continued.

STATES.	Oats.		Clover.		Spring pasture.	Maple sugar and molasses.		Sheep.	
	Acreage compared with last year.	Average condition June 1st.	Acreage compared with last year.	Average condition June 1st.	Average condition June 1st.	Amount of sugar made this year compared with last.	Amount of molasses made this year compared with last.	How many *hundredths* of the total number of sheep have been lost by disease or other casualty.	How many *hundredths* of the total number of lambs dropped this spring have died.
Maine	10.2	10.6	9.7	9.8	10	8.6	8.9	.09	.17
New Hampshire	10.3	10.5	10.6	11.3	10	9	9.6	.13	.15
Vermont	10.1	9.8	10.1	10.9	10.4	8.3	8.5	.09	.17
Massachusetts	9.4	11	10.5	11	10.8	10.3	9.6	.08	.10
Rhode Island	10	10.3	10	10.3	10.6	.....	.....	.05	.09
Connecticut	10.5	10.5	10.5	9.5	9.7	8.5	8.5	.05	.09
New York	10	10.2	9.9	10	10.3	10.6	10.2	.06	.09
New Jersey	10.2	10.1	9.6	8.9	8.9	.....	.....	.04	.06
Pennsylvania	10.5	9.8	10.2	9.6	10	10.8	10.5	.06	.10
Delaware	10	11	11	10	9.5	.....	.....	.03	.08
Maryland	10	9.7	9.9	10.5	10 9	.....	.....	.04	.07
Virginia	10.6	9.7	11.4	11.2	10.9	9	9.4	.09	.09
North Carolina	10.5	9.4	13	10.3	9.8	10.5	10.2	.09	.10
South Carolina	9.5	9.8	12.3	9.5	10.3	.....	.....	.12	.08
Georgia	10.5	10.3	13	10.4	10.3	.....	.....	.11	.09
Florida	9.7	10.4	.....	.....	10	.....	.....	.06	.06
Alabama	10.1	9.4	11.2	10.1	9.5	.....	.....	.10	.09
Mississippi	10.3	11.1	13.6	11.2	10.8	.....	.....	.09	.11
Louisiana	12	10	.....	.....	10.6	.....	.....	.06	.07
Texas	9.6	10.2	.....	.....	11.4	.....	.....	.07	.13
Arkansas	11	10.1	12	11.8	10.5	.....	.....	.10	.10
Tennessee	9.7	9.4	13	10.9	11.1	9.9	10	.09	.13
West Virginia	14.9	9.9	14.8	10.9	10.7	15.4	15.3	.09	.11
Kentucky	10.4	9	10.3	10.2	10.4	9.7	9.4	.05	.08
Missouri	11	10.4	11	11.2	11.5	9	13.8	.06	.12
Illinois	10.1	10.2	8.6	10.9	11.3	9.7	9.8	.08	.10
Indiana	9.7	9.9	10.5	11.3	11.1	9.9	10.2	.06	.14
Ohio	10.1	9.8	9.8	10.8	10.9	8.5	8.5	.10	.14
Michigan	10.9	9.9	10.7	10.6	10.7	12.4	11.5	.05	.09
Wisconsin	11.3	10.2	11	10.7	11	10.6	10	.06	.12
Minnesota	12.3	9.9	9.8	10	10.3	10.2	10.1	.06	.10
Iowa	11.6	10.8	10.9	10.7	11.1	9.4	9.6	.08	.15
Kansas	13.8	10.9	10.9	11.5	11.6	9.6	9.3	.06	.13
Nebraska	13.1	11.3	10	12	11.1	.....	.....	.04	.04

Condition of the crops, &c.—Continued.

STATES.	Wool.		Cows and calves.		Apples.		Peaches.		Pears.	
	How many *hundredths* of last year's wool clip still remain in the country.	Date of annual shearing in the county.	Average condition of cows this spring.	Number of calves dropped compared with average of former years.	Average amount of bloom this spring.	Average condition of the crop June 1st.	Average amount of bloom this spring.	Average condition of the crop June 1st.	Average amount of bloom this spring.	Average condition of the crop June 1st.
Maine	.04	.....	9.8	9.6	9.2	10.1	.....	.....	11.2	10.2
New Hampshire	.03	.....	8.8	9.6	8.3	9.4	9	9	10.2	10.2
Vermont	.15	.....	9.6	9.8	10	9.7	.....	.....	10.3	10.6
Massachusetts	.12	.....	10.6	10.7	6.3	8.5	10.6	8.6	8.8	9
Rhode Island	.28	.....	10.6	9.6	8.3	9	10	10	11.6	10
Connecticut	.14	.....	10.5	10.5	6.2	8.5	14.2	14	9.2	10.5
New York	.08	.....	10	10.3	9.9	9.7	11.1	10.4	10.7	10.1
New Jersey	.01	.....	10.3	10.1	9	9.8	11	13.3	9.6	9.5
Pennsylvania	.05	.....	10	10.2	11.6	11.2	13.3	11.9	12.9	10.9
Delaware	.00	.....	10.5	9	12	14.5	14.5	17.5	13.5	13.5
Maryland	.07	.....	10.4	9.8	11.4	11.6	10.5	9.7	11.4	11.3
Virginia	.04	.....	10.7	10.1	12.5	10.9	10.5	9.3	11.4	9.1
North Carolina	.09	.....	10.9	10	9.4	6.5	9.6	3.3	9.2	3.9
South Carolina	.05	.....	10.8	10.2	9.7	7	9.1	4.5	8.3	5.8
Georgia	.05	.....	10.2	10.3	9.4	7.8	10.7	6	9.2	6.5
Florida	.12	.....	9.4	9.8	.....	.....	11.3	8.5	.....	.....
Alabama	.09	.....	10	10.3	8.6	7.3	9	4.6	8.3	4.7
Mississippi	.08	.....	10.8	10.3	12.5	12.4	8.3	7.5	8	7.3
Louisiana	.18	.....	10	9.5	9.5	9	9	5.8	9.2	8.3
Texas	.04	.....	10.8	9.7	10.3	9.5	10.1	8.5	10	10.3
Arkansas	.12	.....	11.3	11.3	9.4	8.5	7.3	6.8	8	7.4
Tennessee	.10	.....	10.8	10.5	8	6.9	8.9	4.8	8.6	5.8
West Virginia	.03	.....	10.2	10.4	13	12.5	13	12.5	12.5	12
Kentucky	.07	.....	11.2	10.3	11.2	10.3	11.7	10	11.2	10.2
Missouri	.08	.....	10.5	10.5	12.6	11.3	5.9	7.4	10.9	10.5
Illinois	.03	.....	10.5	9.8	12.7	11.3	7.6	8.4	11.9	10.8
Indiana	.02	.....	10.7	11.7	13	12.7	10.7	10.7	11.6	11.7
Ohio	.04	.....	10.5	10.1	11.9	11.8	14	14.2	13.2	12.5
Michigan	.03	.....	10.5	10.7	11.9	11.5	16.8	13.7	13.2	11.7
Wisconsin	.08	.....	9.7	10.2	14.7	11.9	.....	.....	12.1	11.8
Minnesota	.09	.....	10.4	11.5	13.1	11.4	.....	.....	.....	.....
Iowa	.06	.....	10.6	11	12.3	11.9	10.5	10.6	12.2	11.8
Kansas	.11	.....	10.7	12.4	16	13	5.2	7.4	16.5	12.1
Nebraska	.03	.....	11	11.1	9.7	9.3	8.8	10.5	.....	.....

NOTES ON GROWING CROPS.

Sagadahoc county, Maine.—The season is rather backward, and a large portion of the grain, especially rye, was put in last week; the area planted and sown is greater than for some years.

Cumberland county, Maine.—The cultivation of sweet corn for canning purposes is taking the place in a measure of other cultivated crops, several thousand acres having been planted this spring.

Piscataquis county, Maine.—The season fully 10 days earlier than in 1868 or 1867, and wheat and barley promise 20 per cent. better than last year at the same date.

Orleans county, Vt.—Hops are raised to some extent in this county. Some seasons there have been sold $20,000 to $30,000 worth from a single town; but in consequence of loss by winter-killing and the damage by insects, the crop has fallen off 50 to 60 per cent.

Berkshire county, Mass.—May has been abundantly wet, so that grass and grain prospects are good, the grain looking very well.

Suffolk county, N. Y.—Winter grains that looked badly in the early spring have pushed forward under favorable weather, and now appear in average condition, though the stand is not quite as thick as usual.

Steuben county, N. Y.—The spring opened cold and backward, very unfavorable for corn, but favorable to winter grains, which now look extremely well.

Livingston county, N Y.—The worms have destroyed much spring grain. Some farmers are preparing to sow buckwheat in large quantities where oats and wheat have been destroyed. Grass looks well, except in a few old fields where the worms have been at work.

Madison county, N. Y.—Hops are looking well. Skunks are active and numerous; they enter hen coops and chickens disappear, but the animal is considered a benefit in the hop yard in digging worms out of the hills.

Genesee county, N. Y.—Hops are looking finely this season.

Dutchess county, N. Y.—Hops are in average condition.

Monroe county, N. Y.—Winter wheat much killed by cold spring and water on the surface. Underdrained lands much better than other lands.

Essex county, N. Y.—All crops are fine in this county.

Gloucester county, N. J.—Grass indicates a very light crop, perhaps not more than half as great as last year.

Camden county, N. J.—The grasshoppers destroyed so much of the cultivated grasses, that in driving 40 to 50 miles in this county we rarely see a field that will cut the average amount of hay, and a great many may be seen that will not yield one-fourth the usual crop.

Burlington county, N. J.—All crops are now growing rapidly, and if the present rate is continued will soon exceed an average.

Chester county, Pa.—Oats being so poor last year, much corn-stalk ground was sown in wheat, and this spring an increase of potatoes has been planted in place of oats.

Franklin county, Pa.—All crops look promising except grass and clover, which need sun and heat.

Fulton county, Pa.—While there could be no better prospect for straw, if the present wet weather continues any length of time it must injure seriously much of the heavy forward wheat, a great deal of which is down now; the prospect for a heavy crop is not flattering.

Tioga county, Pa.—Winter wheat and grass promise heavy crops.

Dauphin county, Pa.—Corn is suffering from the ravages of the wire worm; bugs are unusually destructive on melon and tomato vines, &c.

Lancaster county, Pa.—Wheat, rye, and oats look promising; timothy well set; clover mostly frozen out; corn coming up regular; more potatoes planted than usual; great preparation made for tobacco crop, plants scarce and late.

Lebanon county, Pa.—Grain crops are remarkably promising. Grass is backward. One-third of last year's crop of wheat and corn is still held by the farmers in this county, amounting in value to $500,000 to $600,000.

Armstrong county, Pa.—Never saw wheat looking better in this county; acreage larger than usual.

Lawrence county, Pa.—Corn is backward, and the cut-worm has been very destructive on spring crops.

Adams county, Pa.—Winter crops look very well, and farmers are looking for an abundant harvest.

New Castle county, Del.—Thirty per cent. increase in wheat acreage as compared with last year; oats not as good as wheat, but improving. Pasture below average.

Prince George's county, Md.—Potato culture on the increase—both sweet and white; 15,000 bushels will probably be the crop of sweet potatoes in the county.

Baltimore county, Md.—Vegetables are made a specialty in this county for the city market.

Cecil county, Md.—The oat crop has been so poor for two or three years past that some farmers sowed wheat on their corn stubble last fall.

Queen Anne county, Md.—Corn backward but rapidly improving.

Howard county, Md.—Oats are unusually backward; crops will be light, except on good land.

Bedford county, Va.—Wheat promising; oats materially injured by rains and cold winds.

Nelson county, Va.—Wheat prospect flattering, promising 12 to 15 per cent. above usual crop; oats not promising.

Roanoke county, Va.—Corn coming up badly and looking yellow; wheat heading later than usual. Some farmers are planting their tobacco lands in corn on account of the fly.

Buckingham county, Va.—The acreage of our tobacco crop has been reduced about one-half, and the cool weather has belated the young plants; beans, peas, broom corn, and particularly sorghum, are taking the place of tobacco.

Cumberland county, Va.—There will be three-tenths less acreage in tobacco this year than last. The young plants were considerably damaged last spring by the fly, hence they will be set out later this season.

Smyth county, Va.—Large area planted in corn. It came up badly, much requiring replanting, but the prospect is now fair.

Albermarle county, Va.—A fair stand of tobacco plants, and a prospect of more than an average of plants put in.

Spottsylvania county, Va.—Wheat in promising condition; oats backward; one-fourth more corn planted this year than last season and ground better prepared.

Gloucester county, Va.—More sorghum planted this spring than since 1865, owing to the enhanced price of sugar and molasses.

Princess Anne county, Va.—Corn is more promising than at any time within five years.

Beaufort county, N. C.—Area in corn about the same as last year, and though small, the stand is better than last spring. The cotton acreage is about 10 per cent. greater than last year, but the plants have been almost destroyed by the cold and frost in May.

Camden county, N. C.—The farmers of this county have increased the

acreage in white potatoes fully 75 per cent., and the crop is looking finely. The growing of market vegetables has also been commenced.

Duplin county, N. C.—Corn and cotton injured by the frosts of April and May.

Edgecombe county, N. C.—Area in crops 20 per cent. greater than last year, and the prospect for crops was never worse; corn is backward and cotton still dying.

Iredell county, N. C.—Wheat looking better than for 10 years.

Lincoln county, N. C.—Best prospect for wheat we have had for years; no appearance of rust. The spring has been very unfavorable for cotton, it being almost impossible to get a good stand.

Rowan county, N. C.—There is from five to ten times more area in cotton this year than last, and not so much corn as last year. Fertilizers but little applied, but much needed.

Sampson county, N. C.—Cotton has suffered very much; our farmers are now replanting, with poor prospect for a stand; the first planting has almost all been plowed up and reseeded.

Stokes county, N. C.—Wheat generally looking well, but there is some rust in places.

Harnett county, N. C.—Cotton greatly damaged; in some cases it is an entire failure thus far; corn not an average; oats poor.

Pasquotank county, N. C.—The wheat crop promises better than in any year since 1864; corn looks well but is backward; cotton is almost a failure, caused by the cold in May.

Mecklenburg county, N. C.—If no accidents befall our crops we shall harvest double if not three times the quantity of wheat raised last year. Cotton never looked so badly; not half a stand, and what is left looks yellow and sickly; many are plowing up their cotton and planting corn. The crop will be the smallest here for 20 years.

Anson county, N. C.—Corn looking fine; but cotton looks badly, from the long, cold spring. The stand is bad.

Yadkin county, N. C.—Wheat promises better than for several years past.

Wake county, N. C.—Cotton has a bad stand; a great deal has been replanted, but it will be late; hardly possible to make more than two-thirds of a crop.

Stanly county, N. C.—Almost everybody goes in for making cotton this year, and almost everybody looks gloomy over the prospect. Nearly all the seed dropped in April had to be replanted; many, listening to the suggestions in the agricultural reports, give greater distance to the plants, a great number planted in checks, manuring in the hill. Thick planting, however, has been so prevalent through this section, that the contrary method will be attempted with a sparing and timid hand even by those willing to make the experiment. Too many stalks will be left in the hills.

Martin county, N. C.—Cotton is very much behind the season; the first planting nearly all dying out.

Chester county, S. C.—Cotton seriously damaged by cold and damp weather; not over six-tenths of a stand; acreage increased, probably, four-tenths. Acreage in corn diminished three-tenths, but will be increased by planters plowing up land planted in cotton.

Orangeburg county, S. C.—Twenty per cent. increase in acreage, but the same per cent. decline in condition of cotton.

York county, S. C.—Cotton much injured by frost; much has been replanted; corn small and backward; stand generally good.

Newberry county, S. C.—Not more than one-fourth of a full crop of cot-

ton can be made even with a favorable fall season. Corn backward and stand bad.

Barnwell county, S. C.—Cotton backward; injured by cold weather and heavy rains; stand poor; many fields replanted twice; corn acreage less by one-tenth to two-tenths, but the stand is better than last year, with more manure and better cultivation.

Georgetown county, S. C.—Rice is the specialty in this county. Bad stands from first planting, and considerable had to be cut and replanted. Acreage greater than last year; crop small and of bad color, requiring hot, dry weather to bring it up to an average standard.

Richland county, S. C.—Cotton acreage increased 50 per cent., but owing to backward spring the condition is 25 per cent. below that of 1867. Large amounts of fertilizers have been used, which we trust will bring the crop up wonderfully yet. So far about three-fourths of a stand has been obtained.

Spartanburg county, S. C.—Planters generally say that they have not more than half a stand of cotton; some of them not so much.

Williamsburg county, S. C.—The prospect for the rice crop is very unpromising; the spring has been so dry that many farmers have failed to get it up.

Bartow county, Ga.—Unfavorable prospect for cotton; plants very small; stands poor, and still dying. Indications of a very short crop in this section. An average planted, with more fertilizers than ever before, and better cultivation.

Bibb county, Ga.—Ten per cent. increase in acreage of cotton, but the stands have been seriously injured by excessive wet and cold weather. Corn looks well, and the stands good.

Columbia county, Ga.—Coldest and latest spring for 20 years. Only three-fourths of a stand of cotton on light lands, and not much better on the red lands. Corn small, with bad stand. Impossible to make a full crop of either.

Carroll county, Ga.—Cotton looks bad; dying out; bad stand. Corn never more backward.

Clarke county, Ga.—Cotton as good as could be wished. Corn looking well.

Glynn county, Ga.—Cotton small and yellow, with poor stand. Corn has suffered much from cut-worm. The stand is bad. Rice, the principal crop of the county, is backward, but the stand is better by 10 per cent. than last year. Acreage increased about five per cent. Prospect of crop better than last year.

McIntosh county, Ga.—Cotton is promising so far; average with last year.

Warren county, Ga.—Cotton is unusually small, and so much of it has been killed that there is not half a stand. Farmers are much discouraged, but a few weeks of warm weather with occasional showers would work a wonderful change.

Whitfield county, Ga.—Wheat finer than for several years; 100 per cent. over last season. Oats and clover, an average.

Forsyth county, Ga.—Wheat promises an abundant yield; 100 per cent. better than last year, with 20 per cent. greater breadth sown. Cotton prospect very poor; double the acreage planted, but the cold wet weather has killed it out. There is a very poor stand. Some experiments with clover promise a fair yield on manured lands.

Cobb county, Ga.—Wheat much better than for five years past. The crop will be double that of last year if harvested without casualty. Corn backward. Cotton worse than usual, as it did not come up well,

and much died. Attention has been given to clover and the grasses with success.

Coweta county, Ga.—Cotton and corn backward 10 to 15 days. Stand of corn generally good. Some complaint of the stand of cotton, but some fields are a perfect stand.

Clayton county, Ga.—The late cold spring caused a very bad stand of cotton. Some have replanted with cotton, others with corn, and some with peas.

Decatur county, Ga.—Corn less acreage than last year; backward, but otherwise promising. Cotton acreage greater than last year, but the plants are backward. A considerable amount of fertilizers has been applied. Sugar-cane, much of the stubble killed; this will be left for seed.

Jackson county, Ga.—Cotton poor; no stand; much plowed up and corn planted.

Liberty county, Ga.—Cotton acreage increased 50 per cent., perhaps more, but the condition of the crop is unfavorable. Large crops of rice planted; 100 per cent. greater than last season; condition good.

Newton county, Ga.—Thirty per cent. greater acreage in cotton, but condition 20 per cent. below last year, same date. Large increase in amount of fertilizers used.

Polk county, Ga.—A large proportion of the cotton planted died from the cold weather, and the land has been planted in corn.

Butts county, Ga.—Wheat promises double the yield of last year.

Brooks county, Ga.—Cotton looking well; clean and growing. Acreage about the same as last year, but the quantity of fertilizers used is greater than in any preceding year. Corn acreage less than last year. Oat crop large and good.

Baldwin county, Ga.—Wheat has rusted in the southern parts of the county.

Cherokee county, Ga.—Cotton small, sickly, and late.

Early county, Ga.—Wheat seems generally to have rusted. Season very bad for cotton thus far.

Franklin county, Ga.—Wheat promises better than for several years. Corn a fine stand and looks well. Cotton never looked worse.

Fulton county, Ga.—Corn up, with a good stand, especially where it was mixed with tar and then rolled in ashes or lime to keep from sticking. One-fourth of the cotton plowed up and planted in corn. Cotton is backward, but notwithstanding the amount plowed up there is yet as much planted as in previous years.

Hall county, Ga.—In 1866 I sowed the first field in clover sown in this county. It proved a success, growing 5 feet 10 inches high, and having 20 blossoms on a stalk. This year a great many farmers have sown clover, and have good stands. The Tappahannock wheat promises a large yield.

Macon county, Ga.—Acreage in cotton 20 per cent. above last year, but the condition is much below.

Pulaski county, Ga.—Cotton is very backward for the season, but an average crop may yet be made with favorable weather. Sugar-cane is in good condition.

Putnam county, Ga.—Acreage in cotton about 20 per cent. above last year; condition 20 per cent. below, having been killed to that extent by cold.

Sumter county, Ga.—Up to 25th May cotton looked very badly, but a few hot days since have made a very great improvement in it. Corn is small, but doing well.

Walton county, Ga.—Cotton has received much attention, guano being used freely. The cool weather has caused it to remain small, and much has died out.

Bradford county, Fla.—Corn, cotton, potatoes, sugar-cane, and rice, in poor condition, caused by the cool, wet weather. Cotton has a sickly appearance. Season said to be the most backward known in Florida.

Levy county, Fla.—Cotton and corn very backward. Cotton worm reported all over the county, but not much damage done yet. Lice and other insects are numerous on all cotton. Dry weather is injuring corn very much, as it is tasseling. Sugar badly injured by the cold last winter, and is not looking well now.

Leon county, Fla.—Cotton and corn are not doing as well as usual at this season, owing to the unusually cold spring.

Nassau county, Fla.—Cotton badly hurt by cold and drought. Corn and potatoes look well. Tappahannock wheat looked well in the early spring, but is utterly destroyed by rust.

Manatee county, Fla.—There was very little cane seed to plant, the ice of Christmas and the severe frost of March killing most of the seed cane.

Liberty county, Fla.—The sugar crop of this county is remarkably backward, with bad stands.

Conecuh county, Ala.—Sugar-cane doing well, with one-fourth more planted. Most planters think cotton in worse condition than for several years. Corn looks well.

Greene county, Ala.—Cotton backward; poor stand. Corn promising, but neglected for the cotton crop.

Hale county, Ala.—Cotton, bad stand, very backward. Farmers discouraged, but a good season hereafter may make a good crop. Acreage in cotton and corn about the same as last year. Labor scarce. Freedmen working better than at any time since the close of the war.

Marengo county, Ala.—The stand of cotton is generally pretty good, but the plant is stunted by unseasonable weather. The crop is very unpromising, but a fair crop may yet be made. In the low ground the stand of corn is poor, and the whole crop is backward.

Perry county, Ala.—Cotton and corn late, and in bad condition.

Clay county, Ala.—Cotton poor; prospect never more gloomy.

Clarke county, Ala.—Cotton very small, and, so far, unpromising.

Dallas county, Ala.—Cotton, 20 per cent. increase in acreage; 30 per cent. decline in condition. Corn, an average with last year.

Marshall county, Ala.—The young cotton has died out until there is not much more than half a stand.

Chambers county, Ala.—Wheat is better than for many years past. Season has been unfavorable to cotton, but it is looking healthy, and there is about 20 per cent. more planted than last year. Corn small, but healthy.

Lee county, Miss.—Cotton very unpromising, dying to an extent unprecedented. The stand is bad in both cotton and corn.

Monroe county, Miss.—Increased attention being given to the culture of clover and tobacco, and indications are that these crops will hereafter be specialties, promising to be more remunerative than cotton.

Neshoba county, Miss.—Cotton has suffered immensely from the late rains and cold weather, and is somewhat deficient in stand.

Madison county, Miss.—With good weather the cotton crop may be an average, but the chances are to the contrary. Corn backward, but stand good.

Jefferson county, Miss.—Cotton and corn good for the season, but a month later than usual.

La Fayette county, Miss.—Cotton acreage somewhat increased; the stand is defective, but improving; with favorable weather may turn out a fair average crop.

Yalabusha county, Miss.—Prospect for cotton very unfavorable, in many localities not more than half a stand. With favorable weather the plants may still do well. Corn acreage small, and crop poorly cultivated.

Attala county, Miss.—Cotton and corn never poorer at this date, but they may yet be good.

Lauderdale county, Miss.—But one field (five acres) of wheat reported in county, and this is a failure from rust. Corn late. Cotton one-fourth less than in 1868.

Warren county, Miss.—Cotton looking feeble; seeds and young plants washed up during heavy rains of April, and cool weather has retarded growth. Yet with all these disadvantages it is the general opinion that the crop will exceed that of last year. Many who last year planted nothing but corn and potatoes, are on the other extreme this season, and many have abandoned city life for that of cotton farming; and in this county every nerve is being strained to make cotton, to the neglect of other crops.

Yazoo county, Miss.—A good season henceforth may bring cotton and corn up to two-thirds of a crop.

Issaquena county, Miss.—Rather more than average acreage planted in cotton, but reduced to about the same as last year by overflow of the Mississippi. Condition, late, small, but tolerably healthy.

Coahoma county, Miss.—The cotton acreage is about the same as last year. The crop does not look so well, but little can be judged from cotton at this season of the year. All that is desired is a good stand, with this the worst prospect may produce the finest crop. The recuperative power of the cotton plant excels that of all others. We are favorably circumstanced to reach, if not to exceed, the figures of last year, about 7,000 bales. The crop of 1860 reached 13,325 bales. The corn acreage is not so large as last year by one-sixth.

Morehouse parish, La.—The corn crop promises much better than last year; and cotton, though late, promises well.

Tensas parish, La.—Corn and cotton not so promising as at same date last year. Acreage about the same. They are now growing finely.

Carroll parish, La.—May has proved disastrous to cotton; most planted then requiring replanting. Wheat destroyed by rust, including the Tappahannock, which was very promising until thus attacked.

Jackson parish, La.—Corn is three weeks late. Cotton looks very badly; most of it dies as soon as it comes up. The stand is so bad that it will be impossible to make an average crop.

Winn parish, La.—Corn and cotton look as well as usual this early in the season. The acreage in cotton is much larger than last year.

Goliad county, Texas.—Cotton is doing well; the caterpillar has made its appearance, but as yet has done no injury.

Dallas county, Texas.—Wheat rather above an average.

DeWitt county, Texas.—Prospect for corn and cotton very flattering.

Fayette county, Texas.—Pretty fair stand of cotton; the area planted is somewhat greater than last year, and the crop promises well. Corn late but if the weather continues favorable the crop will be very large.

Harris county, Texas.—Corn presents a better appearance than for several years past.

Washington county, Texas.—Corn will yield over an average crop. Cotton looks very promising. All crops are being well cultivated and look well.

Hunt county, Texas.—Cotton backward, with a bad stand.

Smith county, Texas.—Cotton backward, and looking badly. Corn looks well.

Monroe county, Ark.—Cotton injured by cold spring. Large plantations must replant or change to corn.

Phillips county, Ark.—Cotton small, with defective stand; worms have done considerable damage. Corn looks thrifty.

Arkansas county, Ark.—Corn promising; plenty planted to supply the county. Cotton fair, considering the season, and if the summer be dry a good crop will be made. Most of it has been worked over. Labor is very scarce, and, as most farmers have put in a large crop for their force, if the season should prove wet the crop will be poorly cultivated.

La Fayette county, Ark.—Nearly every one in the county has gone mad to put in cotton, and the acreage is double that of last year. If the season is not very good for corn there will not be enough breadstuff made to feed the people who are so eager to grow cotton. The cotton plants look badly, but a few warm days has started them to renewed growth.

Union county, Ark.—Cotton in many instances has died out and had to be replanted. Corn looks sickly and yellow.

Independence county, Ark.—About 25 per cent. more cotton planted; of this one-third rotted in the ground, and the cut-worm destroyed another third; the remainder is yellow and unhealthy. Wheat very promising. Corn stands the cool season well.

Washington county, Ark.—There never was a better prospect for wheat in northern Arkansas. Corn looks badly, owing to the cool, wet spring.

Calhoun county, Ark.—Crops looking badly, from the excessive rains.

Clark county, Ark.—Three-fifths of the land in cultivation is in cotton. The crop is backward, but the season has been favorable for working, and the prospect is good for a full crop.

Smith county, Tenn.—Wheat crop promising. The stand of corn is not good. The Tappahannock is proving itself adapted to this section.

Shelby county, Tenn.—Crops suffering from dry weather, especially cotton.

Marion county, Tenn.—This county never had so large a crop of wheat. I have traveled within 30 days from this point to Nashville, Knoxville, Augusta, Macon, Columbia, and Montgomery, and I have never seen the crop look more promising. Corn backward, but with a good stand.

Fayette county, Tenn.—The second planting of cotton is coming on finely, and will bring up the average to a full half stand.

Knox county, Tenn.—Wheat never looked much better here than now; no sign of rust or smut. Fields put in with the drill and fertilized with guano are very fine.

Sullivan county, Tenn.—The Hessian fly deposited its eggs in all early-sown wheat last fall. Many fields will not make the seed sown, while others are very good. The whole crop will average 40 per cent. above last year, with an increase of 25 per cent. in acreage.

Dyer county, Tenn.—Wheat unusually promising, with considerable increase in acreage. Large increase in cotton acreage—prospect good. Acreage of corn decreased one-third, with prospect unpromising.

Green county, Tenn.—Extra prospect for wheat; but within 10 days small green insects by millions have appeared on the stalk and in the heads. They turn brown as they advance in age. They have done no appreciable harm as yet. Viewed with a glass, they appear smooth and wingless, with black legs. Some rust has appeared lately. [The insect is most probably the grain-plant louse, or *aphis*, which sucks the sap and thus weakens the plant.]

Giles county, Tenn.—Wheat, oats, and rye were never more promising. I have a piece of Tappahannock wheat, the first I ever saw. This variety is the universal favorite.

Hickman county, Tenn.—Wheat taking the rust, but it has not affected the stalk yet. Cotton very backward; much replanted. Corn in good condition.

Montgomery county, Tenn.—Wheat in danger from rust. Insects numerous; almost impossible to get a stand of tobacco.

Monroe county, Tenn.—Good prospect for wheat.

Obion county, Tenn.—Broom corn looking well; increased acreage. Two broom factories in the vicinity of Union City have had an encouraging effect upon planters.

Rutherford county, Tenn.—Cotton backward and unpromising, but a few weeks may show a marked change for the better. The acreage is somewhat larger than last year.

Perry county, Tenn.—Peanuts have been planted to far greater extent than usual—perhaps three-fold. The crop will probably reach 150,000 bushels, which could now be sold to speculators at $1 per bushel.

Harrison county, W. Va.—Wheat prospect better than for 10 years past.

Putnam county, W. Va.—Wheat looking well, but in danger from rust. Corn backward. Unfavorable spring.

Brooke county, W. Va.—Corn late, but growing rapidly; generally a good stand, and increased acreage. Potatoes largely planted and doing well.

Wood county, W. Va.—Prospect for wheat and fruit is excellent.

Randolph county, W. Va.—Tappahannock wheat yielded 900 pounds from 60 pounds sowed, and ripened 10 days earlier than blue stem or Zimmerman.

Monroe county, W. Va.—Wheat 25 per cent. better than for years. Pastures good; clover on the increase and very fine. Winter rye, half a crop and half acreage.

Braxton county, W. Va.—Wheat very promising; so much more so than for some years past that the farmers are quite excited over it. Oats are not very promising.

Graves county, Ky.—Corn crop exceedingly backward. Wheat never looked better; one-fourth increase in acreage.

Jefferson county, Ky.—Corn small and sickly, but will recover, as the warm weather has set in.

Livingston county, Ky.—Spring cold and wet, and corn backward. Scarcity of tobacco plants, caused by insects eating the young plants.

Boone county, Ky.—The culture of sorghum is receiving much attention in this county.

Fayette county, Ky.—An increased acreage in hemp, but the prospect for a crop is gloomy, in consequence of the cold, wet spring.

Lincoln county, Ky.—The mast crop promises to be good.

Scott county, Ky.—Hemp has been sown extensively, but is suffering at this time, owing to the weather.

Harrison county, Ky.—The Tappahannock wheat looks splendid.

Hickman county, Ky.—Cotton doing badly. Wheat is suffering from rust; the acreage is larger than last year. Sorghum crop will be increased one-third this year.

Warren county, Ky.—Wheat extremely fine—some rust on the blades.

Henry county, Ky.—Poor stand of corn. The cut-worm, ant, and other insects have done much damage. The young tobacco plants have been much injured by the fly.

Russell county, Ky.—Wheat injured by hail, and the rust has appeared in some fields. The fly and bug have destroyed a large proportion of the tobacco plants. Corn backward; poor stand.

Hickory county, Mo.—The Hessian fly has done much injury in the young wheat. Corn backward. Potatoes never looked better.

Barton county, Mo.—Corn looks well; large breadth planted compared with last year.

Cass county, Mo.—Early sown wheat on old ground stood pretty well; late sown on old ground froze out. Those failing in fall wheat put in spring wheat.

Vernon county, Mo.—Extra crop of corn planted; looks well. Large crop of sorghum will be put in, with the view of graining.

Jefferson county, Mo.—The chinch-bug has appeared, and has already destroyed a number of pieces of corn, and damaged wheat somewhat. Salt has been used as a preventive, with gratifying success.

Moniteau county, Mo.—Wheat in the timber is extraordinary; in the prairie it was badly frozen. Too thin on the ground, but looks well. The stand of corn is decidedly bad.

Cole county, Mo.—Corn late; has made feeble growth.

Dent county, Mo.—Rust on wheat in a few places. From 1st to 10th of May numerous striped caterpillars appeared; one piece of woodland, 100 acres, completely stripped by them. No injury to the crops yet.

Pike county, Mo.—Very wet; half the corn unplanted. Wheat injured by hail storm.

Adair county, Mo.—One-half winter wheat and rye killed by freezing weather in March. Spring grain looks well.

Caldwell county, Mo.—Three-fold acreage in wheat, but it will make only half a crop, owing to winter killing, chinch-bug, and grub-worm. The crop will yield more in bushels than last year, however.

Cooper county, Mo.—Never a finer prospect for wheat.

Schuyler county, Mo.—Corn promising good crop.

Grundy county, Mo.—The chinch-bug and a large white grub-worm have appeared. The Tappahannock wheat sown last fall was a total failure. It was sown in October. Wheat crop generally injured in March by freezing and thawing. Unusual acreage of potatoes; prospect good.

Howard county, Mo.—Corn and oats reduced in acreage by the large area devoted to wheat. Corn very backward.

Mercer county, Mo.—Wheat in fine condition, promising best crop ever raised here. The same with rye, oats, and the grasses.

Mississippi county, Mo.—Wheat fine; 50 per cent. better than usual.

Phelps county, Mo.—Exceptional cases of injury by the Hessian fly.

Sullivan county, Mo.—Potato bugs have appeared.

Alexandria county, Ill.—Wheat looks poorly; the lower part of the head has nothing in it; caused by backward spring and wet weather.

Cook county, Ill.—Clover lifted by frost, and mostly killed out.

Livingston county, Ill.—Season backward; not more than half the corn planted yet.

Morgan county, Ill.—Corn not nearly all planted.

Champaign county, Ill.—If rains continue, not over two-thirds of a crop of corn will be put in.

Logan county, Ill.—Season wet and backward; corn not nearly all in yet.

Monroe county, Ill.—Corn very backward.

Sangamon county, Ill.—Not more than half the corn crop of central Illinois is yet planted. For such seasons our farmers want a good va-

riety of corn which will mature sufficiently early to be safe from frost in 90 days from planting.

Lee county, Ill.—Hay crop flattering.

Du Page county, Ill.—Corn planting behind, and rains have rotted some that has been put in. Potato bugs have made their appearance.

Stark county, Ill.—Wheat, oats, and grass very good. Corn backward.

Stephenson county, Ill.—Crops generally planted in good condition, though much delayed by wet weather.

Clinton county, Ill.—The chinch-bug is at work on the spring barley.

De Witt county, Ill.—Corn prospect very poor; about half planted. Early planting made poor stand. Potatoes look well.

Macon county, Ill.—Spring wheat, oats, and barley cut short by wet weather, which has also delayed corn planting.

Putnam county, Ill.—Heavy rains made replanting necessary in many corn-fields. Potato bugs have appeared in the early potatoes.

Clay county, Ill.—An extensive crop of flax sown, and a few acres of castor beans. Crops all looking well, with prospect of a bountiful harvest.

Ford county, Ill.—Broom corn is receiving some attention; one man expected to put in 1,200 acres, but the weather has been unfavorable thus far.

Franklin county, Ill.—Potatoes far better than usual. Corn promising.

Jackson county, Ill.—Sweet potatoes are being planted extensively.

Perry county, Ill.—The sack of Tappahannock wheat received from the Department last fall was sown on about 30 square rods. It is now headed, in bloom, and about five feet high—altogether the finest wheat in appea ance I have ever seen.

St. Clair county, Ill.—Prospect of a good harvest for all cereals.

Washington county, Ill.—Wheat has looked finely, standing thick and well headed, but the leaves are already covered with rust—none on the stalks. Should wet weather continue our crop will be a failure; otherwise we may have a large crop.

Kendall county, Ill.—Corn is in a precarious condition. It will require a good season henceforth to make a fair crop.

Randolph county, Ill.—The army-worm (*Leucania extrania*) has injured timothy meadows considerably, and the cut-worm has damaged the castor bean, which is largely cultivated in this county.

Lawrence county, Ill.—The army-worm has appeared in considerable numbers—noticed first in meadows, and then in wheat. The chinch-bug has also commenced its ravages.

Indianapolis, Ind.—Heavy rains have raised the streams throughout the State, doing great damage to all growing crops along the valleys, and ruining much of the wheat on all low grounds, and producing a still greater growth of straw, when the growth was already much heavier than was safe for a good crop. The probabilities are against a good crop.

Floyd county, Ind.—Wheat the best ever known.

Jennings county, Ind.—Wheat more promising than for many years.

Fountain county, Ind.—Wheat never looked better.

Boone county, Ind.—Heavy rains have done much damage to the wheat crop. Much of it down, and not likely to rise again.

Brow county, Ind.—Prospect never better for wheat. Should no disease or other injury arise, the increase will be 50 per cent. over last year.

St. Joseph county, Ind.—The Tappahannock wheat showed heads 24th of May, at least 10 days earlier than any other variety.

Wayne county, Ind.—Wheat never looked better, but there is a probability of too much straw.

Bartholomew county, Ind.—Heavy rains have caused some damage to wheat by overflow, but the crop will be large.

Hancock county, Ind.—Corn planting retarded by wet weather, and that planted washed up on sidling ground.

Miami county, Ind.—Wheat, rye, oats, barley, and meadows never looked better, but we fear they are too rank. Much corn land overflowed.

Scott county, Ind.—Wheat, oats, and grass splendid.

Tippecanoe county, Ind.—There has perhaps never been such a prospect for wheat in this county. Corn poor. Potatoes look well.

Parke county, Ind.—It is feared that the heavy rains have materially injured the wheat crop.

Vigo county, Ind.—Wheat growing too fast.

Whitely county, Ind.—Corn not half planted yet.

Cass county, Ind.—Not more than two-thirds of the corn crop planted. Excessive rains; and a cool dry June is the only thing that can save wheat.

Lagrange county, Ind.—Wheat less promising than earlier in the season—beginning to fall on rich ground. Continuance of wet weather will make too much straw.

Putnam county, Ind.—If nothing befalls wheat, the crop will be the largest ever known in this county.

Johnson county, Ind.—The wet weather, it is feared, will seriously injure wheat on undrained lands. Corn backward, and not all planted.

Newton county, Ind.—The culture of flax is becoming of considerable importance, from the fact that if a good crop is secured, the seed, at $1 75 per bushel, will pay for the land it is raised on.

Steuben county, Ind.—Winter cereals have never promised better than now.

Elkhart county, Ind.—The cultivation of flax for the seed only is growing in favor. It is profitable, particularly on clay soil. The crops in fine condition.

Wood county, Ohio.—Corn looks unusually bad—two-thirds of the acreage requiring replanting, owing to the cold, wet weather. Many fields of wheat badly down, the result of the recent high winds; probably not more than the usual crop.

Hardin county, Ohio.—Spring rather wet, which retarded the planting of corn, but it has been favorable for grass, and the small grains.

Huron county, Ohio.—Wheat never looked better than it does this year.

Logan county, Ohio.—The heavy rains have injured wheat. Much of it is so tender and full of sap that it falls before the wind and may not rise. Grass and oats promise large yield.

Morrow county, Ohio.—Corn planting greatly hindered by wet weather; half the crop unplanted, and much that is planted must be replanted. Much of the wheat is very forward for this section, and is falling.

Lorain county, Ohio.—Land very wet. Corn planted on low land must suffer.

Lucas county, Ohio.—Flax is receiving more attention, and promises to become a leading crop.

Medina county, Ohio.—Two-thirds to three-fourths of the corn is planted. Everything is growing rapidly, but farming operations are being delayed by the wet weather. Wire-worms are injuring oats, especially on sod ground.

Mercer county, Ohio.—Corn not more than one-third planted. Very wet. Potatoes rotting.

Portage county, Ohio.—Winter wheat looks better than for 10 years, with a large acreage. Rye also promising.

Seneca county, Ohio.—Prospect for wheat equal to if not better than any preceding crop for many years.

Union county, Ohio.—Wheat prospect never better. Not more than half the corn crop planted, owing to wet weather.

Monroe county, Ohio.—Wheat better than for 10 years. Oats short and light.

Marion county, Ohio.—In consequence of the incessant rains much corn must be replanted, and there is danger that wheat will run to straw.

La Crosse county, Wis.—Most of the hop yards are poled and are looking well. With a favorable season there will be as many hops raised this season as there were last year.

Richland county, Wis.—Hops half plowed up, and half of those left are poled with one pole at a hill. They look very well. Corn has not come up well in some neighborhoods.

Green county, Wis.—Southern Wisconsin never had a better show of small grains and grass at this season of the year.

Crawford county, Wis.—About half the acreage in hops last year has been plowed up. Crop looking well.

Ozaukee county, Wis.—Spring wheat sown late. The hay crop must be very large owing to constant rains.

Brown county, Wis.—Early sown grain very fine; late sown, backward.

Buffalo county, Wis.—Potato bug here in full force.

Columbia county, Wis.—About 40 per cent. of the hop yards have been plowed up this spring.

Fond du Lac county, Wis.—Hops injured by hail, many yards plowed up. Chinch-bugs somewhat plenty. Air filled with potato bugs. Corn very backward.

Jefferson county, Wis.—Corn being plowed late, with the prospect of decreased acreage.

La Fayette county, Wis.—One-third of the land sown to small seed is put in flax. It yields about 12 bushels per acre, generally worth two dollars per bushel. Culture about the same as wheat.

Waushara county, Wis.—About 25 per cent. less hops than last year; condition good.

Lapeer county, Mich.—Winter crops looking remarkably well.

Washtenaw county, Mich.—Oats look fine. Wheat and grass never looked more promising.

Montcalm county, Mich.—A great many hop yards are being plowed up. Last year's crop not disposed of.

Cass county, Mich.—The Colorado potato bug is likely to destroy much of this year's crop. Hops promise an increased product.

Livingston county, Mich.—Hops about one-third plowed up.

Van Buren county, Mich.—Wheat, oats, and grass never appeared better.

Berrien county, Mich.—Wheat late; not so promising as last spring.

Calhoun county, Mich.—Perhaps one-fifth of the hop yards plowed up. More attention being given to fruits for the Chicago markets.

Muskegon county, Mich.—All crops backward.

Meeker county, Minn.—Corn has a poor show, the acreage reduced 20 per cent. Wheat promising.

Fillmore county, Minn.—Almost all the hop yards have been plowed up.

Ramsey county, Minn.—Flax has been sown quite largely this spring, and the corn acreage has been increased, owing to the low price of wheat.

Butter and cheese are receiving more attention, and there is a disposition to make more pork and to diversify crops.

Carver county, Minn.—Abundant crops in prospect.

Goodhue county, Minn.—Winter wheat has rarely been cultivated in this county, but experiments tried last fall promise entire success.

Brown county, Minn.—Wheat on new land looks well, but on old land it is not so good as last season.

Nicollet county, Minn.—Corn looks yellow and sickly, owing to the late cold spring.

Stearns county, Minn.—Season backward, but crops are promising. There will be a reduction in the potato crop in consequence of the ravages of the bugs last year, but the corn acreage will be greater.

Washington county, Iowa.—More sorghum is being planted this spring than for three years past, and also a larger acreage in potatoes than ever before; more than 50 miles of Osage hedge was set out in the spring and is in fine condition.

Boone county, Iowa.—Excellent weather for small grains; too wet for corn, replanting being necessary in many cases. Wheat prospect never better.

Cedar county, Iowa.—Potato acreage increased 20 per cent., and crop promising.

Johnson county, Iowa.—Spring wet and crops backward, but not beyond recovery.

Jones county, Iowa.—Hop acreage considerable less than last year; a great many yards plowed up.

Muscatine county, Iowa.—Cereals and grasses uncommonly fine. Corn fields also unusually green, though the stand is rather defective.

Tama county, Iowa.—There is increased interest in the culture of Hungarian grass, and also of buckwheat.

Crawford county, Iowa.—Grasshoppers have committed serious depredations in gardens, field onions, &c.

Lucas county, Iowa.—Winter rye looking badly; other crops promising.

Des Moines county, Iowa.—Much corn yet to be planted and much to be replanted, owing to excessive rains.

Fayette county, Iowa.—Season backward for corn, but more than usual has been planted, and it is doing well.

Allamakee county, Iowa.—The potato bugs have again appeared in great numbers.

Audubon county, Iowa.—Plenty of grasshoppers; wheat injured; gardens pretty well used up.

Madison county, Iowa.—Weather unfavorable for corn.

Buchanan county, Iowa.—Much of the corn land replanted.

Hardin county, Iowa.—Wheat looks too heavy; danger of falling.

Wapello county, Iowa.—Prospect of not more than half a crop of wheat; injured by the cold and dry weather of March and April. A number of fields plowed up and seeded to corn.

Coffey county, Kan.—Much winter wheat frozen out. Promise, about three-fifths of a crop.

Marshall county, Kan.—Crops and pasturage look well.

Miami county, Kan.—Corn backward. A large portion of wheat land plowed up for corn—much wheat, clover, and timothy having been frozen out.

Atchison county, Kan.—Winter wheat much injured by frost, expecially that sown late broadcast; early sown looks well. Locusts eating the spring wheat.

Bourbon county, Kan.—Wheat sown from 20th August to 20th Septem-

ber is generally doing well; that sown after September 25th was nearly destroyed by alternate freezing and thawing.

Cherokee county, Kan.—Wheat badly winter-killed; 10 per cent. increase in acreage however.

Douglas county, Kan.—The chinch bug has commenced its ravages, and in places grasshoppers have hatched out in considerable numbers.

Doniphan county, Kan.—Small grains look well. Wet for corn, but large area planted.

Jackson county, Kan.—Crops promising. Wheat never looked better, though the grasshoppers have injured some fields. Some winter wheat was frozen out and the land put in corn. Wheat put in by drill did much better than that sown broadcast. Corn late—too wet.

Shawnee county, Kan.—Threefold acreage in winter wheat. Chinch-bugs and grasshoppers have injured the crop. Drilled wheat 30 per cent. better than broadcast sown; affected less by freezing.

Butler county, Kan.—Prospect never better for small grains.

Hall county, Neb.—The rough chaff winter wheat received from the Department in 1868 was partly killed by frost, but what remains is doing well, and I think it will be just the thing for this section.

Cass county, Neb.—Corn is not doing very well owing to the continuous rains. Grasshoppers numerous, but not doing as much damage as last season.

Cuming county, Neb.—The prospect for wheat and oats is very flattering. Too cool for corn; it looks badly.

Washington county, Neb.—A peck of wheat received from the Department last fall was sown, and came up well and looked well until Christmas, when it was covered with snow until spring. When the snow went off not a vestige of wheat could be found; from what cause none could tell. Winter wheat, rye, or barley do not succeed well here.

Dakota county, Neb.—Corn has come up quite irregularly. Many farmers will be compelled to replant.

Weld county, Col.—Grasshoppers have done considerable damage to crops in some localities and are likely to do considerable more. The prospect for corn and potatoes is fully up to the average, however.

Yankton county, Dak.—All crops look remarkably well for this season of the year. No grasshoppers have yet appeared, and farmers think they have left entirely.

Iron county, Utah.—Large numbers of grasshoppers, about half grown, have eaten a great many acres of wheat and are still eating, but most of it is growing again.

San Pete county, Utah.—An unusual breadth of small grains sown. No irrigation required, rain having fallen copiously, at regular intervals; hence there is one sea of verdure as far as the eye can reach. The fall grain proved almost an entire failure. Corn and sugar corn are receiving considerable attention.

Butte county, Cal.—Winter wheat and rye are in the best condition.

Los Angeles county, Cal.—Grain crops promising large yields.

Colusa county, Cal.—Wheat doing well.

San Joaquin county, Cal.—All grains superior to previous years.

Monterey county, Cal.—Great breadth of wheat and barley; large yield promised.

Sutter county, Cal.—Wheat and barley ready for harvest. Broom-corn is the staple on Butte slough, and the corn brush raised in that section commands the highest price in San Francisco. The seed is used for feed, being considered of one-half the value of other grains.

Santa Clara county, Cal.—The rust has made its appearance and

threatens much damage. It is chiefly confined to the foliage as yet. Many acres of wheat and barley have been cut for fodder. The crop will fall short of estimates of two months ago.

Sacramento, Cal.—The prospect never was so good before for a large crop in California, and appearances seem to indicate with certainty that the ensuing harvest yield will be greater by at least one-third than was ever before produced.

Colusa county, Cal.—Crops will be good in this county. No complaints of either rust or smut.

Solano county, Cal.—The grain yield will fall short of that of last season. Volunteer fields are being mowed for hay and many of the late sown fields will be hardly worth harvesting.

Fresno county, Cal.—Wheat acreage 150 per cent. greater than last year. Condition of the crop one-tenth below that of last year.

Lassen county, Cal.—Wheat in average condition, but the acreage is 10 per cent. less than last year.

FRUITS.

Belknap county, N. H.—A very large number of fruit trees, principally apple and pear, have been set out this spring.

Delaware county, N. Y.—Our prospect for fruit was never better. Apple trees now in full bloom. (June 1.)

Jefferson county, N. Y.—There never was a greater amount of bloom of plums, cherries, and every kind of berries. Every shrub and plant was covered with blossoms, and as they appear to have well set, there is good prospect of an abundant crop of small fruit.

Ulster county, N. Y.—Antwerps will give a fair crop, say two-thirds. Grapes show plenty of bloom. The same with currants, cherries, and all small fruits.

Niagara county, N. Y.—Berry-growing is becoming quite popular in this section, and many hundreds of acres, in the aggregate, of the various kinds will be picked this year, giving employment to many women and girls. The black raspberries are mostly the Doolittle, and the red the Franconia. Of strawberries, the Wilson's Albany is by far the most profitable. The nursery business is being largely extended.

Plymouth county, Mass.—The blossom buds of most varieties of apples have not opened this spring, but have thrown out side leaf buds, and then the center of the bud containing the blossom has dropped off. I do not understand why apple buds were killed and peach buds preserved better than for some years past.

Hudson county, N. J.—Apples, peaches, and pears promise well. The season has been very favorable for them, and if we can keep the insects away we shall have a large crop. We have more show for cherries than for many years, and the insects that injure them have not made their appearance yet. We are protecting the birds, and they are great helps in keeping the insects in check.

Passaic county, N. J.—From present appearances there will be a good crop of grapes and black and red currants.

Essex county, N. J.—The bloom of fruit trees generally was very profuse, but the subsequent cold, dry, windy weather chilled the fruit as it was forming and caused much to fall off.

Ocean county, N. J.—The increase in acreage in cranberries is about 15 per cent., but it is too early to report the prospect of crop.

Burlington county, N. J.—The prospect for large crops of cranberries is very good, also for strawberries, blackberries, and raspberries.

Cumberland county, N. J.—The prospect for fruit of all kinds is unusually fine. The strawberry crop promises to be very heavy, and the bloom on the blackberry vines is remarkable.

Chester county, Pa.—The peach crop promises better than for many years; much less curl of leaf. The season is very favorable for fruit.

Franklin county, Pa.—Fruit never promised better, though caterpillars are very numerous and destructive.

Montgomery county, Pa.—Peach trees loaded with fruit; apples and all small fruits abundant.

De Kalb county, Mo.—Peaches almost entirely killed by frost; apples, pears, and cherries promise large crop.

Benton county, Mo.—Peach crop almost a total failure.

St. Francis county, Mo.—From 7,000 to 8,000 grape vines set out last year, mostly Concord, and they look remarkably well.

Howard county, Mo.—Fine prospect for fruit, excepting peaches.

Dallas county, Mo.—Peaches a failure.

Bureau county, Ill.—Fruit has set well for a very large crop.

Union county, Ill.—About 25,000 bushels of strawberries have been shipped from this county this spring.

Stephenson county, Ill.—Great amount of bloom this spring on fruit trees; condition good.

Macon county, Ill.—Bloom of peaches and pears mostly knocked off by hailstones.

Clay county, Ill.—Fruits bid fair for a large crop.

Ford county, Ill.—Peaches mostly winter-killed.

Floyd county, Ind.—Fruit trees literally loaded.

Adams county, Pa.—The prospect for fruit is most encouraging; never saw it better.

Washington county, Pa.—Fruit trees one mass of bloom, and the crop promising.

Alleghany county, Pa.—Never had so fine a prospect for an extraordinary crop as we have this season.

Harford county, Md.—The peach crop may be considered a failure in this county. The trees have been dying for the last 15 years, and those who have orchards say they bloom well, but bear little or no fruit, and soon die.

Anne Arundel county, Md.—Strawberries are fine, with double the usual average. Blackberries (Lawton) promise an abundant yield. Tomatoes are being cultivated extensively this year, average twice that of last year.

Queen Anne county, Md.—The number of peach trees in bearing this year will be five or six times greater than in any previous year. Pears, both standard and dwarf, are being planted largely, and the production rapidly increasing. Strawberries are an important crop on river lands, 5,000 to 6,000 quarts being sent to Baltimore daily.

Northampton county, Va.—Peaches damaged by late frost. Quinces all destroyed. Apples, pears, and berries uninjured.

Rockbridge county, Va.—Grapes are looking well. I have 20 acres planted—about 80 acres in the county—most of them young, not yet in bearing. Our location seems well suited to the vine. I shall make some wine this year from three-year old vines. Varieties planted: Catawbas, Concord, Delaware, and Isabella.

Beaufort county, N. C.—Peaches and pears nearly all killed by late frosts.

Currituck county, N. C.—Peach and pear crop materially injured by frost.

Chowan county, N. C.—Fruit crop cut off by frost.

Franklin county, N. C.—Fruits—apples, peaches, and pears—almost entirely destroyed by frost.

Iredell county, N. C.—Peaches all killed by frost.

Orange county, N. C.—Fruit destroyed by frost.

Tyrrell county, N. C.—Cranberries are not cultivated here, but grow wild in the swamps and bog lands. There are hundreds of acres in the county well set with the plants, and the prospect is good for a fair yield.

Chatham county, N. C.—The crop of wild or old field strawberries has been very large, and the fruit fine and of excellent flavor. With care this crop could be made a source of profit. They sold this season at 5 to 10 cents per quart.

Davidson county, N. C.—Young fruit much injured by frost. This is a great region for blackberries, and many thousands of dollars worth are annually exported from this section of the State. The amount of bloom is greater this year than ever before.

Gates county, N. C.—The May frosts destroyed nearly all the fruit.

Yadkin county, N. C.—Peaches and pears nearly all killed by frost.

Heard county, Ga.—Peaches seriously damaged by frost; many orchards entirely killed.

Troup county, Ga.—The peach crop reduced at least one-half by the late and continued frosts.

Jackson county, Ga.—The peach crop will be almost a total failure—killed by frost.

Butts county, Ga.—Peaches much injured by frost—all killed in some places. Good crop of cherries.

Leroy county, Fla.—The frosts of March killed oranges and other fruits. Some of the trees were killed to the ground. Some are putting out again, but there will be very little fruit.

Duval county, Fla.—The oranges are nearly all black with insects. They are also destroying grapes and plums. They destroy the trees as well as the fruit.

Leon county, Fla.—Our peaches bloomed full, but while in bloom they had a severe frost on them. This, with the subsequent cold weather, has caused nearly all the young fruit to drop.

Coosa county, Ala.—Late frosts have injured fruits very much, in some orchards being entirely destroyed.

Morgan county, Ala.—The peach and pear crops nearly a total failure.

Calhoun county, Ala.—All the peaches and nearly all the apples and pears killed by frost.

De Kalb county, Ala.—Peaches and pears killed in April by frost.

Jefferson county, Miss.—Peaches and apples will be abundant; berries plentiful.

Harris county, Texas.—Peaches nearly all destroyed by frost; from an orchard of 1,800 trees not more than 10 bushels will be gathered. From 640 plum trees 11 bushels have been taken.

Montgomery county, Ark.—Peaches have nearly all been killed by frost.

Washington county, Tenn.—An unusual interest has sprung up in fruit culture, especially apples and grapes, and a great number of trees and vin . have been set out this spring.

Haywood county, Tenn.—Many are raising strawberries with unusual success. Grapes never fail in the hilly regions of the county, and this portion seems peculiarly adapted to the culture of peaches.

Nicholas county, W. Va.—The prospect for fruit of all kinds has seldom been equaled in this county.

Grant county, W. Va.—Cranberries grow in our mountain regions to a considerable extent, and are quite profitable to gather.

Randolph county, W. Va.—Cranberries are not cultivated, but are found in several swamps; they yielded an average crop last year.

Morgan county, W. Va.—About 5,000 grape-vines have been set out during the past year, and are doing well.

Monroe county, W. Va.—The prospect for fruit surpasses any season for a number of years.

Spencer county, Ky.—There is promise of an abundant crop of fruit.

McDonald county, Mo.—Peach crop an entire failure.

Macon county, Mo.—Peaches a total failure. Small fruits promising.

Jefferson county, Mo.—This is the banner county for fruit. Prospect good, especially for apples, pears, and grapes.

St. Louis county, Mo.—Grapes promise an immense yield.

Fountain county, Ind.—Peaches almost an entire failure; apples fair; pears very fine.

Wayne county, Ind.—Never had a better prospect for fruit of all kinds.

Benton county, Ind.—Prospect for small fruits never better.

Whitley county, Ind.—Fine prospect for apples, pears, and grapes.

Grant county, Ind.—Few peaches; apples promising.

Newton county, Ind.—Peaches killed by frost.

Owen county, Ind.—All small fruits in abundance.

Washington county, Ohio.—Fruit of all kinds will be abundant, except on apple trees which bore last year.

Seneca county, Ohio.—Peaches promise the largest crop ever raised in the county. Grapes and cherries look remarkably well.

Union county, Ohio.—All kinds of fruit will do well if present promise shall be realized.

Williams county, Ohio.—Apples appear safe, with as good a crop as was ever raised. Peaches and pears the same. Small fruits fine beyond parallel.

Meigs county, Ohio.—Fruits very abundant and promising.

Waushara county, Wis.—Fully 10 per cent. increase in cranberry acreage in this county; condition 20 per cent better than last year.

Washtenaw county, Mich.—All fruits promise abundant yield.

Cass county, Mich.—All kinds of fruit promise well.

Van Buren county, Mich.—Grapes appear to be coming on well.

Berrien county, Mich.—Apples, peaches, and pears promise an overwhelming crop.

Decatur county, Iowa.—Apple trees mostly small but full of fruit; the same with pears; many trees the first year in bearing.

Boone county, Iowa.—Fruit prospect never better.

Johnson county, Iowa.—All kinds of fruit trees are loaded.

Louisa county, Iowa.—Small fruits in abundance.

Lee county, Iowa.—Fruit promising abundant yields.

Story county, Iowa.—An increase of 20 per cent. in grape vines planted and 25 per cent. in grape bloom.

Franklin county, Kan.—Peach trees in bad condition; leaves shriveled and falling off.

Jefferson county, Kan.—All peach buds killed in December except on high land.

Morris county, Kan.—Grapes in splendid condition.

Doniphan county, Kan.—Peaches generally killed.

Linn county, Kan.—Fine prospect for small fruit.

Salt Lake county, Utah.—The apple trees have suffered from the effects of the grasshopper raids of the past two or three years. The peach trees were not so seriously injured, and seem to recuperate faster.

Walla-Walla county, Washington Ter.—I have never seen peaches and

plums succeed so finely as here. They are perfectly healthy and free from the curculio. Plum trees four years from the graft have borne 400 pounds of fruit.

San Pete county, Utah.—An immense number of fruit trees have been been set out this season, especially of the apple.

EXTRACTS FROM CORRESPONDENCE.

THIN SEEDING WHEAT.

Rock county, Wis.—Having satisfied myself, from the experiment of last year on 10 acres of wheat, of the feasibility and advantage of light seeding in connection with the cultivation of small grain, I have been encouraged to adopt it as a permanent system. The wheat, oats, and barley received from the Department I put in with a drill 14 inches apart, at the rate of one-half bushel of the former and one bushel of the latter, on the 7th of April, all of which now (May 29th) nearly covers the ground. Land in a little better than middling condition. I have also sown in the same manner 17 acres of wheat, Canada Club and Rio Grande, and 47 acres of Surprise oats; of the latter I sowed 33 quarts per acre. These oats weighed 45 pounds per bushel. I have cultivated all once, and shall cultivate twice more if possible; can cultivate from 15 to 18 acres per day with a 12-toothed drill, costing one day's work with team to cultivate five to six acres three times. This work may be got out of the way in season not to interfere with the corn. Believing this to be a matter of importance, I have been somewhat explicit to encourage others who may be engaged in similar experiments to report progress, that our experience may be a mutual help. It is patent to every one that our *slack-twisted* way of raising small grain in America needs revolutionizing.

PLOWING WHEAT UNDER.

Kanawha county, W. Va.—We have an evidence in our neighborhood of the advantage of plowing wheat in, or under. One of my neighbors sowed wheat last fall, part of which he sowed first and then took the turn-plow and turned the seed under to the depth of about five inches, and for part he first broke the ground, and then sowed and harrowed it in. That which was plowed under is far superior to that which was harrowed; it is from six to nine inches taller and of a dark green color, while the other is pale and shorter. The land harrowed in, if any difference, should have brought the better wheat.

OREGON SPRING WHEAT.

Multnomah county, Oregon.—With this I mail specimens of Oregon spring wheat. No. 1, is known as Oregon white spring wheat, and is celebrated for superior white, delicate flour, equal to the best of white winter. It was sown April 9, 1868, and harvested the next August. Soil, yellow clay and sandy loam; no manure; depth of plowing about eight inches, two bushels of seed per acre; yield 35 bushels per acre; seed sown broadcast after plowing and harrowed in; no extra labor in cultivating. No. 2 was sown in March, 1868, and harvested in August. Soil and system of cultivation about the same as No. 1. Yield 45½ bushels per

acre. I have lived in Oregon about ten years and have never known a failure of any crop when properly cared for. Have never seen rust, weevil, sun-blight, or chinch-bug in wheat in this State, and have helped to harvest whole fields that yielded 60 bushels to the acre at 64 pounds to the bushel.

On the 14th day of February bees were busy at work, returning to the hives laden with pollen. Flowers have been in blossom in every month during the year. If the season proves favorable there will be at least 33 per cent. more grain raised in Oregon in 1869 than in any previous season in the last ten years.

DIVERSITY OF CROPS—FERTILIZERS, &c.

Morgan county, Georgia.—Since the emancipation of the slaves there seems to be a growing tendency on the part of planters generally to cultivate less land in hoed crops and make a more generous application of fertilizers. This system is developing gradually the grain and grass resources of the country, and is drifting towards a universal system of mixed husbandry and small farming operations. The day is not far distant when sheep-raising will become throughout the south much more profitable than the culture of cotton; the low price of land, together with our mild, genial climate, reducing materially the expense of keeping and wintering sheep. This is a branch of industry which the stock-raisers of the country would do well to think upon.

Perquimans county, N. C.—The general depression in monetary affairs, and the large amount of farming lands being exposed at public sale, together with the exceedingly unfavorable condition of the past two crop years, as well as the yet unsystematized state of labor, have to a great degree prevented that march of improvement in agriculture which under a different state of affairs would in all probability be reported. More attention is given than formerly to varying the crops, and not so great a disposition to invest all in one, making it a specialty. Fruits and truck are attracting more attention, and will doubtless prove a success and highly remunerating to those engaged in their cultivation. Our people are becoming alive to the importance of converting more of the grain products of the farm into stock, and thereby saving more of the phosphates and other valuable elements for the manure heap.

Fayette county, Texas.—We are introducing the California clover from the Pacific coast, which promises to be quite an acquisition to the farming interests of our county. It is sown in October, grows through the winter, seeds in May, and is ready to cut in June. It has an enormous quantity of seed, and makes a good pasture, even after the seed ripens. All kinds of stock are fond of it either green or cured, and it is said by gentlemen who have experimented with it to be more profitable for pasture than any other grass. It resembles the red clover somewhat, has a yellow bloom, &c.

The great need of this part of the country is a greater diversity in cropping, and more laborers. We are, however, improving in both particulars. The Ramie is being experimented with, and grows well. I have a few hills of the second year's growth, which is very luxuriant. If the fibre can be prepared readily for market and will pay remunerating prices, the plant will be an acquisition to the south. The castor bean also promises to be a remunerating crop.

The freedmen are laboring better this year than ever before since they were freed, and altogether our agricultural prospects are brightening.

Spalding county, Ga.—The cotton season is certainly 10 days late, retarded by the late spring. It is being chopped out and brought to a stand; those who have completed this work complain that the stand is not a good one. Large quantities of fertilizers have been used; in this section the sales have exceeded by 400 per cent. those of any former year. More attention than usual has been given to the preparation of land by deep plowing and the use of improved agricultural implements. Both white and colored are earnestly at work, in the effort to make a large crop. The area planted will exceed that of last year by about 25 per cent. With a favorable season the yield per acre will be largely in excess of former years, by reason of better cultivation.

Newton county, Ga.—The use of commercial fertilizers has assumed an important feature in the agricultural interests of this county. The amount used is 750 per cent. increase over that used last year. If they prove to be genuine and the application to the cotton crop this year proves to be profitable, they will be applied by every farmer next year to his whole crop. Fertilizers have proved profitable applied to wheat and cotton; this season they are applied to a very limited extent to corn, principally to ascertain if they will be profitable or not.

Morgan county, W. Va.—Since the war the agricultural labor of this county has been diverted from its legitimate fields, and devoted to the destruction of the forest, cutting railroad timber, cooper's stuff, lumber, and bark for the tanneries, and to such an extent has this been carried that during the past and present years a considerable quantity of meat, flour, corn, and even potatoes have been imported into the county for food for men and animals. This evil will be partially avoided this year by increased acreage under cultivation and the promise of bountiful crops of fruits, roots, and cereals. The improved condition of the farming interest is mainly attributed to the use of phosphates and other artificial manures, which act kindly and directly on our soil.

CLOVER IN NORTH CAROLINA.

Randolph county, N. C.—About two years ago the experiment of clover growing was commenced in this county. Many of our people pronounced it a humbug, a useless waste of money and time; but now there is ocular demonstration of a grand success with it. A gentleman from the State of New York was here to-day looking out for himself a farm; and on examining one of my clover lots was much pleased at the prospect, and said that he believed it would yet prove a renovator of the worn-out lands of the south.

TRUCKING IN NORTH CAROLINA.

Duplin county, N. C.—Garden peas for northern markets, about 50 acres in the county. First peas shipped April 29; price $8 per barrel; expenses of picking, freight, &c., about $2 25 per barrel. Price rapidly declined to $2 50 to per barrel. Most parties engaged lost from $25 to $75 per acre.

PEANUT CULTURE.

Amelia county, Va.—The low price of tobacco is driving thousands from the culture of it. By experiment with the peanut last year, upon a small scale, it was found to do well here and proved a highly paying crop upon certain soils, with a tolerably favorable season. Lime, as vended by the dealers under the name of "agricultural lime," appears

to be its special fertilizer; poor land in some cases being found to yield under this application in the drills 60 bushels to the acre. Tobacco will be planted in smaller quantity, and much attention turned to the peanut.

Surry county, Va.—Peanuts (*Arachis hypogea*) are being largely planted, in some case to the entire exclusion of corn. In consequence of planting too early many will have to replant, the first planting having rotted in the ground. This is resulting in much discouragement to planters, and it is hoped will finally lead to an abandonment of this crop, as its cultivation is no doubt one of the causes of the scarcity and high price of bread. Still, after meeting all the drawbacks, it is found to pay well at present rates; and its cultivation will not be abandoned as long as planters realize $1 per bushel.

CULTURE OF ROOTS.

Chautauqua county, N. Y.—Farmers are sowing carrots this year, in order to save hay next winter and to keep in better condition. They can be grown at a cost of 18 cents per bushel. Large quantities of corn are being sown for fodder this year. From four to ten tons (cured dry) can be raised on an acre.

Westchester county, N. Y.—There is an increased quantity of roots raised in Westchester county now, owing to the failure of oats for some seasons back, and the sending of milk to New York. There are a number of farmers sowing mangold-wurzels and carrots; turnips are also raised to a great extent, as they are more productive than oats.

EARLY ROSE POTATO.

De Witt county, Texas.—I bought one pound Early Rose potato from R. Buist, jr., Philadelphia, sent per mail, at one dollar per pound. Planted March 6. Weather being wet, I feared they would rot, and have had them grabbled out, leaving the tops still growing and promising a second yield. The product weighed 70 pounds; quality, superior.

POTATOES IN NORTH CAROLINA.

Haywood county, N. C.—The potato (*Solanum tuberosum,*) as a crop for home consumption, formerly promised well; but of late years it has been attacked by a small worm which has proved very injurious, causing a premature decay of the vines, soon after which the tubers would begin to rot, often leaving at digging time not more than half a crop.

OX-HEART CHERRY IN MISSISSIPPI.

Yalabusha county, Miss.—It has been generally stated by agricultural papers, and generally believed, that the May cherry, or Ox-Heart, would not succeed in this State; in consequence of which I have not attempted to grow them, except by way of experiment. One tree was planted nine or ten years ago, which has borne well and matured the fruit for the three past years. It only wants an elevated situation and a deep mellow soil in which to thrive here as well as in eastern Virginia.

FRUIT IN UTAH.

Duncan's Retreat, Utah.—Peach trees are out in full bloom, and promise a very heavy yield. Apricots are set, not promising as heavy as formerly. Plums just beginning to bloom, and show very heavy.

Apples will be in bloom in about ten days, and promise well. Grapes were not winter-killed the past winter. Grape roots and cuttings have been put out this spring in considerable numbers, as it has been proved that the grape is the best paying crop that can be raised in this section. Almonds appear very strong and thrifty. I was in one small orchard yesterday, comprising about 50 trees, seven years old, the best and most heavily loaded that I have ever seen anywhere.

SILK CULTURE IN CALIFORNIA.

San José, Cal.—L. Prevost, the pioneer silk-culturist of the Pacific coast, writes as follows in a recent letter to the Commissioner:

"The success of all those who have engaged in silk culture in different parts of California is a proof that the whole State is adapted to that great industry; but the extraordinary success of three persons in Los Angeles county surpasses my most sanguine expectations and all I have said about that culture. Finding the report so extraordinary, I went there to see, and found everything as stated. Believing that this locality would be the silk center of the Pacific coast, I moved my mulberry trees down there, and made two large plantations. I brought back with me mulberry shoots of one year's growth 14 feet long, to show the capacity of the soil. There are millions of acres of this rich mulberry soil, giving ample room for all wishing to engage in the culture. The climate is very healthy, and the finest I have seen. Mr. Garey planted, in February of last year, 10,000 cuttings, in nursery style, on one acre of land, and began to feed from these cuttings in May following. During the season he fed 120,000 worms, which gave 120,000 good cocoons—as here every worm makes its cocoon. After the feeding and raising of his 120,000 cocoons, his cuttings were in the fall five to twelve feet high. Where is the country that can beat that? There is nothing on record in any silk country approaching such results. Many will not believe it, but if they will come here they will find out that it is so.

"As my object was to be useful to my country, you have no idea how how happy I now feel to see my productions, and, in fact, all I have said in favor of that rich industry, so far surpassed by the reality. I have hope now of seeing the United States *exporters* instead of being importers of silk. The success of the few men in southern California has led others to the establishment of a great many plantations there, and many persons are preparing for the next season. It is my opinion that next year all those who will be deceived by that big humbug of *white* pine will turn their attention to this direction, as being the surest and safest employment, as all will have the same chance, and it will last for them and their children, and instead of ruining their health, will improve it."

GRAPES IN TEXAS.

High Hill, Fayette county, Texas.—At the January meeting of the Agricultural Society of this place, Mr. G. Fiedler reported that he planted 300 grape cuttings in ditches, plowed out and shoveled five feet wide and two feet deep, then filled up with different sorts of manure, including 30 head of dead cattle which he happened to have at hand, corn stalks, &c., at the bottom, with earth at the top. The cuttings grew the first year (1868) to the length of 10 to 12 feet, and many of them to the thickness of half an inch. A most remarkable feature was that several vines grew blossoms in August and formed regular grapes, which, however, could not more than half ripen before winter set in. These cuttings

were planted one by eight feet, the vines being led along a frame made of cedar posts and wire. At the March meeting, Mr. Fiedler stated that his vines were growing magnificently, and on the 28th were loaded with blossoms. The vines were trimmed in December and were fastened to the frame.

A large quantity of comparatively good quality mustang wine was made in this neighborhood last year, and a very good product might be obtained with more thorough knowledge of the treatment and better arrangements. Hundreds of barrels of grapes were left ungathered.

GRAPES IN TENNESSEE.

Montgomery county, Tenn.—I am much interested in propagating a native grape found close to me. It is the most delicious grape I ever ate. There is a large vine on a large oak five miles from me that has been bearing 40 years without fail, and has been a noted vine during all of that time. I have two young vines from it, which will fruit next year. All I *now* know of it is its fine-flavored fruit and its certainty in bearing. If it should meet expectations it will be an invaluable acquisition.

PEPPERMINT CULTURE.

Wayne county, N. Y.—Peppermint is the rage this season. Every other crop is neglected for "*mint*" with a very large majority of farmers in this town. There is at least four times the usual quantity planted this year, and the crop promises well. Last year the yield of oil was extraordinary, the yield being generally 40 pounds per acre, sold at from $4 50 to $5 per pound. It is estimated that there are over 1,000 acres of mint planted in this county.

THE MILK BUSINESS IN MASSACHUSETTS.

Berkshire county, Mass.—There are more cows kept in this county than in years past, the milk business being better now than sheep and wool ever were. Sending milk to market is a thriving business—much better than making it into butter or cheese.

LARGE CALVES IN VERMONT.

Orleans county, Vt.—Large calves seem to be made a specialty in this town just at present. Amasa Scott sold one to the butcher a few days since, 15 months old, whose live weight was 824 pounds, dressed weight 543 pounds, for which he was paid $59 92. He has another, 12½ months old, which weighs exactly the same; and there are as many as 10 others in town that will average quite as large; one raised by my son, E. L. Hastings, 15 months old, that will weigh more than 1,100 pounds; and there are more than 20 this spring's calves that are quite as large of their age as the yearlings described above. These calves and yearlings are mostly grade Durhams.

TIMBER AND HEDGE PLANTING.

McLeod county, Minn.—An increased interest is being taken in planting trees on our prairies. The value of a prairie farm remote from timber can be increased 50 per cent. in five years by a small expenditure in planting and taking care of trees.

Cherokee county, Iowa.—There is much interest taken in planting timber

this spring. The white maple and cottonwood seem to be the best and fastest growers. Seed of maple can be gathered in June by the bushel, and cottonwood grows from cuttings.

Story county, Iowa.—For fencing or hedging we are planting the English willow nine inches apart, double rowed, lattice fashion. It is worth more to Iowa than a railroad. The cuttings should be four and a half feet long, sharpened at the lower end, and driven into the ground 12 inches. The longer you can get the cuttings the better.

THE COLD WINTER IN FLORIDA.

St. Augustine, Fla.—The destructive effects of the terrible freeze of Christmas eve and morn of 1868, in Florida, are worthy of careful note and record in as many fruit locations, and as widely as possible, for the benefit of future fruit culturists in the south. It differed from the severe freeze of February, 1835, when the mercury sunk to 7 degrees above zero, and all kinds of fruit trees were killed to the ground, yet that cold was more local and less general than the late freeze.

In 1835 the severity of the freeze did not extend below 27 degrees north latitude, while the late cold extended as far south as Key West, in 24 degrees north latitude, where a heavy black frost was experienced, and it is said that ice formed on the north side of the island of Cuba.

The freeze of February, 1835, occurring later in the season, when the sap had begun to ascend and the young growth and blossoms had begun to make their appearance in the orange and other like kinds of fruits, the trees in this forward condition were more susceptible to injury than at Christmas, 1868, when loaded with the ripe fruit of the previous season's growth; hence with the orange and a few others of that family of trees the crop of fruit which was frozen solid upon the trees was the most serious loss. But among that tribe of fruits we have to report the citron, heretofore believed to be hardy, together with the lime, the Sicily lemon, the rough or sweet-skinned lemon, and also the guava, the custard apple, the banana, and the pine-apple, besides many other shrubs, plants, and flowers, have been killed to the ground by the freeze of Christmas last, although the mercury in the thermometer did not sink below 20 degrees above zero at St. Augustine. The loss of oranges and lemons that were unpicked and frozen upon the trees was very large, probably near 10,000,000. Added to this must be a large proportion of the recently budded trees, that had not attained a firm establishment in their new situations to enable them to resist so severe an attack of the cold, and probably three-fourths of all the buds set last year, and many of the newly set trees, were killed.

Among the fruits that withstood the severe cold may be reckoned all the varieties of the orange, the Valencia lemon, (an excellent variety,) the sweet lime, and the shaddock. All these, on thrifty and well-established trees, have proved themselves hardy, only shedding their leaves, which are now coming out again luxuriantly, and both foliage and blossoms give promise of a good crop of fruit the coming season.

LABOR-SAVING IMPLEMENTS IN MISSISSIPPI.

Holmes county, Miss.—We have been trying to introduce labor-saving implements by using them ourselves, and thus saving much labor. We planted our crop, both corn and cotton, with the improved King cotton planter, and though our corn was drowned out in April, we planted all over in such an incredibly short time that we could scarcely realize it. We planted in two days double the amount in cotton that was

planted by three hands in three days last year, and the stand is beautiful and regular. Our corn we are cultivating with a patent double-shovel plow. We have a horse hoe and a cultivator that we intend using as necessity demands. My brother, myself, and a lad 16 years old are cultivating 15 acres in cotton and 15 in corn, and are not behind our neighbors—in fact, in advance of some of them. Besides this, we have a truck patch of vegetables, &c.

MINING IN ARKANSAS.

Benton county, Ark.—Valuable mineral ores have been recently discovered in various parts of the county in great abundance, supposed to be principally silver. This mineral, be it what it may, is inexhaustible. The people are gathering here and organizing companies, and are laying off the mineral regions in districts and locating their claims, and have gone to work.

SHEEP AND HOGS IN OHIO.

Stark county, Ohio.—The following were the official returns of the assessors of sheep and hogs in this county for the years 1868 and 1869:

	1868.	1869.
Sheep	159,781	112,516
Hogs	29,118	23,557

In Tuscarawas county, south of us, the rate of diminution is about the same. In Wayne county, west of us, the diminution is greater.

FARM STOCK IN OREGON.

Marion county, Oregon.—The increase of farm stock has been fully an average the past season. Horses might be marked 10, and prices range from $50 for a good Indian or Mexican horse, to $300 for a first-class draught-horse which will weigh 1,400 to 1,600 pounds; the latter being eagerly sought after for California market, as are also first-class driving horses, which range from $150 to $300 each. A fair span of medium work-horses for farm labor can be had for $250.

Cows sell at $25 to $50 each, according as they are wanted for dairy purposes in western Oregon, or for stock-raising east of the Cascade mountains. Two-year-olds sell at $14 to $18, and yearlings at $8 to $12 per head. Sheep sell at $1 to $1 50 per head, after shearing. Wool (unwashed) is 20 to 21 cents per pound. Hogs (store) sell at 2½ to 3 cents live weight. These prices apply to western Oregon. Sheep and cattle are rated higher east of the Cascades, whither they are driven in large numbers every spring for stocking the immense ranges in that region. There are also large droves purchased for Idaho and Washington Territories, and for California also, in which State the ranges which were depopulated of stock during the drought of 1864 are now being restocked. Indeed, stock-raising in that State seems to feel the same impetus which is discernible in every branch of agriculture all along the Pacific slope.

BLIND STAGGERS.

Winston county, Miss.—I see from your monthly report for March and April that many horses have died of blind staggers. I have, during my life, lost several horses from the same disease, and I am fully satisfied it was by my own fault. When I first moved to this county, in

1836 or 1837, I purchased a lot of corn raised on newly-cleared land; it was late planted, small ears, very light corn, worth but little, and badly worm-eaten, with much worm-dust in it. I fed it to my horses, and in a short time one or two were taken with the staggers. I then had a trusty old negro man to shuck the corn, and free it from all worm-dust by breaking off some of the small end and scraping out all the dust in the rows with a knife. I then continued to feed with the corn, and gave my horses nearly twice the quantity in bulk that I usually gave of good corn, and my horses did well, having no more staggers. I have several times neglected to see to this, and my horses were affected with staggers, but I have never had a horse affected with staggers except when he had eaten corn with worm-dust in it. I have never fed with corn having much worm-dust in it without my horses having staggers. New ground corn is said to give horses blind staggers. New ground corn in all newly settled countries is generally planted late, and all late-planted corn is more liable to have worm-dust in it. I have observed that my horses always do well on new ground corn if freed from worm-dust and enough is given them, and I have no fears of the staggers if my corn is freed from worm-dust; but I believe a horse will be almost sure to have staggers if fed on worm-eaten corn with the dust in it. I have heard of horses having staggers from grazing on grass where the army-worm had been, and have been told that the dust, wet with saliva and bound to the skin, will produce a blister. I do not know that this is true, but believe that nearly all cases of blind staggers are produced by the worm-dust in corn, and that it would be scarce if horses were never fed with it. The corn should always be freed of the worm-dust before taken to the stables, and none suffered to fall in the trough in which the horse is fed, and the cobs should be thrown away and the trough kept clean of all dust. I think blind staggers and sleepy staggers are produced by the same cause.

DISEASES AMONG STOCK.

Harrison county, Iowa.—Very little disease prevails among cattle here, although quite a number died last fall soon after being turned into the stalk-fields. Many attributed their death to eating smutty corn, but the symptoms of all I saw were in many respects different from those which I saw that died from eating the poisonous smut. A little care will prevent much loss. Before cattle are turned into the fodder-fields they should be allowed to drink well, and then for three or four days they should not remain in more than three hours each day. They should have hay or straw to nibble on during all the time they may be so pastured, and also all the salt they want, fresh water being kept within their reach at all times. I have practiced this method of late years, and have never, since adopting it, lost a hoof from that supposed cause.

Marion county, Oregon.—Dr. Morgan, of Aumsville, in this county, has lost about 30 head of young cattle by a disease entirely new in that locality. Upon opening the cattle after death, the arteries of the lungs were found filled with worms from 1½ to 2 inches in length, and as thick as a darning-needle, sharp at both ends, of a dull color, and semitransparent.

Hillsborough county, N. H.—The weather has been cold and the season backward for planting. Cows have dropped their calves prematurely, to an extent seldom if ever known here before.

Marshall county, Ala.—Since my last report the hog cholera has prevailed extensively in this county—loss perhaps 25 per cent. A great many have lost almost their entire stock. The hogs die in from

two to four days. No remedy has been found. To separate the well from the sick I do not think does any good, as this has been tried. There seems to be a difference in the symptoms: some will eat while others will not; some die apparently in good order, will eat as well as any, and all at once will stop eating, go off, lie down, and expire. Tar has been the best preventive, but in my opinion there is nothing that will effect a sure cure.

Clay county, Ill.—The hogs have died in various parts of Clay county with what is called cholera. Microscopic examinations have in some instances proved that the deaths came from trichina. Would it not be well to encourage more perfect and particular investigations of all diseases of cattle and hogs? Remedy or prevention might be suggested by such means. A child 12 years old, six miles north of this, died last month from trichinosis. We found the trichina in astonishing numbers by dissection and the microscope.

"Chicken cholera" is probably the effect of trichina.

Union county, Indiana.—There has been great loss of pigs, on some farms as high as 80 per cent. Poultry dying on the same farms.

Hickman county, Kentucky.—Hog cholera prevalent.

Knox county, Tennessee.—Cholera among the hogs is proving more fatal than usual.

Dyer county, Tennessee.—Cases of hog cholera frequent, and loss considerable, perhaps one-half the stock.

GRASSHOPPERS AND CATERPILLARS.

Harrison county, Iowa.—The grasshopper eggs which were deposited last fall have hatched out, but from present appearances are not numerous to do any great amount of damage. The blackbirds are taking them up most splendidly; every day may be seen thousands of these noisy fellows, in great droves, hovering over the fields, alighting at one end, passing and repassing, gobbling up all that lie in their way, showing that they, in a measure, will pay for the damage they do in the fall to the green corn. There is no sure way of preventing the ravages of the grasshoppers when they are as numerous as they were here last season. Ditches and fires would have been of little use. Late fall plowing is beneficial in destroying their eggs. I, however, saved a small piece of corn (about 10 acres) by cutting a piece of brush adjoining it. When the leaves were coming out, the grasshoppers left the corn for the wilting brush, and remained there until ready to fly away. They even passed through the corn from more distant ground to this place, and in their march did the corn no harm.

Monrovia, Kansas.—The grasshoppers are, like the corn, growing slow, but the "crop is sure." They are destroying spring wheat, oats, barley, and early potatoes; all the gardens where they are or have been plentifully hatched out are eaten up. They seldom lay eggs on uncultivated land. The commons, old roads, along railroads, old waste fields, &c., on the summer side, are their favorite hatching grounds. They can deposit their eggs in the hardest beaten roads, and seem to seek beaten ground. They take marches every clear day, but they will not cross a stream much wider than they can jump, but if they get into the water they never drown; they kick on and over like the water spider. Comparatively speaking, I do not now think their ravages will be extensive. They are not found, I learn, beyond 11 miles west of Monrovia—say 30 miles west of Atchison. If none come in after those now here are on the wing, we will be free from them next year, as those here now will lay no eggs here.

When they march, they all seem to understand the direction at once. Last Saturday, they all at once, about 9½ o'clock, commenced a march in a field about 75 rods long, part in fall wheat; they were scattered all over the field, and yet at one time they were on the march the whole length of the field, and all were going the same direction in parallel lines. Their course was a little south of east, and the ground was literally covered with them, and when the front ranks approached the creek, and the rear came up, there were bushels of them. I set fire to some old grass along the stream and destroyed immense numbers of them. Fire, if it does not char them, leaves them red.

Monrovia, Kansas.—At about 11 o'clock this morning the grasshoppers came through an uncultivated field and orchard and attacked my spring wheat, which was growing finely; and by 4 o'clock one-third or more of the field was as bare as a summer fallow field; every blade in their line of march was devoured; the ground under them was left bare, except their excrements. The breadth occupied going forward was about 12 feet, looking black with the crawling, loathsome insects. They are small, and black or striped, with a grayish tinge. They have no wings yet, and can be driven like a flock of geese. I had a furrow drawn a few feet ahead of them, and when they crawled into it, a furrow was thrown upon them. Millions were thus buried, but many escaped by lively jumping.

Independence county, Arkansas.—A kind of caterpillar appeared in this county last year, in the latter part of April, fed chiefly upon the black oak, and disappeared in May. It has come something later this season, in incredible numbers, and forests of oak of 100,000 acres in this county are stripped of almost every leaf. They seem so wonderfully destructive that one can but shudder to contemplate the consequences to man and beast, should they once attack the grapes, fruits, and cultivated crops.

STEAM PLOWING IN NEW JERSEY.

An interesting trial of one of the Fowler double-acting steam-plows has just occurred in Burlington county, New Jersey, upon a tract of 32,000 acres owned by Colonel William C. Patterson, of Philadelphia. Several hundred acres were planted in beets in 1868, with a result so successful that the proprietor determined to initiate and undertake the manufacture of beet sugar upon a large scale, and is making arrangements of a magnitude commensurate with the extent and importance of the undertaking.

The Commissioner of Agriculture was present during several days' plowing, and returned more than ever convinced of the practicability and necessity of introducing steam generally in the culture of all lands in the country adapted to this improved mode of culture.

The gang of plows consisted of 12, six operating at a time, driven by two 14-horse power engines, one at each end of a series 60 rods furrows; the breadth cultivated at one movement was 78 inches, the depth 8 inches, and the furrows were laid with faultless regularity, at a rate of speed which would insure the perfect plowing of at least 18 acres per day, and under very favorable circumstances 25 acres. The machine was guided easily by one man, and reversed at the end of the furrow without a moment's loss of time. The surface was rough, though the soil was a sandy loam, easy of cultivation.

Two other steam-plows of the same manufacture are already in use

in this country, one in Louisiana and one in the west. The successful use of these machines must stimulate the introduction of others, or, better still, the more perfect adaptation by American inventors of steam cultivating machinery to the wants of American agriculture. It should be remembered that the principle upon which this machine is built was first applied in an American invention of more than 30 years ago.

It should be mentioned that Colonel Patterson has also in view the feeding and improvement of stock, and to this end he has already obtained a large number of English mares of the most approved blood, for breeding purposes.

THE STEAM PLOW IN LOUISIANA.

The Fowler steam plow introduced into Louisiana by Mr. H. E. Lawrence, and described in the Annual Report of this Department for 1867, is now in successful operation on the Magnolia sugar plantation, about 40 miles below New Orleans. An eye witness of its operations at date of March 18, 1869, says:

At the time we saw it they were subsoiling between rows of cane planted seven feet apart, last fall. They were running six coulters at once, three on each side of the cane row, the outer ones six feet apart, the next two four and a half, and the inside pair three feet. The foot of each coulter was about the size of a large man's hand, and the main shaft of the coulter was simply a solid bar of iron crooked to the right curve and angle.

The foot of each of these six coulters went from 20 to 25 inches beneath the surface, and broke up the whole under-strata of clay to the width of more than six feet. We measured the depth and width with a tape line which we had with us.

Though the soil is an exceedingly stiff clay, no surface water remained in the 20 to 25 inches pulverized by the cultivator. The proprietor of the plantation believes that this subsoiling, with fall planting, will secure a good stand and prevent rot in winter; that the avoidance of injurious packing of the soil by the treading of horses and mules will prove a great advantage; and that a saving is effected of half the after-working formerly required, and at least half a hogshead of sugar per acre added to the crop.

The soil is turned to the depth of 12 to 14 inches in the fall and winter plowing. Two hands suffice to manage the plows and engines. One of the engines was run by a negro boy, 14 years old. In harrowing, an implement 16 feet wide, with teeth two feet long, is employed.

FRUIT CULTURE ON THE MISSISSIPPI RAPIDS.

Mr. Thos. Gregg, secretary Warsaw (Illinois) Horticultural Society, writes as follows upon the subject above named:

The soil and climate of this county, Hancock, particularly the bluff timbered lands bordering on the Mississippi, we regard as well adapted to the growth of most varieties of fruits. The subsoil is a calcareous clay, overlying heavy deposits of limestone. The timber growth is principally the oak, hickory, white and sugar maple, walnut, butternut, cherry, elm, mulberry, ash, &c., with an undergrowth of plum, crab apple, grape, blackberry, raspberry, and hazel. Most of the cultivated fruits grow well, and our people are daily becoming more awake to the fact, and are beginning to plant much more than formerly. Apples and grapes it is believed will take the lead, though many other fruits are being planted quite extensively. Formerly, when the early settlers began to plant, many failures occurred, chiefly from want of knowledge of varieties; hence the conclusion was reached that orchards could not succeed. Later experience has taught observing nurserymen and orchardists what to grow and to plant, and now, while large numbers have been discarded, the supply of the tested varieties is equal to the demand.

Apples.—The most popular apple now in this region, and the one most sought for market planting, because of its fine appearance, and the hardiness, and adaptability and good bearing qualities of the tree, is the Ben Davis. (Synonyms Red Pippin, New York Pippin.) While this is a good apple for cooking and eating, it is decidedly inferior to such apples as the Baldwin, Roxbury Russet, and Bellflower; yet it sells, and can be produced 20 to 1 of these—the chief consideration in the money point of view. Our next most popular winter sorts are Winesap and Rawle's Janet. These, with a few others, such as Jonathan, Rome Beauty, Peck's Pleasant, and Hubbardston Nonesuch, are about all the winter varieties necessary in an orchard for family use and market. Of fall apples Rambo, Maiden's Blush, and Fall Wine, are most popular. The best summer varieties are Red June, Early Harvest, and Red Astrachan.

Of course others are quite extensively planted, many of them *on trial*. One of my neighbors, President Hammond, of the Warsaw Horticultural Society, in an orchard of over 2,000 trees, has no less than 90 varieties.

Peaches.—Of these the propagated sorts grown here, and, as I believe, everywhere, are less hardy than the seedlings. Hence, of late years, much attention has been given to the selection of the best seedlings, many of which are known to reproduce themselves with little variation. Many fine sorts have been produced from the seed.

This being near the northern limit of the peach region, our crop is not very certain. We have had three good crops, however, within the past four years, including 1868. The prospect for 1869 is not at all flattering.

Cherries.—Early Richmond and common and English Morello are the most certain, and do well here. Many of the more tender though finer varieties have been planted from time to time, but can be recommended only in peculiar situations, as our climate has proven to be too severe for them.

Grapes.—There are large quantites of grapes grown in this county, the greater portion of them in the vicinity of Nauvoo and Warsaw. Catawbas largely outnumber all others, though latterly other varieties are being planted to a considerable extent—the Concord, Clinton, Delaware, Hartford, Iona, Ives and Norton's Virginia, being chief among them. The Catawba has done better this year than for several years before, and is still thought by many to be our best and most reliable wine grape. The Clinton is gradually advancing in public estimation as a wine grape, while the Concord still stands No. 1 as a grape for the million.

Small fruits have not yet become very extensively planted here, though their culture is increasing. The Lawton blackberry proves to be rather tender for our changeable climate; Kittatinny and Missouri Mammoth, but little tried as yet, are said to be hardier. Of raspberries, Doolittle's Improved Black Cap, Purple Cane, Golden Gap, Miami, Ohio Everbearing, and one of the many Red Antwerps, are all grown with varying success—the Doolittle being the most reliable. Houghton's seedling gooseberry, and Red and White Dutch, Cherry, Victoria, and White Grape currants are planted. Among the strawberries Wilson's Albany still holds a pre-eminent rank, though the Agriculturist, Green Prolific, Jucunda, and a few other sorts are inquired for.

Though well adapted to the cultivation, our region seems also to be the home of multitudinous insect enemies. So that, what with the curculio, the codling moth, the canker-worm, the bark-louse, the army of borers, and the thousand and one other insects and creeping things, not forgetting mildew and blight, that devastate and prey upon our fruits, fruit-growing is getting to be a rather hard road to travel. Here, as elsewhere, the law has been promulgated, "Eternal vigilance is the price of fruit!" In the unceasing struggle for existence, which pervades both the animal and the vegetable kingdoms, man is not exempt, but is compelled to take a part. With him destruction precedes enjoyment. He must destroy the noxious plants and the insect depredators in order that he may enjoy the fruits of the garden; but the battle is likely to prove a serious one. With all man's skill and science, and with his vastly superior physical ability, it really seems as if the worm and the bug were likely to obtain the mastery, and retain possession of the field.

We must become [illegible]er observers, and be more precise and thorough in our experiments. Nothing is settled, [illegible]ng is known, nothing is absolutely demonstrated. All is theory! We are a nation of [illegible]ists, and in nothing is that fact more observable than in our horticultural literature. [illegible]e advances, another denies, no one demonstrates.

Divide and conquer is good strategy in war; we must use it in our contest with the insect tribes. We must ascertain which are our friends and which are our foes, and we must use the friendly tribes in carrying on our warfare against those that are enemies.

PROGRESS OF COLORADO.

Geographers have generally informed the world of the existence of a great American desert stretching westward from the Missouri to the mountains; and the impression has been given that the whole Rocky

mountain system is an inhospitable if not impenetrable waste. Such ideas have been rudely dissipated by the stubborn facts of recent history; yet the true character and capabilities of the western half of this continent are only partially known and by no means fully appreciated.

A few statistics obtained by the Southern Colorado Board of Trade will illustrate the agricultural capabilities of the mountain valleys. El Paso county includes the valley of the Fontain qui Bouille and its tributaries; Conejos is in the San Luis Park, on the Rio Grande river:

EL PASO COUNTY.

	Amount.	Value.
Number of acres under cultivation	8,766	$86,100 00
Number of acres suitable for cultivation	21,663	155,073 00
Value of ditches for irrigation	.....	16,908 00
Number and value of cattle owned	5,746	193,319 00
Number and value of sheep owned	6,840	25,920 00
Number and value of hogs owned	532	6,568 00
Number and value of horses owned	509	52,714 00
Number and value of mules owned	106	16,725 00
Number bushels corn raised	22,515	24,500 00
Number bushels small grain raised	51,444	51,444 00
Average bushels corn per acre	30	
Average bushels small grain per acre	40	
Number sacks flour manufactured	6,090	30,450 00
Number pounds of wool produced	13,680	2,735 00
Number fruit trees cultivated	480	500 00
Number gallons native wine made	2,280	6,840 00
Number pounds butter made	85,402	42,701 00
Number pounds cheese made	10,800	2,700 00
Value farm improvements	.....	167,095 00
Value farming implements	.....	24,715 00
Average cost of keeping cattle per head per annum, $3		
Average cost of keeping sheep per head, 50 cents		
Number pounds freight received	1,963,600	
Amount paid for freight	.....	95,013 00
Value lumber made and sold	.....	110,000 00
Value gross sales merchandise	.....	94,250 00
Total value	.....	1,206,774 00

CONEJOS COUNTY.

	Amount.	Value.
Number acres under cultivation	3,000	$30,000 00
Number acres suitable for cultivation	100,000	125,000 00
Value of ditches for irrigation		10,000 00
Number and value of cattle owned	5,650	154,000 00
Number and value of sheep owned	200,000	400,000 00
Number and value of hogs owned	1,227	6,335 00
Number and value of horses owned	989	74,175 00
Number and value of mules owned	475	65,500 00
Number bushels small grain raised	15,000	15,000 00
Number pounds wool produced	400,000	40,000 00
Number pounds butter made	5,000	3,000 00
Number pounds cheese made	2,500	700 00
Value of improvements on farm		120,000 00
Value of farming implements		6,000 00
Average cost of keeping cattle per head per annum, $1 50		
Average cost of keeping sheep per head per annum, 25 cents		
Value of lumber made and sold		4,500 00
Number pounds freight received	300,000	
Amount paid for freight		25,000 00
Value gross sales of merchandise, including such as sold to employés		150,000 00
Total value		1,230,210 00

If the above statements are correct, it is evident that these valleys are remarkably fertile, and that it pays to irrigate. In El Paso, the cost of irrigation is about one-fifth of the value of the area in cultivation; in Conejos, one-third; $2 per cultivated acre in the former county, and $3 in the latter. The average yield of small grain in El Paso is 40 bushels per acre, and 30 bushels of corn, giving a money return of $40 per acre of small grain, and $32 40 of corn. This is about double the average return of the United States for lands in small grain.

The reported cost of keeping cattle and sheep fails to deepen impressions of inhospitable climes and sterile lands. Three dollars per head for keeping cattle and 50 cents for sheep indicate a possible exemption from starvation gratifying to prospective emigrants to Colorado. An assessed valuation of farm stock, in a new and thinly settled county, amounting to $295,000, is at least a promising beginning, while 85,402 pounds of butter and 10,800 pounds of cheese, as a commencement of dairy operations, may prove an earnest of a great future for dairying in a region of such purity of atmosphere and salubrity of climate.

VALUE OF SEWAGE DEPOSIT OF THE CITY OF WASHINGTON.

The broad and sluggish canal on the northern border of the public grounds west of the Capitol, in this city, is a source of much annoyance, it being the outlet of the sewerage of the city, full or empty with the flow or ebb of the tide, with a consequent tendency to fill with mud, the color and odor of which give vivid and strong impressions of fertility, which are not sustained by chemical analysis. The question of sewage is an important one, and this chemical examination may possess a gen-

eral interest, though it should be observed that the fecal matter of a large portion of the city does not go into the sewers. The Commissioner of Agriculture, desirous of ascertaining the economic value of the canal deposit to correct false impressions of the practicability of its utilization, caused a chemical examination to be made in the laboratory of the department, which shows that while the canal is an injury to the health of the city, its deposits are scarcely worth freighting even to the smallest distances.

The report of the chemist is appended:

WASHINGTON, D. C., *May* 31, 1869.

SIR: In accordance with instructions received from you, I have made an examination of the mud of the canal, and submit the following report:

The mud was collected close by the foot-bridge leading to Thirteenth street, at low water, and when allowed to settle in the pail, had a thin layer of water separated from it. This was filtered off, and the remaining mud was then examined. It had an odor rather of vegetable than animal decomposition—was strongly alkaline to litmus paper, not removable by heat. The specific gravity of the soft mud was 1.412; distilled water being 1.000.

The following represents its composition in 1,000 parts:

	1st experiment.	2d experiment.	Average.
Moisture	523	551	537
Dry matter	477	449	463
	1,000	1,000	1,000
Dry matters:			
Inorganic matter	465	437	451
Organic matter	12	12.2	12.1
	477	419.2	463.1

Inorganic matter:	
Sand, angular quartz, and reddish clay	415.00
Phosphate of lime, with peroxide of iron	2.00
Alumina (8.00) and phosphate of iron, (0.12)	8.12
Lime, carbonate	3.72
Magnesia	0.16
Sulphuric acid	2.00
Chlorine (of common salt)	2.56
Soda and potass	3.44
	437.00

From the foregoing it appears that the mud as collected contains 50 per cent. of water. It should lose about 30 per cent. of this before it would be in a condition sufficiently dry to render it portable or fit for use. If dried by evaporation or otherwise, down to 25 per cent. of water, then the 75 parts of solid matters would contain, according to the above analysis:

Insoluble sand and silicates	71.25
Saline matter in solution	3.75
	75.00

As the 71¼ parts of sandy matters are of no value as a manure, there would remain only 3¾ per cent. of matters of any value in this respect, which substances could be purchased at a cheaper rate, or made from materials more readily attainable than by the manipulation of so bulky a material with so little manurial value as this deposit of the canal.

With its present percentage of fluid, this mud contains in every ton not quite 4½ pounds of phosphate of lime, 8⅛ pounds of carbonate of lime, 4½ pounds of sulphuric acid, and almost four pounds of common salt. The alkaline salts present amount to 7¾ pounds. These are the only substances of value. The money estimate of these may be thus expressed:

4½ pounds phosphate of lime, at 2½ cents per pound	$0 12
8⅛ pounds carbonate of lime	5
4½ pounds sulphuric acid, at five cents	23
4 pounds common salt	8
7¾ pounds salts of potash and soda	50
Total	98

The value to the farmer of a ton of this manure in its present state is thus 98 cents, at its highest value. Of this the ammonia compounds are worth about 12 cents, and the rest is highly valued at 86 cents. This 98 cents' worth is contained in 25 pounds weight, to obtain which the farmer would have to haul 1,300 weight of water and 800 weight of useless sandy clay.

The organic matter, amounting to about 27 pounds in the ton, consists chiefly of vegetable debris, fibres and minute vegetable growths of brackish water—*confervæ* and *algæ*—yielding very minute traces of ammonia, and furnishing by decomposition carburetted hydrogen, with a very faint trace of sulphydric acid. This portion of the mud cannot be considered to be of much value, being readily supplied by the use of many artificial compounds.

The mud of the canal is chiefly made up of the wash of rain and city water supply of the streets, combined with the backing up of the tidal stream acting upon it. At low water the sewers pour out their contents, which flow in lazy channels *through* the mud, not *over* it; and when the tide rises it flows into the sewers and dilutes the sewage and carries it away, so that it is almost wholly lost as a fertilizer to the mud; the mud, therefore, differs but slightly from the mud of a stream unpolluted.

The sun and air acting on the exposed mud with its vegetable matter produce decomposition whenever the temperature of the air is sufficiently high to favor it—that is, above 70 degrees Fahrenheit—and hence in summer this is always going on at low tide; and as at this season southerly breezes prevail, these emanations are carried over into the city and become potent causes of disease; and it becomes the duty of the Board of Health and corporate authorities to abate this nuisance as soon as possible. This can be accomplished in the simplest manner by narrowing the canal by forming a closed sewer at one side of it, into which the city sewers may empty and be conveyed some miles further down the river; this could be readily done if it be deemed desirable to preserve the canal as a commercial thoroughfare.

The sewer water differs but little from Potomac water, of which it is in dry weather almost wholly made up; in rainy seasons the rainfall delivers into these channels, and thus dilutes the sewage. The fluid is alkaline, acting strongly on litmus paper, which reaction is mostly produced by salts of potass and soda—mainly the latter—derived from the soap-water of sewage. Much of the odor of the sewage is derived from this ingredient (soapsuds) in contact with sea-water and at high solar temperatures. The ammoniacal contents are very slight, the sewers containing only a small amount of the animal fluids of the city, which are so diluted by the abundant use of Potomac water and the occasional large rainfalls that it has no ammoniacal odor and but faint volatile reaction. The specific gravity of the fluid as it leaves the sewers is 1.0002, (June 1, temperature 72°,) and it yields 16 grains of solid matters, dissolved, in the gallon. Such a fluid cannot enrich any compound with which it may be mixed; it is valueless as a manure on account of the cost of transportation. This examination is interesting, as it confirms the opinion expressed everywhere in European cities, (where the city water flushes the sewers,) regarding the futility of the expectation entertained by some persons of the conversion of sewage deposit or sewage liquids into a valuable manure, which might render us independent of guano or other foreign or home manures. In its present state the deposit is not a portable manure, nor does it contain the ingredients which would form the basis of an economical or valuable manure. It is neither more nor less than sand or street mud, diluted with a very weak alkaline solution, and having most of its valuable matters sifted out and carried away by the tide.

It is a great injury to the health of the community where sewers are made the means of the removal of animal exuviæ of the city, and although there is but a small amount of such in the sewage of this city, yet it is by so much injurious, inasmuch as these matters are not immediately removed by delivery into the canal or river, but are delayed for a time at the point of emptying, and thus become sources of infection to the city. In conclusion, it appears that the city sewage is not valuable as a source of manure, because so highly diluted; and any calculations based upon a false idea of value, or any expenditure involved in attempts to form a manure out of our city sewage or canal deposit, must result either in a loss to the undertaker or be a great fraud upon the farmer and gardener; and it is evident that if the authorities—whose public duty it is to care for the health of the city—have no valuable commodity in the sewage which private enterprise would remove, it becomes their duty to take steps so that this imperfect and insalubrious mode of cleaning a city be not a continual cause of disease.

I remain, sir, respectfully,

THOMAS ANTISELL, M. D.,
Chemist.

Hon. HORACE CAPRON,
Commissioner.

LAND DRAINAGE IN CALIFORNIA.

During the past year an interesting example of drainage and reclamation of land has occurred in the case of Sherman's island, California, lying at the head of Suisun bay, between the Sacramento and San Joaquin rivers. The island is about 12 miles long and three miles wide, containing 14,000 acres, and having an alluvial soil of great depth and richness, capable of the most extraordinary production. As it has heretofore been subject to overflow at all high tides, as well as to devastation by occasional floods, very great disadvantage has been experienced in efforts at cultivation, and a large share of the land has been left to its native growths of rank grass and tule. But within the past year the proprietors of the island, organizing under provisions of a law recently passed by the State legislature, have undertaken the complete reclamation of their lands. The island has been surrounded by an embankment 47 miles in extent, averaging five feet in height, in the course of which 30 self-acting water gates discharge the drainage of the land. The cost of the works, including dams and levees for several sloughs, was about $80,000. Entirely satisfactory results have been obtained in insuring the safety of crops and in enhancing the pecuniary value of the land. During the past year 4,376 acres of land were sold at an average price of $12 69 per acre, the greater part having been put in market in order to meet taxes arising from the cost of reclamation. Very little land is now offered for sale. The anticipations of the present holders may in some degree be appreciated in view of the fact that in 1864, on one ranch fronting the Sacramento river, after the land had been cleared by fire, wheat was sown in the ashes of the burned surface-soil, without plowing, and produced a crop of 69 bushels to the acre. A subsequent "volunteer" crop produced 52 bushels per acre; and the third year, although plowed and sown late in the season, 15 acres of this land produced 50 bushels per acre. Statements not less remarkable are made respecting the growth of fruit and vegetables on other farms.

WHEAT CULTURE IN VIRGINIA.

Thomas S. Pleasants, of Petersburg, Virginia, writes to the department relative to the importance of the introduction of a new and earlier variety of wheat in that State, to insure exemption from the black rust, which he denominates the most formidable enemy their wheat-growers have to contend with. He says:

Our harvests commence, one year with another, about the 20th of June, seldom varying five days either way. If the wheat ripens before the 20th, it is liable to little injury from that cause; if later, it is always affected more or less, according to the humidity or dryness, the sultriness or coolness of the weather. In this climate June is an exceedingly precarious month. Our summers set in steadily about the 12th, though we have frequent hot days before that time; but from the 12th to the 20th it is almost uniformly warm, with frequent showers, and this we find to be the most critical period in the growth of the wheat plant. It is then that the air is full of the sporules of the rust-fungus, which, deposited in the wheat, either take root or are rendered innocuous, according to the condition of the atmosphere. The suddenness with which these fungi are sometimes developed is a matter of wonder and astonishment. I have seen whole fields that in the morning showed but little signs of rust, which were so changed in appearance before the setting of the sun as to look as if the shadow of a dark cloud rested upon them. This only happens after a series of days of hot, stifling weather, when the air is charged with moisture—a phase which the weather is very liable to assume at that particular juncture. Now if the premises attempted to be stated are accurately laid down, the conclusion appears to be inevitable, viz: that, in order to escape the

rust with any degree of certainty, farmers should seek for and cultivate those varieties of wheat only that come to early maturity. If, for instance, we had a variety that might be depended upon to ripen with a good degree of uniformity by the 15th of June, the accession of rust, except in peculiar seasons, would be anticipated.

In former years we had in Virginia two or three varieties of wheat which ripened at least 10 days sooner than any of those now in cultivation. Every old farmer probably remembers the "White May" and the "Red May." The former was sometimes, in favorable situations, (though not often,) cut the last week in May; generally, however, it was ready for the scythe by the 10th of June. It had the whitest, plumpest berry, and made the finest flour of any wheat I have ever known. It had a run of many years, and on rich ground was very productive, often yielding from 30 to 35 bushels to the acre. The Red May was quite similar, except in the color and in the strength of the stem, the latter not having body enough to support the weight of the ear, and was so liable to be prostrated by storms that it was never extensively cultivated. Neither of these varieties were ever affected by the rust.

It must be more than 20 years since any new variety of wheat has been brought into anything like general cultivation among us. Thirty or forty years ago we had a new variety almost every year, but most of them had a short run, and finally farmers settled down on the "Early Purple Straw" and the "Woodfin." That these have degenerated in consequence of careless management can hardly admit of doubt; at any rate, they have lost the quality of productiveness they once possessed. The best yield of grain I heard of last year, and on one of the finest estates on James river, did not exceed 10 bushels to the acre, nor was it very seriously injured by rust. Formerly from 25 to 35 bushels per acre was not an unusual crop on the James river lands, and that on fields extending over hundreds of acres. As instances, I might specify the farms of Sandy Point and Shirley, owned respectively by Robert Bolling and Hill Carter. Mr. Bolling, from 800 acres, (500 clover fallow and 300 corn stubble,) reaped, one year with another through a series of years, 20,000 bushels of wheat; and Mr. Carter, though on a less, yet on a still extended surface, from 30 to 33 bushels to the acre. The Brandon, Berkley, and other farms about the same.

Thirty years ago I visited David Thomas, a distinguished agriculturist residing at Greatfield, near Cayuga lake, who told me that his farm took its name from the fact that in the early settlement of the country an immense clearing of several hundred acres was made in one year and seeded down in wheat. The product was 40 bushels to the acre throughout. At the time of my visit few crops averaged more than 20 bushels to the acre. Of late years, according to agricultural statistics, the average yield of the Genesee valley does not exceed 10 or 12 bushels.

What we most need in Virginia, to avoid the rust and to put wheat culture on a tolerably safe basis again, is to obtain a variety that will ripen very soon after the accession of summer heat, say by the 15th of June. Probably such a variety might be found in almost any of the fine wheat-growing districts of the United States. Nor need we despair of originating one possessing this desired quality, even from our own wheat fields, by a judicious selection of the earliest ripened ears, such as are found in every field at harvest time, a little in advance of the maturity of the average crop. By rearing from the same seed for a few years, and continuing the selection, a variety of a permanent type might be obtained which would prove not only a blessing to the country but a small fortune to the originator. It is by a similar process that all distinguishable varieties of wheat have been brought out.

This subject may well be deemed of sufficient importance to merit the attention of the Department of Agriculture. If left to individual enterprise, or even to agricultural associations, it may be long years before any valuable results, as applicable to the community at large, can be reached. If you can succeed in introducing among the farmers of Virginia a variety ripening early enough to escape the rust, with the additional merit of being productive, you will confer upon them an incalculable benefit.

IXTLE FIBER.

A letter has been received by the Commissioner of Agriculture, dated Harlem, New York, from Hon. J. McLeod Murphy, accompanied with three skeins of the ixtle fiber, or *Bromelia sylvestris*, each produced from a single leaf, of which a single plant might average 20. A package of hackled fiber of the same material is received, and another containing small samples of fishing tackle, which may be seen in the museum of the department. The following is the substance of the communication:

First of all, before I describe the plant and the method of its cultivation, I beg to call your attention to the extraordinary *length* and *strength* of the individual fibers, their susceptibility

of being divided almost infinitessimally without breaking, their flexibility without *kinking*, and the readiness with which they receive and hold vegetable or chemical dyes without being impaired. Since my return from Mexico I have had little or no opportunity of testing this plant practically; but some samples, such as I send you, were given to an old and experienced maker of fishing tackle, and he does not hesitate to pronounce the ixtle fiber as superior in every respect for the manufacture of trout and other fishing lines, not only on account of the readiness with which it can be spun, its extraordinary strength, but its perfect freedom from kinks when wet. The only secret, if there is one, consists in the preliminary precaution of boiling the fiber (as you have it here) before twisting it. In this one respect it will supesede the use of silk.

Apart, however, from its use as a thread, I hazard nothing in saying that it forms the best paper stock that can be obtained. I speak now in reference to the imperfect, withered, rejected, and dried leaves, from which the fiber cannot be conveniently extracted by the indifferent mechanical means that the Indians employ. Although I have no samples of paper made from this source just now at hand, yet I can assure the department that several magnificent samples of paper for banking and commercial purposes have been made by manufacturers in the eastern States, from the dried leaves of the ixtle plant brought from the neighborhood of Tabasco.

The samples of fiber I send with this were obtained by the most primitive means, viz., by beating, and at the same time scraping, the leaf of the plant (in a green state) with a dull machete. Then, after the removal of the glutinous vegetable matter, it is combed out and rubbed between the knuckles of the hand until the fibers are separated. The next step is to wash it in tepid water and bleach the skeins on the grass. This is the method pursued by the Indians on the isthmus of Tehuantepec; and the average product for the labor of a man is from four to five pounds per day.

It is scarcely necessary to tell one so well informed as yourself that this spontaneous product is the *Bromelia sylvestris*, which differs in some respects from the *Agave Americana*, the *pulque de maguey*, and *Agave sisalana* of Campeche; a difference arising solely from soil and climatic influences. The name *ixtle* is given to that species which is characterized by the production of the long fiber; and chiefly because the leaf, being shaped like a sword, has its edges armed with prickles, similar, in fact, to the weapon formed from *itzli*, or obsidian, used by the Aztecs. Hence the term. The *pita*, on the other hand, although obtained from a variety of the same plant, is a coarser and shorter fiber, which grows in the *tierras templadas*. The name comes from the word *pittes*, which is given to the plantations of the pulque plant in the uplands of Mexico. But the peculiarity of the ixtle is that it grows almost exclusively on the *southern* shore of the Mexican gulf, or in what is known as the "sota vento," that is to say, between Alvarado and Tabasco, and extending as far inland as the northern slopes of the dividing ridge which separates the Atlantic from the Pacific. The points generally selected for its cultivation are the edges of a thick forest, for which the small undergrowth is removed by cutting and burning. The roots of the plants are then set out at a distance of five or six feet apart; and at the end of a year the leaves are cut and "scraped." The chief object is to obtain a constant shelter from the rays of the sun, which would otherwise absorb the moisture and so gum the fibers together as to make them inseparable.

The average length of the leaf is six feet, and the time to cut it is clearly indicated by the upward inclination it makes. In other words, the radical leaves cease to form curved lines with their points downward, but stiffen themselves out at an angle as if to guard the source of efflorescence. When the ixtle is young its fibers are fine and white, but as it grows in age they become longer and coarser; and in a wild state the thorns are very numerous, but by cultivation they are diminished both in size and number, and in many instances there are none at all. Where any quantity of leaves require to be handled, a pitchfork would be very useful, especially if gathered for paper stock. A few days after cutting the sun would dry them out, the thorns would drop off, and then they could be easily baled. Independent of the great value which the ixtle has for textile fabrics and for paper, it possesses many valuable medicinal properties, to which I need not allude. It requires no labor to cultivate it, and no insect is known to feed upon it. It grows everywhere in the primeval forests of the Gulf coasts, and, in my opinion, is far superior to any of the grasses for textile fabrics. But as yet no mechanic has succeeded in devising a means of effectually extracting the fiber, and until this is done I presume that its real commercial value will remain unappreciated.

You will readily discover the superiority of the ixtle over the *jenequin** of Cuba, or the hemp which comes from Sisal and Campeche.

THE ESPARTO GRASS.

Two years ago efforts were made by this department to obtain information concerning this paper fiber, and to obtain seed from Spain for

* *Agave sebolifera.*

propagation. Recently official inquiries have met with the following response from the United States consul at Newcastle-upon-Tyne, England:

UNITED STATES CONSULATE, *Newcastle-upon-Tyne, May* 15, 1869.

SIR: According to your request I have instituted inquiries relative to the possibility of transplanting the Esparto grass for culture to America, and the economy of its use in the manufacture of paper.

I have communicated with Dr. Hooker, director of the royal gardens at Kew, on this subject, and with Daniel Oliver, keeper of the royal herbarium, both of whom have responded most kindly. I have also received communications from Spain and visited one of the oldest and most successful paper-mills of England, where the Esparto grass is exclusively used. There are important points of information that I have not yet received, such as the rainfall, degrees of heat and cold, &c., &c., of the best Esparto producing districts.

The soil best adapted to its growth is a very sandy soil, and slopes or hillsides (not too steep) are said to be the best, in a warm but not too dry climate.

This grass is gathered or harvested by pulling, not by the roots, but by a quick jerk of the hand to disjoint it above the roots, so as not to destroy the latter, and also to avoid a mixture of the hard, woody portion of the plant, which would have to be separated from the grass before suited for use at the paper-mill. The hands must be protected by heavy gloves, as the grass is very sharp. Considerable skill is required in pulling the grass without destroying the roots. If properly gathered there is no woody fiber to be rejected in the process of manufacture.

The grass is dried just as hay would be, and bound in bundles by ropes twisted from the grass itself, and then is ready for the paper-mill. It costs from $20 to $30 per ton in England, in Spain about $5 less per ton. Last year the amount imported into England was 95,000 tons.

The process of manufacturing paper from this grass is no more difficult than from rags, and far more pleasant. No infectious or contagious diseases or poisonous insects being carried by it, and the processes are so similar, except in the amount of chemicals required, that a description is almost needless.

I have been through the works of Messrs. William Hurry and Albert Richardson, at Jarrow-on-Tyne, Durham county, England, and these gentlemen kindly pointed out all the steps in the process, and gave me specimens of the grass and paper. They produce 30 tons of paper per week, using from 50 to 60 tons of Esparto grass. No rags are used. The average cost of the Esparto is $25 per ton. The machinery is propelled by a 100 horse-power steam-engine. Eighty-three women and girls are employed in sorting and boiling the grass; 14 men and boys in washing and beating; 30 in finishing; 17 on machines and cutting; 8 mechanics; 6 engineers and firemen; and 10 ordinary laborers—168 in all. This estimate includes the manufacture of all their own chemicals.

The first step is the assorting of the grass, or separating it from roots, weeds, and flowers. Fifty girls are needed for this part of the work. The grass is laid upon tables of wire, so that all small bits of dirt or leaves may fall through as the work of separation goes on. The less of weight sustained in this process is three to five per cent.

The grass is then put into large sacks and goes below, where it is put into boilers. Formerly the boilers were open broad circular vessels, but are now cylindrical and closed, so that a pressure of steam of 20 to 25 pounds to the square inch can be given to add to the effect of the chemicals. The boiling is by steam. In these boilers 10 per cent. of caustic soda (N. O. A.) is introduced; that is, 10 pounds of caustic soda to 100 pounds of Esparto grass, more or less soda according to the fineness or coarseness of the grass and the time given in the boiling. The grass is boiled ordinarily five or six hours in the soda, being kept revolving or stirred in the boiler. The water is then run off and pure water supplied, and the grass again boiled for about an hour, to get rid of the resinous soap formed in the first boiling by the gum of the plant uniting with the soda. It is further washed with cold water and then discharged into large oval tubs or vats, and again washed with pure water. Then bleaching powder is added—two to two and a half hundred-weight containing 35 per cent. of chlorine (chloride of lime) to a ton of Esparto. It is revolved in three bleaching tubs till white, the tubs containing 500 pounds to 1,000 pounds each. Four to eight hours is required for this process; four or five hours will be sufficient unless it is thought desirable to use a smaller quantity of bleaching powder. The fiber, when thus bleached white, is pressed to free it from the bleaching liquor, and then placed in the beating engines, where it is washed for half an hour to free it from the remaining bleaching liquor, and then revolved in the beating engine the same as rags are treated, until it is reduced to a sufficiently fine pulp. The size, alum, and color (when color or toning is required) are added, and the pulp is run off into vats or reservoirs ready for use.

In reducing the pulp to paper, my attention was called to but one point of difficulty not encountered in reducing rag pulp. This occurs just after the pulp changes from the liquid state and takes the sheet form. The material at this stage is less tough and tenacious than when made from rags, and the difficulty is in getting it to enter the press-rollers. But a little management and experience overcomes the difficulty, and the paper when finished is even stronger than that made from rags.

The amount of paper produced is 50 to 55 per cent. of the weight of the Esparto grass as it reaches the mill. The loss of weight is as follows: three to five per cent. roots, weeds, flowers, &c.; 25 per cent. extractive matter soluble in the caustic soda, and 20 per cent. destruction of fiber in bleaching and mechanical loss.

All qualities of paper are produced except the very thin writing paper, which may be produced with a little more mechanical skill. I inclose sample of the paper from Messrs Richardson & Co's. mills. No. 1 is an excellent quality of white printing or book paper; No. 2 toned printing or book paper; No. 3 account book paper; No. 4 a specimen of the best paper that could be made from Esparto grass in 1860, which was manufactured by Routhedge, at Eynsham, Oxfordshire. Messrs. Richardson used a mixture of rags at first, which can be done in any proportion, but for the last three years they have used only Esparto grass. They procure the grass from the east coast of Spain, from Carthagena to Almeria; the best comes from Almeria. They have used a little from Morocco and Algiers, but it required more soda and bleaching powder, and never became so white as that from Spain. The Esparto grows not only in Spain and North Africa, but in various localities along the Mediterranean, in Italy, Sicily, Sardinia, &c., and Portugal.

But the question which most of all interests Americans is its propagation in the United States. Dr. Hooker has written me that he has no doubt but that the Esparto grass would thrive in the United States, and he strongly advises that the introduction be made by seed, not roots, and says it should be started in the nursery and the young plants set out afterwards. Mr. Oliver, who is also one of the best botanists in this country, thinks one of the two species, *Lygeum Spartium*, (soft,) being a creeping rhizomatous grass, might be transplanted by being sent over in Wardian cases well rolled in sand, or in cases filled with sandy soil and buried in nearly pure sand. The other species, *Macrochloa tenacissima*, is supposed to be caespitose, and he thinks this mode of packing might not suit it so well. He also recommends trying seed.

If the *Lygeum spartium* is a creeping rhizomatous grass it would be likely to spread very rapidly, and once rooted a few plants would soon cover a large tract of country.

I send you some samples of both species of the grass. No. 1, best quality of grass, clean, ready for use; No. 2, specimen taken where the previous crop had not been gathered, so that the dead grass is mixed with it, but the latter decomposes and disappears in the process of manufacture, and only lessens the per cent. of paper per ton; No. 3, specimen contains butts of the grass and roots that should not be gathered with the grass, also some heads; No. 4, the same of the other species; No. 5, wild sage often found growing with the Esparto.

I remain your obedient servant,

J. W. McCHESNEY,
United States Consul.

Hon. HORACE CAPRON,
Commissioner.

BELGIAN EXPOSITION OF AGRICULTURE AND FORESTRY.

The following letter of the president of the society having in charge the proposed exposition at Namur, Belgium, has been communicated to this Department by the Hon. Hamilton Fish, Secretary of State, together with the letter inclosing it, from Hon. H. S. Sanford, United States minister resident at Brussels:

QUINQUENNIAL EXPOSITION IN 1869.

NAMUR, BELGIUM, *December*, 1868.

SIR: We have the honor to inform you that the Society of Agriculture and Forestry, of the province of Namur, will hold its third quinquennial exposition in September, 1869, at Namur. This exposition will comprise the following five divisions:

Division 1. Provincial competition of animals for breeding purposes.

Division 2. International exhibition of arboriculture and of all objects, implements, and machines used therein, or in the industries employing ligneous products as a principal material.

Division 3. International exhibition and trial of agricultural machines and implements.

Division 4. Competition in tree and garden culture on the spot, between the instructors of the province of Namur.

Division 5. National competition of iron-work.

Deeming it unnecessary, sir, to call your attention to the utility and importance of international exhibitions of arboriculture and mechanical agriculture, we respectfully ask your aid towards the success of this exposition. We have the honor to transmit to you an extract

from the programme of the exposition, containing a statement of subjects of the second and third divisions; also extracts from the regulations, general and special. We add the remark that the prize juries will be selected from gentlemen of reputation, belonging to the different countries represented.

We shall make it our duty, sir, to furnish to you, without delay, any information which you may desire in regard to this exposition, and shall hold ourselves at your service at any time. We would gratefully receive from you the address of any friends of arboriculture or of any manufacturers who may be disposed to take part in the projected exhibition. Please to direct communications in reference to the subject to M. Stiennon, the secretary of the society at Namur.

Accept, sir, the assurance of our highest consideration.

Count G. D'ASPREMONT-LYNDEN,
President of the Society.

A. STIENNON, *Secretary.*

The following is an abridgment of the extracts mentioned in the above letter:

The exposition will take place at Namur in September, 1869. The precise date of opening and the date of closing will be fixed hereafter. Persons desiring to exhibit are requested to register their names, residence, and profession, stating the numeral descriptions of the classes and divisions in which they desire to take part. Schedules will be forwarded to them, on which they will inscribe their names and the following particulars:

In respect to forest plants and seeds—designation of species, and whether of spontaneous or cultivated, native or exotic growth; age; place of production; nature of the soil in which grown. In respect to ligneous products prepared to indicate age, or presented in the rough state—species; age; defects; diseases. Under this particular classification are included sections of woods, horizontal and vertical, of different ages, also collections representing defects and diseases of woods. In respect to ligneous products prepared for sale—nature of each, and purposes of construction or other use to which it is applicable. In respect to manufactures of wood—nature of the article; manner of manufacture; cost price of the raw material; selling price. In respect to preservation of woods—detailed account of method employed. In respect to agricultural machines and implements—the name and use of each; price; place of manufacture; name of the exhibitor; explanations as to principles of construction, and as to improvements embodied in the machine or implement.

In respect to all articles intended for exhibition in the first and second divisions, statement must be made of the space which they will occupy—first, in the open air; second, under the roof, on the floor, on the shelf, or against the wall.

The above-mentioned schedules are to be signed by the exhibitors and addressed, post-paid, to the secretary of the society, at Namur, by the 1st of August, 1869, at the latest.

The society will bear the expenses of articles included in the competitions of the second division over railroads owned by the State and by Belgian corporations. No articles exhibited are to be withdrawn before the close of the Exposition. On the opening of the Exposition the society will publish a catalogue containing the names of the exhibitors and all information received concerning the articles exhibited.

Plants should, as far as possible, be exhibited in cases of about 60 centimeters in length by 40 centimeters in width.

The managing commission declines all responsibility in regard to the putting up and working of machines and implements. These operations should be superintended by the manufacturers or their agents.

FLAX AND HEMP IN RUSSIA.

Of the agricultural products of Russia, after wheat, flax has the largest consumption, and is also extensively exported. Ten years ago the annual production was estimated at 10,000,000 puds,* which estimate is considered too low in view of the enormous shipments, as the internal consumption reached an amount much greater than the exports. The value of the flax, tow, and linseed exported between 1844 and 1848 was 17,500,000 roubles† annually; from 1849 to 1853 it advanced to 20,500,000 roubles; and 1860 to 1865, to 33,500,000 roubles.

The present production of flax is estimated at 12,000,000 puds, and the annual yield of linseed at 22,000,000 to 25,000,000 puds. Much of this seed is purchased for sowing in England, France, and Belgium. The principal shipping port for flax is Riga, whence 14,000,000 roubles' worth is sent; after which come St. Petersburg, about 4,750,000 roubles; Pernau, more than 1,000,000 roubles; and the custom-house of Verjbolowo, (by the Kowno-Eydtkuhner,) about 1,000,000 roubles. The principal markets for the flax are: Great Britain, 18,000,000 roubles, Prussia, 3,000,000; France, 2,000,000; and Belgium over 1,000,000. The oil seeds exported go from the Baltic ports and the Black sea. St. Petersburg ships annually to the amount of 4,000,000 to 5,000,000 roubles; Riga, 4,000,000; and Odessa, 3,000,000. The principal buyers are: Great Britain, 10,000,000 roubles; France, 2,000,000; and Prussia and Holland about 1,750,000 each. Sunflower, cotton, and a few other oil seeds may be added to the list of 32,000,000 puds of oil seeds produced in Russia. About 15,000,000 puds, valued at 18,000,000, are exported.

Hemp is cultivated in the greater part of central Russia, and the annual production reaches 7,000,000 to 8,000,000 puds, and of hemp seed 5,000,000 to 6,000,000 puds. The exports of hemp by the Baltic ports amount to 4,500,000 roubles, and a quantity goes abroad by the land route. The chief purchasers are Great Britain, 700,000 roubles; Prussia and Sweden, about 700,000 each; France, 500,000; Denmark, 350,000; and the United States, 200,000.

Of 12,000,000 puds of raw flax, from 4,000,000 to 6,000,000, valued at 16,000,000 roubles, are exported; and of 8,000,000 puds of hemp, 3,000,000, valued at 9,000,000 roubles, are exported. Deducting 2,000,000 puds for sowing, there remain for home consumption 15,000,000 puds of seed, 8,000,000 puds of flax, and 4,500,000 puds of hemp. These figures will convey a general idea of the great importance of the industries which belong in Russia to the cultivation of oil seeds and textile plants. These industries are oil-crushing, flax-spinning, sail-cloth, rope-making, and the hempen manufacture.

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*Pud, 36.06764 pounds.
†Rouble, about 75 cents.

AGRICULTURAL EXPORTS.

Exports of certain products of agriculture in the year ending December 31, 1868.

Article.		Quantity.	Value.
Agricultural implements			$829,150
Animals, living, of all kinds			827,177
Ashes, pot and pearl	pounds	2,204,015	221,974
Breadstuffs:			
Barley	bushels	28,178	29,474
Bread and biscuit	pounds	8,669,881	619,727
Indian corn	bushels	9,863,270	11,167,818
Indian meal	barrels	363,080	2,173,592
Oats	bushels	437,553	284,448
Rice	pounds	2,339,177	147,571
Rye	bushels	157,528	284,368
Rye flour	barrels	8,985	76,642
Wheat	bushels	12,904,958	21,771,072
Wheat flour	barrels	2,164,869	19,893,609
Potatoes	bushels	366,469	451,064
Macaroni, vermicelli, and all other preparations from breadstuffs used as food			190,991
Cotton:			
Sea-island, bales	pounds	4,725,355	2,991,488
Upland, bales	pounds	781,866,260	62,967,035
Cotton, manufactures of			5,394,237
Rosin	barrels	470,610	1,844,584
Turpentine	barrels	5,936	21,234
Spirits turpentine	gallons	2,623,374	1,298,208
Tar and pitch	barrels	22,258	87,751
Oil cake	pounds	132,418,600	3,634,363
Provisions and tallow:			
Beef	pounds	21,560,911	2,543,906
Butter	pounds	1,385,299	476,989
Cheese	pounds	42,084,384	6,137,132
Fish, fresh			56,765
Fish, dried and smoked	cwt.	105,839	487,671
Fish, pickled	barrels	21,051	170,667
Fish, other cured			216,685
Ham and bacon	pounds	41,031,444	5,625,345
Lard	pounds	50,122,144	8,263,097
Pork	pounds	27,250,976	3,379,530
Tallow	pounds	17,334,417	1,986,037
Vegetables, fresh or preserved			208,726
Tobacco:			
Leaf	pounds	146,014,190	17,565,966
Cigars	M	627	23,562
Snuff	pounds	30,607	20,276
Other manufactures			2,979,271
Wood and manufactures of:			
Boards, clapboards, deals, planks, joists, and scantling	M feet	117,361	2,479,198
Laths, palings, pickets, curtain sticks, broom handles, and bed slats	M	5,087	13,251
Shingles	M	30,770	133,002
Box shooks	M		754,395
Other shooks, and staves and headings			6,135,498
All other lumber			1,202,406
Firewood	cords	8,087	19,786
Hop, hoop, telegraph, and other poles			640,002
Logs, masts, spars, and other whole timber			277,417
Timber, sawed and hewn	M feet	53,648	994,680
All other timber			76,355
Household furniture			1,132,422

Exports of certain products of agriculture, &c.—Continued.

Article.	Quantity.	Value.
Wood and manufactures of:		
Boxes, coopered ware, and turnery		$346,920
All other manufactures of wood not specified		1,209,955
Wool, raw and fleece.....pounds	512,186	175,426
Wool, manufactures of		220,562

LIVE STOCK AT CHICAGO.

A statement furnished by Geo. T. Williams, assistant secretary, of the receipts and shipments of live stock at the Union Stock Yards, Chicago, for each month of the first quarter of 1869, presents the following totals:

RECEIPTS.

Source of supply.	Cattle.	Hogs.	Sheep.	Horses.
Illinois Central railroad	17,339	58,139	32,693	156
Chicago and Rock Island railroad	11,776	39,320	7,682	15
Michigan Central railroad	535	2,276	1,855	33
Pittsburg, Fort Wayne, and Chicago railroad	22	446	178	89
Columbus, Chicago, and Indiana Central railroad	277	502	749	8
Chicago and Alton railroad	12,956	26,878	20,616	.....
Chicago, Burlington, and Quincy railroad	20,712	101,033	24,795	79
Chicago and Northwestern railroad	16,226	39,618	16,423	53
Michigan Southern railroad	394	2,184	3,781	39
Driven into yards	84	204	.....	.....
Total	80,331	270,600	108,772	472

SHIPMENTS.

Illinois Central railroad	1,897	242	.....	46
Chicago and Rock Island railroad	382	290	.....	45
Michigan Central railroad	12,691	2,532	26,005	23
Pittsburg, Fort Wayne, and Chicago railroad	18,811	89,956	11,168	34
Columbus, Chicago, and Indiana Central railroad	1,872	1,220	.....	.....
Chicago and Alton railroad	603	3	.....	.....
Chicago, Burlington, and Quincy railroad	1,293	318	211	6
Chicago and Northwestern railroad	306	375	264	309
Michigan Southern railroad	17,592	51,462	14,511	62
Total	55,447	146,398	52,159	525

BRITISH WHEAT IMPORTS.

The imports of wheat into the United Kingdom of Great Britain for January, February, and March of the years named are as follows:

Sources of supply.	1868.	1869.
	Cwts.	Cwts.
Russia	2,375,473	2,565,526
Denmark	127,958	115,730
Prussia	604,139	915,376
Schleswig Holstein, and Lauenburg	25,192	19,519
Mecklenburg	118,717	80,639
Hanse Towns	227,292	272,655
France	11,122	94,300
Illyria, Croatia, and Dalmatia	407,168	212,380
Turkey and Wallachia and Moldavia	945,978	359,086
Egypt	1,241,382	200,135
United States	1,868,119	1,971,265
Chili	74,371	82,964
British North America	87,075	32,841
Other countries	351,535	113,509
Total	8,465,521	7,033,015

BRITISH WOOL IMPORTS.

The imports of wool into the United Kingdom of Great Britain for January, February, and March of the years named are as follows:

Sources of supply.	1868.	1869.
	Pounds.	Pounds.
Europe	1,410,705	3,073,607
British Possessions in South Africa	5,087,928	6,504,193
British India	3,126,123	1,967,082
Australia	11,454,298	34,546,516
Other countries	2,581,452	3,484,236
Total	23,660,506	51,575,634

ITEMS FROM VARIOUS SOURCES.

William Grange, Turkish consul at Baltimore, in a recent note states that his endeavors to bring the subject of the Ramie plant (*Boehmeria tenacissima*) before the public and governments of Europe have resulted in many experimental orders for the same, of from 100 to 200 plants each, from the French and other governments. The Egyptian government proposes to send for 2,000 plants. A parcel of the raw material from Shanghae sold last month at Liverpool for £60 per ton, which is an advance of £5 to £10 on former rates. The lint of this plant grown in the United States is reported to be much superior to the genuine China, for strength, brilliancy, &c.

The amount of logs cut on the St. Croix, in Minnesota and Wisconsin, the past season, is estimated as follows for the different streams:

	Feet.		Feet.
Beaver brook	18,700,000	Clam river	3,300,000
Apple river	27,750,000	Wood river	6,000,000
Main St. Croix	7,800,000	Namakagon river	25,500,000
Kettle river	21,000,000	Totogatic river	20,200,000
Sand creek	3,000,000		
Snake river	38,400,000	Total	189,400,000
Yellow river	17,750,000		

California contains 120,947,841 acres of land, of which it is estimated 89,000,000 can be devoted to profitable husbandry.

There were sold at the land office at Visalia, Tulare county, California, during March, over 240,000 acres of government land; a large portion of which lies on the west and southwest of Lake Tulare. Several large tracts along the San Joaquin have also been taken up.

The Santa Clara News says that there are now under cultivation in that neighborhood 700 acres of strawberry plants, which are expected to yield 4,200,000 pounds of berries this season. Many patches last season averaged 7,000 pounds to the acre. The crop this year is estimated to be worth $500,000 to $700,000.

It is stated that 200,000 olive cuttings have been set out in Santa Barbara county, California, this season. The demand for cuttings has been greater than the supply of the better class of olive.

An experiment in silk culture in Nevada county, California, realized, from the silk-worm eggs produced last season from their mulberry trees three years old, $303. Expenses for planting and cultivating the trees and feeding the worms $25—leaving a profit of $278.

Several hundreds of Japanese, in families, are settling in California, with the design of cultivating tea and silk, and lands are being purchased for their purposes. They bring with them 50,000 trees of the *Morus alba* three years old. This is said to be the most tender leaf of all the mulberries, and makes the best silk in Japan. They also bring a great number of bamboo plants, useful for many purposes; 500 vegetable wax trees, four feet high and three years old; and 6,000,000 of tea nuts or seeds. There is likely to follow a large Japanese emigration.

The silk-worm industry is being prosecuted with vigor in California. Sufficient worms will be hatched to use all the available food, and the want of mulberry plantations is said to be the only reason that they will not this year be able to furnish sufficient eggs to supply half the demand of Italy.

J. J. Sigrist, of Napa, California, has shipped 20,000 gallons of wine and brandy, the product of his vineyard.

METEOROLOGY.

COMPILED IN THE DEPARTMENT OF AGRICULTURE FROM REPORTS BY OBSERVERS FOR THE SMITHSONIAN INSTITUTION.

Tables showing the highest and lowest range of the thermometer, (with dates prefixed,) the mean temperature, and amount of rain and melted snow, (in inches and tenths,) for April and May, 1869, at the stations named. Daily observations at 7 a. m., and at 2 and 9 p. m.

States and stations.	April, 1869.						May, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall
MAINE.		°		°	°	*In.*		°		°	°	*In.*
Houlton	17, 30	65	5	21	40. 4	1. 50	25	84	1	26	54. 5	1. 20
Steuben	27	59	5	29	40. 7	5. 44	26	73	1	33	49. 4	3. 65
Williamsburg	28	54	5	18	37. 1	2. 78	25	80	1	28	50. 1	2. 95
West Waterville	28	62	4	26	42. 5	2. 73	28	53	4	34	54. 2	4. 56
Gardiner	28	61	4	29	42. 6	3. 05	26	73	2	37	53. 0	4. 52
Standish	17, 28	63	4	25	41. 9	1. 97	12	68	2	34	54. 7	6. 99
Norway	27, 28	61	5	25	40. 9	3. 75	25	84	2	34	53. 6	4. 65
Rumford Point	17	62	5	20	41. 3	1. 05	.....	.....	.....	.....	.....	.....
Cornish	27	64	4	23	41. 8	1. 81	25	83	1, 2	34	53. 8	4. 09
Cornishville	27, 28	63	5	20	41. 5	1. 57	12, 25	84	2	34	55. 7	5. 11
Averages	.....	.....	.....	.....	41. 1	2. 57	.....	.....	.....	.....	53. 2	4. 52
NEW HAMPSHIRE.												
Stratford	20	67	4	18	37. 7	2. 48	31	83	1	32	52. 0	3. 97
Shelburne	27, 28	64	12	18	40. 3	.....	.....	.....	.....	.....	.....	.....
Whitefield	.....	.....	.....	.....	.....	.....	25	84	22	41	58. 0	.....
North Barnstead	27	67	3	26	44. 8	1. 22	12	85	2	33	55. 2	3. 19
Concord	.....	.....	.....	.....	.....	.....	12	88	1	34	56. 4	.....
Goffstown	28	74	3, 4, 5	26	42. 8	1. 50	12	87	1, 2	32	53 0	3. 40
Averages	.....	.....	.....	.....	41. 4	1. 73	.....	.....	.....	.....	54. 9	3. 52
VERMONT.												
Lunenburg	20	60	5	20	38. 8	2. 05	31	78	1, 3, 4	34	55. 1	2. 85
North Craftsbury	24	58	4	16	37. 0	2. 48	11	78	2	31	51. 0	2. 77
Randolph	27	68	11	22	40. 4	2. 00	25	86	6	36	54. 8	3. 42
Woodstock	24	64	1	21	39. 7	.....	12	85	1, 2	33	52. 5	.....
Near St. Albans	20	63	4	20	39. 7	.....	25	79	3	30	53. 2	.....
West Charlotte	20	72	4	24	41. 4	3. 60	25	84	1	32	55. 9	6. 34
Middlebury	.....	.....	.....	.....	.....	.....	12	78	2	35	54. 4	1. 31
Panton	.....	.....	.....	.....	.....	.....	25	80	3	36	54. 6	5. 42
Brandon	20	72	1	22	42. 2	2. 27	25	88	2, 3	34	55. 9	3. 99
Averages	.....	.....	.....	.....	39. 9	1. 48	.....	.....	.....	.....	54. 2	3. 73
MASSACHUSETTS.												
Kingston	24	75	4	28	47. 1	1. 38	25, 26	88	2, 6	38	55. 3	4. 24
Topsfield	26	68	3	26	44. 9	1. 49	.....	.....	.....	.....	.....	.....

Table showing the range of the thermometer, &c., for April and May—Continued.

States and stations.	April, 1869.						May, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MASS.—Continued.		°		°	°	*In.*		°		°	°	*In.*
Lawrence	18	68	3	30	43.3	1.80						
Milton	18, 26	74	3	29	48.6	1.79	12, 26	87	2	39	54.4	3.31
Cambridge	25	78	4	28	47.6		12, 25	89	1	37	57.5	
North Billerica	27	71	3	27	45.5		26	87	2	38	56.7	
West Newton	24	78	4	24	48.4		12	96	4	38	58.0	
New Bedford	26	73	4	30	47.3	1.32	26	82	1, 2	41	55.5	5.69
Worcester	19	71	4	26	45.7	2.52	12, 26	80	4	33	56.0	5.77
Mendon	19	74	3, 4	26	45.1	2.81	26	85	1	30	55.5	4.70
Lunenburg	24, 27	70	4	22	45.5	3.95	12	87	2	34	56.3	9.30
Amherst	20	74	4	27	46.5	1.53	12	83	2	35	55.9	5.65
Richmond	26	78	5	20	45.6	5.75	24	87	3, 4, 5	34	57.9	7.85
Williams College	20	74	3	24	39.4	3.16	12	86	2	33	54.2	3.28
Hinsdale	19, 20, 27	72	3, 4	20	43.2	3.40						
Averages					45.6	2.58					61.2	6.22
RHODE ISLAND.												
Newport	26	68	4	31	46.7	1.94	26	71	2	40	54.6	6.04
CONNECTICUT.												
Columbia	19	76	4	26	47.1							
Middletown	27	78	4	27	47.1	1.65	26	85	1	37	56.4	5.90
Waterbury	24	74	1	29	46.7	1.98	26	81	1	35	56.0	5.45
Colebrook	19, 20	76	4	23	43.8	1.73	12	84	1, 2	33	54.0	5.38
Brookfield	19	81	5	28	47.5	2.80	11, 25, 26	80	6	38	57.1	6.00
Averages					46.4	2.04					55.9	5.68
NEW YORK.												
Moriches	26	81	4	28	51.0	3.42	26	85	2	42	58.6	7.82
South Hartford							12	84	2, 3	36	57.9	2.10
Garrison's	19	78	4	31	50.0	1.95	26	86	1, 2	39	54.1	5.00
Throg's Neck	26	77	3, 4	30	49.0		25	85	1, 2	40	57.5	
White Plains	27	74	4	32	48.0		26	83	1	29	56.9	
Deaf and Dumb Ins.	27	76	4	32	50.1	1.57	26	82	1	39	57.8	5.45
Columbia College	19	76	4	33	50.3	1.39	26	85	1, 2	41	58.8	3.32
Flatbush	19	79	4	30	48.0	1.56	26	85	2	36	56.2	3.61
Nyack	27	79	9	36	51.9	9.62	25	83	3	43	60.0	4.42
Newburg	26	79	4	30	50.9	0.92	31	90	2	38	59.5	4.33
Minaville	19	80	1, 4	22	43.5	1.45	12	88	2, 3	35	57.0	3.05
Sloansville	19	80	4	18	41.2	3.41						
Gouverneur	20	75	1, 4	18	40.4	1.18	11	77	1	32	49.9	4.10
North Hammond	20	64	1	18	41.7	0.95	12	80	4	34	56.5	3.85
Houseville	27	74	1	18	39.5	2.69	12	86	1	32	51.8	3.59
Leyden	27	64	1	16	38.2	4.06	12	82	3, 4	30	49.8	3.81
South Trenton	20	68	10	14	38.1	4.91	12	86	21	33	50.3	3.71
Cazenovia	19	76	4	24	42.4		12	83	3, 4	33	52.2	
Oneida	19	78	1, 3	27	43.0	4.34	12	87	3	33	56.0	5.69
Depauville	20	72	1	18	40.6	1.10	12	80	4	33	51.7	4.08
Oswego	20	73	1	23	40.5	2.00	13	77	4	35	50.5	2.08
Palermo	20	73	1	20	40.9	1.70	12	86	3	35	53.8	3.10
North Volney							12	83	2, 3, 4	35	53.6	
Ludlowsville	16	73	4	25	46.8		12	88	4	38	56.5	

Table showing the range of the thermometer, &c., for April and May—Continued.

States and stations.	April, 1869.						May, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
NEW YORK—Con.												
		°		°	°	*In.*		°		°	°	*In.*
Waterburg	19	76	4	22	43.5	.....	12	86	3	32	53.8	.....
Nichols	19	80	4	27	46.2	.....	11	87	2	37	55.7	.....
Newark Valley	19	78	4, 11, 15	24	43.5	2.30	12	89	3	34	54.4	3.50
Himrods	.....	.....	.....	.....	.....	.....	11	82	2	32	53.0	4.50
Rochester	20	74	3	25	43.7	1.47	12	82	2	36	54.9	2.56
Little Genesee	19, 26	74	4	20	42.2	1.55	11, 12	85	5	36	53.5	2.95
Suspension Bridge	19	75	4	22	41.2	.....	12	89	2	34	52.6	.....
Buffalo	23	70	3, 4	25	41.3	1.77	12	82	2, 3, 4	38	52.9	2.18
Averages	.....	.....	.....	.....	44.4	2.15	.....	.....	.....	.....	54.4	3.56
NEW JERSEY.												
Paterson	24, 27	82	4	29	49.8	1.78	25	90	2	40	58.7	5.10
Newark	19	79	4	29	50.5	1.15	26	84	2	38	57.4	4.67
New Brunswick	.....	.....	.....	.....	.....	.....	26	83	2	39	53.8	4.76
Trenton	27	82	4	32	54.4	1.98	26	89	2	42	62.1	7.00
Rio Grande	27	82	4, 12, 14	34	49.2	.....	26	97	8	40	58.1	6.38
Moorestown	19	79	4	31	51.6	2.12	26	85	2	36	58.1	4.65
Newton	19	78	4	29	47.8	1.79	26, 31	83	2	36	56.4	3.57
White House	.....	.....	.....	.....	.....	.....	26	81	4	44	62.0	.....
New Germantown	20	82	5	31	50.3	1.20	26	87	2	33	58.0	4.35
Haddonfield	27	80	4	32	51.5	2.00	31	85	2	42	58.8	3.97
Newfield	27	83	4	30	51.2	.....	31	91	1, 2, 6	43	60.0	.....
Greenwich	27	80	4	32	52.2	1.32	31	85	2	43	59.0	4.39
Vineland	27	90	1, 4	33	53.1	2.57	31	94	2	44	60.7	4.39
Averages	.....	.....	.....	.....	46.4	1.55	.....	.....	.....	.....	58.7	4.54
PENNSYLVANIA.												
Nyces	19, 24, 27	77	1, 4, 12	24	45.8	1.72	25, 26	85	2	32	56.1	5.10
Hamlinton	19	78	4	25	43.7	1.88	31	79	2	24	55.6	6.29
Fallsington	19	79	4	29	48.7	1.40	26	86	2	40	59.7	6.70
Philadelphia	19, 27	79	4	34	53.1	1.82	.....	.....	.....	.....	.....	.....
Germantown	20, 27	84	4	29	52.4	.....	31	93	1	40	61.6	.....
Horsham	27	79	4	31	51.3	2.12	26, 31	83	2	40	58.7	4.90
Plymouth Meeting	19	82	4	31	51.2	1.17	26	86	2	40	58.7	4.23
Dyberry	19	75	15	20	43.6	1.87	12	83	6	36	58.7	4.22
Whitehall	19	80	4	24	49.4	.....	12	84	6	34	52.5	2.22
Factoryville	19	78	4	26	44.6	2.57	26	85	3	36	57.8	.....
Reading	19, 27	82	4	31	52.9	.....	26	89	2	34	54.3	4.15
Parkerville	19	80	4	29	50.8	2.44	31	88	5	41	58.8	.....
West Chester	19	80	4	29	50.3	2.90	26	87	2	40	59.1	3.97
Phœnixville	27	80	12	30	50.7	1.00	26	88	2	40	58.5	4.53
Ephrata	19	84	5, 15	32	54.4	2.82	26	88	2	39	58.7	4.20
Silver Spring	.....	.....	.....	.....	.....	.....	31	90	4	39	62.3	4.16
Mount Joy	19	82	12	29	52.8	.....	31	90	2	38	60.0	.....
Harrisburg	27, 28	76	4	32	50.1	1.68	30, 31	86	5	41	59.7	.....
Carlisle	19	86	4, 15	32	51.5	1.80	26	87	2	41	60.6	4.04
Fountaindale	19	78	3, 4, 11	32	51.6	1.77	12, 31	90	2	41	60.6	5.50
Tioga	18	76	10	16	38.8	1.95	31	84	2	40	58.4	4.40
Williamsport	19	78	4, 5	29	48.3	.....	12, 27	84	8	30	50.3	4.50
							31	80	5	40	58.8	.....

Table showing the range of the thermometer, &c., for April and May—Continued.

States and stations.	APRIL, 1869.						MAY, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
PENN'A—Con'd.		°		°	°	*In.*		°		°	°	*In.*
Lewisburg	19	82	4	28	49.2	2.56	26	85	2	40	57.6	4.07
Ickesburg	19	85	3	29	49.6	2.79						
Grampian Hills	19, 28	72	3, 4, 15	20	41.6	3.08	26	82	3	33	51.7	5.18
Johnstown	28	76	14, 15	29	45.0	4.17	31	86	3	30	53.0	8.34
Franklin	19	74	15	22	45.1	1.57	12	86	5	36	56.7	5.08
Connellsville	23	81	4	22	47.9		12	86	2, 3	38	58.1	
New Castle	19	76	4	22	48.6		31	81	3	34	60.1	
Beaver	28	79	3, 4	32	48.8	1.00	11, 12, 29	82	2	43	59.3	4.40
Canonsburg	26	80	4, 13	24	49.3	0.89	11, 25	84	2, 3	42	59.0	5.67
Averages					48.7	2.04					57.8	4.84
MARYLAND.												
Woodlawn	28	80	4	30	52.5	1.94	26	92	2	40	59.8	5.08
Annapolis	19, 28	80	12	33	55.4	2.80	31	90	2	45	62.6	5.57
St. Inigoes	20, 27	76	11	32	55.8	3.85						
Frederick	28	83	5, 12	35	56.3	1.58	31	86	2	46	65.4	3.69
Emmittsburg	27	84	11	29	52.4							
Mt. St. Mary's	27	78	11	31	51.0	2.53	31	82	2	41	58.4	5.37
Averages					53.9	2.54					61.6	4.93
DIST. OF COLUMBIA.												
Washington	28	77	11	34	53.6	2.08						
VIRGINIA.												
Johnsontown	27	80	11	35	54.1	1.10	30	87	7, 8	47	56.8	4.70
Hampton	23	86	5	33	56.1	1.50	29	96	7	47	63.8	4.70
Zuni Station	19, 23	82	15	32	57.5	1.65	30	94	8	46	63.6	5.35
Bacon's Castle	27	91	12	36	58.6		31	96	7	47	65.8	
Comorn	23	82	12	33	56.6	2.20	31	90	2, 7	46	62.7	3.44
Mt. Solon	22	82	12	20	53.6	2.25						
Staunton	23	79	12	29	51.8	1.71	27, 30, 31	84	7	39	60.5	4.07
Lexington	23	87	12	32	56.7	3.42	27, 31	92	7	43	62.6	4.94
Lynchburg	23	77	4	32	55.7		30	84	7	46	59.9	
Snowville	23	81	15	22	50.6	7.50	29	89	10	39	58.0	17.40?
Wytheville	23	78	4, 15	28	51.7	1.95	27	84	9	40	57.0	4.40
Do	22, 23	80	15	26	55.5	1.29	29	85	3	41	58.9	4.02
Averages					54.9	2.46					60.9	5.89
WEST VIRGINIA.												
Romney	23	90	12, 15	28	51.4		31	94	2, 3, 7, 8	42	62.5	
Cabell C. H.	20	74	14	28	51.3	1.90	26	79	2	38	58.2	2.00
Averages					51.4	1.90					60.4	2.00
NORTH CAROLINA.												
Kenansville	23	91	5	32	64.3	5.70	26	94	8	41	68.2	6.15
Goldsboro	27, 28	90	12	34	62.4	1.37	31	96	3, 8	48	68.1	4.22
Raleigh	23	90	13, 15	32	60.3	2.40	31	97	6, 8	48	64.7	3.80
Oxford	27	87	4	32	60.3	1.45	29, 30, 31	94	3	48	66.8	4.00
Trinity College	18	85	14, 15	32	57.6	1.98	29	92	7	42	67.2	6.99
Albemarle	23	87	15	23	57.7	2.92	27	93	4	32	61.9	3.51

Table showing the range of the thermometer, &c., for April and May—Continued.

States and stations.	APRIL, 1869.						MAY, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
N. CAROLINA—Con.		°		°	°	*In.*		°		°	°	*In.*
Statesville	23	84	5	24	55.7	3.25	27, 29, 30	90	3, 4, 8	36	55.4	4.13
Asheville	22	76	4, 5	30	53.9	3.60	26	83	2	43	60.0	3.85
Do	1, 9, 23, 23, 23	76	4, 15	28	54.2	.....	11, 26, 30	78	8	33	58.7	.....
Chapel Hill	23, 29	86	12	36	62.8	.....	27, 29, 30, 31	92	3, 7	49	67.4	.....
Averages					58.9	2.96					63.8	4.58
SOUTH CAROLINA.												
Aiken	1, 29	84	5	34	62.4	1.69	31	91	3	48	67.8	1.19
Gowdysville	9	84	5	34	62.9	5.05	.....	.....	.....	.....	.....	.....
Camden	29	88	5	28	59.2	2.21	.....	.....	.....	.....	.....	.....
Averages					61.5	2.98					67.8	1.19
GEORGIA.												
Atlanta	23	85	14	29	59.0	8.67	29	94	3, 4	44	64.0	1.75
Macon	26	86	5, 14	36	62.5	4.90	29, 30, 31	89	8, 9	51	67.5	3.60
Do	9	87	5, 14	38	61.3	5.52	.....	.....	.....	.....	.....	.....
Berne	24	83	5, 14	38	63.2	4.00	31	95	2	53	70.0	2.21
Penfield	1, 25	84	14	36	61.5	2.75	30, 31	90	2	51	67.4	3.12
Averages					62.1	5.17					67.2	2.67
ALABAMA.												
Opelika	25	88	3, 4, 5	42	65.1	.....	29	92	8	52	69.0	1.81
Carlowville	25	85	3	40	65.3	10.50	31	95	3	54	72.6	1.36
Moulton	9	79	14	34	60.4	5.55	.....	.....	.....	.....	.....	.....
Green Springs	10, 22	83	3, 14	33	61.1	8.92	.....	.....	.....	.....	.....	.....
Havana	25	84	3, 5, 14	38	61.5	8.60	29, 31	86	2, 3	50	67.6	1.90
Averages					62.7	8.39					69.7	1.69
FLORIDA.												
Port Orange	30	91	14	48	68.0	.....	.....	.....	.....	.....	.....	.....
Jacksonville	1	91	5	43	67.5	4.25	31	92	8	58	73.4	0.87
Pilatka	27	96	14	45	68.9	1.84	.....	.....	.....	.....	.....	.....
Ocala	30	92	4	44	68.9	.....	31	96	4, 5	50	72.0	.....
Manatie	23	90	14	54	71.6	4.00	30, 31	90	9	62	76.0	1.40
Chattahoochie	23	87	14	45	.....	.....	31	93	2	57	72.8	.....
Averages					69.0	3.36					72.1	1.11
TEXAS.												
Gilmer	22	86	3	38	65.1	5.77	.....	.....	.....	.....	.....	.....
Houston	18	88	3	48	68.6	.....	.....	.....	.....	.....	.....	.....
Columbia	29	90	3	41	68.5	2.37	29	93	2	53	74.3	3.66
Blue Branch	19	87	3	36	65.0	3.31	.....	.....	.....	.....	.....	.....
Lavacca	19	86	3	47	66.5	3.16	13	88	1	55	74.5	2.00
Waco	19, 22	92	2	45	66.5	5.10	.....	.....	.....	.....	.....	.....
Austin	19	90	3	45	65.1	3.09	29	88	18	57	72.7	3.85
Clinton	19	88	3	47	67.8	3.53	29	86	1	53	74.2	4.30
Averages					66.6	3.76					73.9	3.45
LOUISIANA.												
Shreveport	8, 21	82	4	40	65.5	.....	29, 30	88	1, 2, 3, 19	50	70.0	.....

Table showing the range of the thermometer, &c., for April and May—Continued.

States and stations.	April, 1869.						May, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MISSISSIPPI.		°		°	°	*In.*		°		°	°	*In.*
Grenada	19, 21	84	4	34	63.5	12.20	29	92	2	46	68.0	3.40
Brookhaven	17, 25	84	3	39	64.4	12.00	31	89	9	51	69.3	1.50
Natchez	19	78	3	40	64.3	9.10	29, 31	83	2	51	71.2	1.37
Marion C. H	25	88	3	30	62.6	12.40	27, 28, 30, 31	92	2	50	73.1	0.80
Averages					63.7	11.43					70.4	1.77
TENNESSEE.												
Elizabethton	23	86	8	28	55.3	3.25	29	90	8	38	61.0	6.80
Tusculum College	23	80	3, 4	33	55.9	3.50	29, 31	85	3, 9	46	63.7	0.70
Lookout Mountain	22, 23	75	13	32	56.5							
Clarksville	9	80	3	31	56.5	5.28	29	85	1	47	63.0	2.47
Trenton	22	83	14	31	60.3	9.00	30	86	8	45	65.4	3.30
Memphis	9	82	4	34	59.8	8.79	29, 30	91	1	48	66.9	1.74
Averages					57.4	5.96					64.0	3.00
KENTUCKY.												
Pine Grove	18	78	4	28	51.9	5.17	29	88	3	42	61.8	3.46
Lexington	18	78	4	26	51.7	6.16						
Danville	22	82	13	32	56.8	4.35						
Louisville	23	78	4, 14	26	51.7	5.80						
Clinton	22, 23	78	3, 13	33	55.6	5.10	29	87	3	43	63.1	1.93
Averages					53.5	5.32					62.5	2.70
OHIO.												
Steubenville	28	75	4	26	51.1	0.79	11, 12	82	3	42	61.0	5.44
Martin's Ferry	28	80	12	26	49.1	1.10						
Painesville	19	71	4	24	44.8	3.53	12	80	2	35	55.8	4.50
Gilmore	28	80	3, 4	28	49.4	1.80	11	80	2	36	59.5	6.20
Cleveland	19	76	4	27	45.8	2.65	11, 12	85	2	37	56.7	3.94
Woos	19	76	4, 12	28	52.5	4.80	26	85	2	40	60.9	5.98
Smithville	26	75	4	29	49.3	1.30	26	88	2	41	59.0	3.09
Kelley's Island	23	68	3, 4	26	45.0	3.22	25, 26	77	2	41	54.1	5.11
Sandusky	19	74	3, 4	27	46.4	3.22	25	82	2	41	57.6	7.99
North Fairfield	19	74	3, 4	26	48.9	1.79	26	82	3	37	57.9	6.61
Carson	19	71	4	28	47.9	1.53	12, 26	80	2	40	57.5	7.83
Westerville	28	75	3, 4	30	49.3	1.96	29	84	2	42	58.8	5.31
New Holland	23	83	14	28	56.1	7.11						
Marion	19, 23	70	4	25	46.8	1.24	26	81	2, 3	40	57.0	8.83
Hillsboro'	18	73	4	25	46.3	3.55	26, 29	80	3	40	59.4	4.31
Toledo	23	78	3, 4	22	45.8	4.99	25	87	3	38	57.4	5.75
Bowling Green	19, 23	81	4	26	47.9	4.72	25	85	2	40	58.8	9.55
Kenton	17	70	4	32	52.1	4.03	31	82	5	41	63.0	16.75
Urbana University	28	77	4	26	48.4	2.43	26	86	2	42	59.1	7.09
Bethel	28	76	4	20	49.6	3.50	29	87	3	39	59.6	4.00
Jacksonburg	27	74	4	26	49.7	4.00	26	84	3	42	60.1	5.34
Mt. Auburn Inst	18	77	3	27	52.8	3.38	26, 30	82	7	43	62.8	4.42
Cincinnati	18, 28	78	3	27	50.9	2.87						
Do	23	81	3, 4, 15	32	55.0	0.93	29	90	2, 21	48	66.8	5.93

Table showing the range of the thermometer, &c., for April and May—Continued.

States and stations.	April, 1869.						May, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
		°		°	°	*In.*		°		°	°	*In.*
Ohio—Continued.												
College Hill	18	80	3, 4, 14	28	48.3	2.89	26	88	3	40	61.4	7.32
Averages					49.2	2.95					59.4	6.49
Michigan.												
Monroe City	19	74	3	28	46.6	2.59	25	86	3	40	57.5	5.61
Alpena	25	52	4	20	36.1	2.18	11	59	2	36	46.0	1.12
State Agri'l College	19	76	3	20	45.7	3.77	25	83	18	41	55.5	2.05
Litchfield	23	74	1	12	44.5	4.52	25	82	2	36	55.7	5.00
Coldwater	19	76	3	25	43.6	2.13	10, 25	82	3	30	54.4	5.19
Old Mission	15	65	1, 2, 3	22	37.7	1.02						
Grand Rapids	19	71	3	21	44.9							
Northport	27	64	2	22	37.9	4.48	24	77	3	37	49.5	3.24
Pleasanton	26	68	1, 3	20	38.9	4.70	25	84	16	36	51.3	2.45
Muskegon	19	68	2	26	45.6	2.25	10, 24, 25	80	3, 17	42	58.5	6.50
Otsego	23, 28	72	1, 2	26	46.3		25	82	19	34	55.4	
Copper Falls	26	66	1	14	32.0	2.83	24	73	6	31	46.4	1.10
Penn Mine	26	72	1	13	34.6		31	74	12, 16, 26	34	48.9	
Ontonagon	25, 26	60	1, 2	24	37.8		23	76	1, 2, 6, 7, 14, 15, 16, 17, 18, 26	40	50.3	
Averages					40.9	3.05					52.5	3.58
Indiana.												
Aurora	18, 23	81	4	26	50.2	3.97						
Vevay	18	76	4, 14	30	51.3	3.94	25	84	2	43	61.2	5.95
Muncie	23	80	4	24	49.3	4.10	26	87	1, 2, 19	42	60.4	7.70
Spiceland	23	76	4	27	48.0	3.80	26	85	1, 2	41	58.9	6.03
Columbia City	23	78	2	28	45.4	5.00	25	86	1, 2, 3, 5, 6, 8, 14	40	54.0	6.13
Jalapa							26	85	1, 2, 7, 18, 19	43	56.8	7.50
Knightstown	23	75	4	26	51.1	3.91	25, 26	84	1	42	59.6	6.98
Indianapolis	23	76	3, 4	28	48.9	4.46	26	83	2	42	59.7	5.49
Cannelton	8	83	2	33	58.8	3.66						
Merom	23	77	4	28	49.4	2.72	26	85	1, 2, 7	43	61.0	4.75
LaFayette	18	74	2, 3, 4	26	48.0	5.10	26	84	3	36	56.9	7.70
Kentland	23	73	2, 3	28	47.7		25	86	18	40	58.1	9.25
New Harmony	18, 22, 23	78	2	34	55.0	3.51	5	87	1	47	64.4	4.80
Harveysburg	18	80	2	28	47.7	6.30	31	90	16	44	63.9	4.40
Averages					46.2	5.00					59.6	6.39
Illinois.												
Chicago	17	72	2	25	37.8	4.30	25	81	2	42	54.6	5.69
Near Chicago	19, 27	70	2	22	43.4		25	84	3	30	51.9	
Evanston	19	70	2	25	45.5	3.62	25	82	6	41	51.8	6.59
Marengo							25	81	7, 8	35	55.3	4.74
Effingham							26	91	1	41	63.6	5.65
Kings Mills	22	68	3	12	43.0	4.33	25	83	7	39	52.9	6.37
Louisville	23	80	3, 4	30	53.7	16.90	26	88	1	44	65.7	5.10

Table showing the range of the thermometer, &c., for April and May—Continued.

States and stations.	April, 1869.						May, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
ILLINOIS—Cont'd.		°		°	°	*In.*		°		°	°	*In.*
Golconda	22	89	6	18	55.5	3.80	30, 31	89	2	42	64.0	2.20
Sandwich	18	74	2, 3	21	44.8	4.53	25	85	2	40	57.1	6.28
Ottawa	18, 22	75	14	14	48.5	4.68	25	88	6, 7	43	60.6	7.45
Belvidere	18, 22	68	2, 4	20	44.5	2.43	25	86	7	42	56.1	4.80
Winnebago	22	68	2	20	43.6	2.76	25	85	6, 7	42	54.8	5.53
Rochelle	22	71	2	16	35.1	.....	25	84	7	40	56.5	.....
Wyanet	28	70	2	21	47.1	3.03	23	87	7	36	58.4	7.78
Tonti wa	22	74	2	22	46.5	.....	25	86	7	40	59.5	.....
Hennepin	22	78	2	22	45.0	.....	4	82	7	36	59.0	.....
Elmira	22	77	2	21	46.1	2.07	26	88	7	40	59.7	5.86
Peoria	28	72	2	25	49.5	3.33	.....	.....	.....	.....	.....	.....
Springfield	18, 28	82	2	26	50.2	.....	28	88	13	34	61.2	.....
Loami	18	83	2, 3	26	50.5	6.75	26	90	1	41	62.0	6.90
Dubois	23, 27	80	4	25	47.9	4.89	26	86	1	40	65.6	3.06
Waterloo	18, 23, 27	30	2, 4, 12	33	50.7	3.65	26	90	1	44	66.3	4.15
South Fass	33	83	2, 3	31	56.3	.....	25, 26	86	1	43	63.6	.....
Lombard Univ'ty	22	77	2	25	49.0	1.01	26	85	2, 17	47	60.2	3.18
Manchester	18	85	2	27	51.3	4.25	25, 26	86	1	43	62.9	4.38
Mount Sterling	22	80	2	26	49.8	.....	25	86	1	43	61.6	.....
Andalusia	17, 28	68	13	27	46.9	.....	26	85	1	42	59.9	.....
Augusta	18	81	3	24	50.6	4.49	25	85	1	45	64.0	5.18
Warsaw	18	80	2	26	50.2	4.80	9, 10, 26	83	1	46	64.2	8.46
Averages	.....	.....	.....	.....	46.1	3.92	.....	.....	.....	.....	59.4	5.48
WISCONSIN.												
Manitowoc	25	67	3	20	40.4	4.07	23	78	7	38	51.2	3.40
Plymouth	15, 17	68	3	14	40.1	3.40	25	88	27	40	53.5	5.50
Hingham	25	69	3	15	39.9	.....	25	85	3	32	52.7	.....
Milwaukee	17	69	3	17	41.8	3.90	23	87	7	36	51.6	4.77
Appleton	17, 26, 28	62	1, 3	22	41.5	.....	10	75	17	42	54.0	.....
Geneva	28	70	5	20	43.2	3.69	25	85	2, 3, 5	40	54.9	7.09
Waupaca	25	70	1	20	42.3	.....	25	85	7, 17, 26, 27	40	55.1	.....
Embarrass	25	66	4	11	39.2	.....	24	80	7	38	52.8	.....
Rocky Run	17	66	3	18	42.9	4.38	.....	.....	.....	.....	.....	.....
Madison	15	63	2	13	36.7	3.08	25	82	7	35	54.6	4.90
Edgerton	25	70	2	16	44.4	3.00	25	90	7	36	58.0	4.50
Baraboo	17	70	3	16	43.2	6.38	25	86	12	42	56.4	4.81
New Lisbon	25	70	3	20	44.5	.....	24	90	15, 17	40	58.2	.....
Bayfield	25	74	2	16	35.7	.....	23	78	6	28	47.4	.....
Averages	.....	.....	.....	.....	41.1	3.99	.....	.....	.....	.....	53.9	5.00
MINNESOTA.												
Beaver Bay	25	74	3	15	37.5	1.70	.....	.....	.....	.....	.....	.....
Alton	25	69	2, 3	12	40.5	1.00	4, 25	88	12	38	56.5	4.25
St. Paul	25	68	2	13	41.0	0.56	9	92	12	42	57.7	2.34
Minneapolis	25	69	2	12	40.5	1.01	.....	.....	.....	.....	.....	.....
Sibley	17, 28	64	2	7	40.0	1.05	4	88	14	39	56.7	1.36
Kenkia	25	64	2	10	41.6	2.46	20	93	2	32	55.6	2.15
New Ulm	17	68	2	17	42.6	0.73	4	89	12	42	59.4	1.35
Madelia	22	70	2, 3	12	42.2	1.73	4	90	12	42	60.8	2.25
Averages	.....	.....	.....	.....	40.7	1.32	.....	.....	.....	.....	57.8	2.28

Table showing the range of the thermometer, &c., for April and May—Continued.

States and stations.	April, 1869.						May, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
IOWA.		°		°	°	*In.*		°		°	°	*In.*
Clinton	22	73	2	20	45.7	4.16	25	86	18,19,20	44	57.6	3.50
Waukon	17	67	2	14	42.2	.....	25	84	12	42	57.7	.....
Dubuque	18,22	69	2	19	45.8	2.75	10,25	82	17	42	59.4	4.40
Monticello	22	73	1	22	45.4	1.90	25	83	1	45	58.9	5.55
Bowen's Prairie	22	76	2	18	44.7	3.77	.....	.....	.....	.....	.....	.....
Fort Madison	18,22	80	4	23	48.3	3.36	9	88	7,8	41	61.6	4.73
Guttenberg	17,22	70	2,3	16	43.2	.....	25	88	2,3,17	40	57.3	.....
Mount Vernon	22	76	2	21	45.7	.....	25	85	14	44	58.5	.....
Iowa City	18	80	2	20	47.1	3.20	4,25	82	7,18	40	60.0	4.06
Independence	18	76	2	17	44.5	2.60	4	88	16	44	59.8	4.20
Near Independence	18	78	2	16	43.1	3.90	25	88	18	41	56.5	3.70
Waterloo	22	73	2	16	40.6	.....	4	86	6	43	60.0	4.15
Vinton	18	76	.....	.....	.....	.....	25	85	1,2,12	41	61.0	4.40
Rockford	18	74	2	14	45.6	.....	4,25	84	14,17	40	57.8	.....
Iowa Falls	18	76	2	20	42.7	3.05	.....	.....	.....	.....	.....	.....
Algona	18	72	2	24	42.3	.....	4	86	13	40	57.6	.....
Near Algona	18	72	2	17	42.0	.....	.....	.....	.....	.....	.....	.....
Mineral Ridge	18	77	1,2,3,12	26	45.1	2.45	.....	.....	.....	.....	.....	.....
Rolfe	18	77	2	19	45.4	1.13	.....	.....	.....	.....	.....	.....
Fontenelle	17	81	2	24	46.9	2.33	4	91	9,12,15	42	60.8	6.63
Grant City	18	82	2	26	45.8	1.58	4	93	12,18	42	61.3	6.12
Logan	18	76	2	14	45.1	1.10	4	92	2	33	58.0	3.50
Woodbine	18	79	2	20	44.9	.....	4	90	1	40	59.7	.....
Averages	.....	.....	.....	.....	44.7	2.66	.....	.....	.....	.....	59.1	4.58
MISSOURI.												
St. Louis Univ'ty	18,22	80	2	31	55.0	2.87	26	89	1	44	65.0	3.34
Allentown	18,22	85	4	26	54.3	6.08	25	91	1,19	44	63.1	3.71
Hematite	18	82	4	24	55.7	2.80	5,26	89	3	43	65.4	3.95
Rolla	18	85	4	23	53.5	4.31	4,5	86	3	39	61.2	5.66
Jefferson City	18,22	80	2,3	30	54.0	.....	26,27	86	1,8	44	65.0	.....
Keytesville	.....	.....	.....	.....	.....	.....	25,26	84	1,12,13	45	62.2	4.65
Hermitage	8,18	82	3	20	52.9	1.88	26	88	7,17	41	61.5	6.42
Bolivar	9,13	82	2	32	57.9	3.65	5,26, 27,29	83	1	46	66.0	4.30
Warrensburg	18	83	1,3	32	54.2	2.60	4,5	90	13	45	66.1	4.31
Harrisonville	8	80	2	26	52.4	4.72	5,25	84	13	42	63.1	3.24
St. Joseph	18	84	1,3	33	56.0	4.00	4	86	1,13	46	63.1	5.85
Oregon	16	82	3	21	49.6	3.31	4	88	13	42	61.4	4.42
Averages	.....	.....	.....	.....	54.1	3.62	.....	.....	.....	.....	63.6	4.53
KANSAS.												
Atchison	18	84	3	23	51.7	4.20	4,25	88	13,17	44	62.4	4.60
Leavenworth	18	80	2	19	51.5	3.54	.....	.....	.....	.....	.....	.....
Olathe	18	84	2	25	51.0	5.00	4	86	13	42	63.6	5.60
Paola	.....	.....	.....	.....	.....	.....	26	87	13	44	64.5	3.46
Baxter Spring	18	86	2	32	58.2	2.60	25	90	13	46	68.2	6.00
Lawrence	18	83	2	22	49.4	2.43	4	84	13	40	59.9	3.64
Holton	21	80	3	23	51.2	.....	25	87	8	40	61.2	.....
Le Roy	9,18	90	13	20	55.2	2.60	4	93	19	38	64.1	8.11
Neosho Falls	8,18	84	2	23	52.0	1.70	4	89	13	41	60.4	3.86

Table showing the range of the thermometer, &c., for April and May—Continued.

States and stations.	APRIL, 1869.						MAY, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
KANSAS—Contin'd.		°		°	°	*In.*		°		°	°	*In.*
State Agr. College	18, 21	77	2	22	47.4	2.20	4	88	13	43	58.0	1.12
Council Grove	18	89	2, 4	26	53.3	4.40	4	91	13	47	64.4	3.85
Averages					52.1	3.19					62.7	4.46
NEBRASKA.												
Dakota	17, 22	74	3	24	45.5	.....	4	89	12, 13	46	63.8	.....
Omaha Mission	16, 17	70	2	19	49.2	2.90	4	91	3, 4	40	66.0	2.00
Elkhorn	14	76	2	19	47.3	.....	4	90	13	43	60.8	.....
De Soto	18	76	2	19	46.2	1.64	4	89	13	41	59.9	3.29
Fontanelle	18	85	1	22	47.5	.....	4	96	12	43	61.3	.....
Bellevue	14	81	2	25	50.3	1.70	4	91	13	45	62.3	4.50
Glendale	14	80	2, 3	25	50.2	2.45	4	92	2	40	60.6	6.55
Nebraska City	8	77	2, 3	28	53.3	3.05	4, 9, 25	80	13	42	60.8	4.50
Decatur	14	79	1	24	47.3	1.09	4	93	13	42	61.7	3.24
Averages					48.5	2.14					61.9	4.02
UTAH.												
Coalville	13	68	2	23	43.1	.....	19	86	26	39	57.6	.....
CALIFORNIA.												
Monterey	27	78	1	40	58.0	0.94	11	80	1	44	58.9	1.09
Watsonville	12, 23	83	22	42	61.4	2.30	10	86	2	50	63.0	0.20
Vacaville	.....	.....	.....	29	62.1	2.08	31	99	22	52	66.3	0.34
Averages	.....	.....	.....	.....	60.5	1.77	.....	.....	.....	.....	62.7	0.54
MONTANA TER'TY.												
Fort Benton	30	81	3	28	53.1	2.95	.....	.....	.....	.....	.....	.....
WASHINGTON TER.												
Port Angelos	6, 8	58	8	45	51.0	5.64	.....	.....	.....	.....	.....	.....

NOTES ON THE WEATHER FOR APRIL, 1869.

[To avoid frequent notices of auroras in these pages it may be stated that the aurora of the 2d, so very bright in the northwestern States and in Missouri, is not named south and east of those States except at one point in Maryland and one in Virginia. That of the 15th, so bright in the eastern and middle States, and in Ohio, Indiana, Missouri, and Nebraska, was not noticed in the northwest, where it was probably hidden by clouds. That of the 16th was bright nearly all over the north, and in Virginia. None of these were noticed south of Virginia and Tennessee, except in Macon, Georgia.]

Houlton, Me.—Magnificent aurora 22d and 23d, covered northern sky, and beams from south lit up that horizon; colors, white, pink, red and purple; auroras 29th, 30th; frost gone 30th.

Steuben, Me.—Auroras 1st, 7th, 10th, 14th, 28th—that of 14th was from south to zenith, spread northward till the sky was one blaze of changing forms and hues, fading to whitish rays in north at 9 p. m. Winter snow fall 97.31 inches in 45 snows.

West Waterville, Me.—Sparrows 7th; auroras 15th, 16th; frogs 26th.

Gardiner, Me.—Very bright auroras 5th, 9th, 15th, 16th—common auroras 6th, 7th, 10th, 11th. April average heat for 33 years, 41.49°.

Standish, Me.—Auroras 4th, 5th, 6th, 9th, 10th, 11th, 15th; bees flying 17th; thunder 19th; plowing 26th.

Cornish, Me.—Robins 1st; bluebirds 5th; pewees 7th; larks 10th; swallows 24th; frogs and snakes 27th; martins 28th.

Cornishville, Me.—April average for 40 years, 39°.

Antrim, N. H.—April generally pleasant; run of maple sap good.

Stratford, N. H.—Robins 12th; thunder shower from west, in a. m. 24th; snow yet four feet deep on the mountains.

Shelburne, N. H.—Aurora 15th, red in northwest, purple north, cloudy south; sleighing for 160 days; entire snow fall 124.5 inches.

North Barnstead, N. H.—Bluebirds 6th; aurora 15th, all night.

Goffstown Center, N. H.—Month dry; melting snows raised the Merrimac river higher than since 1812; little damage done.

Lunenburg, Vt.—Auroras 6th, 15th; spring very backward—mud deep—waters higher than since 1851.

North Craftsbury, Vt.—Auroras 10th, 11th, 16th, (very bright,) 12th, 15th, (remarkably brilliant, covering the sky,) 28th, 29th, (faint;) bluebirds 14th; swallows 21st; frogs 26th; greatest freshet in 40 years, 16th to 24th; winter snow fall 157.64 inches; vegetation 10 days earlier than in 1868.

West Charlotte, Vt.—Auroras 7th, (bright at midnight,) 17th, a. m., (red,) 29th and 30th, (both crimson;) liverwort blossomed 25th; water in Lake Champlain higher than ever known, 25th to 30th; grain sowed 30th.

Kingston, Mass.—Dandelion 6th; auroras 15th, 16th; thunder shower 25th; winter snow fall three feet—preceding winter 94 inches.

Milton, Mass.—Earthquake 2.35 p. m. 22d, lasting 2½ seconds; felt through Norfolk county and parts of Plymouth.

West Newton, Mass.—Aurora 15th, changing from crimson to green and purple, flashing from all points to zenith, where it appeared like a cloud agitated by winds.

New Bedford, Mass.—Heavy snow squalls 4th; oriole 7th; dandelion in bloom 25th; lilac buds opening 28th.

Worcester, Mass.—Blackbirds 1st; auroras 5th, 8th, 11th, 15th; arbutus 9th; dandelion 11th; rain and snow 29th.

Lunenburg, Mass.—No snow in April; ground dry; season forward.

Amherst, Mass.—Bright aurora 16th, forming corona at magnetic zenith, and flashing various colors all over the sky; snow gone 20th.

Williamstown, Mass.—Arbutus 18th; hepatica 20th; much snow yet on the mountains, 30th.

Newport, R. I.—Snow squalls 4th, 13th, 14th; aurora 15th.

Columbia, Ct.—Thunder showers 7th, 24th; aurora 15th.

Middletown, Ct.—Thunder 24th; thunder shower with some hail 25th.

Waterbury, Ct.—Auroras 5th, 6th, 10th, 15th; lightning 19th, with thunder 24th; thunder-shower 27th; frost and ice 30th.

Colebrook, Ct.—Snow squalls 4th, 8th, 13th, 14th; arbutus 24th.

Brookfield, Ct.—Thunder shower 7th; the telegraph wires were affected six hours in advance of the aurora of the 15th.

Moriches, N. Y.—Luminous north, as if auroras were appearing, 9th, 10th, 11th; thunder showers 19th, 27th; martin 22d; white frost 30th.

Garrison's, N. Y.—Mild, dry month; farm work 12 days early.

New York, N. Y.—Thunder and hail 7th; lightning and thunder 27th.

Minaville, N. Y.—Grain sowing 19th; light thunder showers 19th, 20th; frost and ice 30th.

North Hammond, N. Y.—April came in cold; sugar season begun 7th; thunder showers 19th, 23d; St. Lawrence navigation open 25th.

Houseville, N. Y.—Robins 1st; auroras 7th, 10th, 11th, 13th, 16th; thunder-storm 19th; great freshet in Black river 19th to 23d.

Leyden, N. Y.—Auroras, (faint,) 6th, 11th, 17th, (bright,) 7th, 10th, 16th, the latter very bright, covering the northern heavens. On the 22d, Black river five feet higher than ever known; destroyed mills, factories, dams, &c., worth over $1,000,000.

South Trenton, N. Y.—All the birds have come except swallows.

Cazenovia, N. Y.—Auroras 7th, 14th; thunder-storm 19th; frosts 23d, 30th.

Depauville, N. Y.—Auroras 6th, 7th, 8th, 10th, 11th, 12th, 13th; last sleighing 13th, (126 days in all;) grain sowing 26th.

Ludlowville, N. Y.—Auroras 7th, 11th, 15th; spots on sun visible through smoked glass about the middle of the month.

Waterbury, N. Y.—Auroras (low in N.) 7th, 10th, (very bright,) 11th, 15th, (common,) 16th; thunder-showers S. 19th, 27th.

Tioga, N. Y.—Snow squalls 3d, 4th, 13th; auroras 15th, 16th.

Newark Valley, N. Y.—Much maple sugar made by 19th; late spring.

Buffalo, N. Y.—Frost, ice, a. m., rain, hail, p. m., 1st; snow 2d, 3d, 4th, 6th, 7th, 12th. 13th; thunder-shower 19th; ice yet in harbor 30th.

Paterson, N. J.—Aurora, 7th class, 15th; the corona here was 22° south of zenith; in New York, said to be in zenith, making it about 45 miles above the earth.

Newark, N. J.—Frequent frosts until aurora of 15th, when temperature increased rapidly for several days; month dry, dusty, and blustery; season 10 days earlier than last year; the aurora of 15th worthy to be classed with those of August 28th and September 1st, 1859, (but not equal to first-named,) and September 3d and 29th, 1851; February 18th and 19th, 1852; and August 4th, 1862; all brilliantly beautiful and grand.

Newton, N. J.—Auroras 5th, 7th, 8th, 9th, 15th 16th; oats sown 8th.

Philadelphia, Pa.—Aurora, 9 to 11.30 p. m., 15th; rays radiated from zenith, south 45°, with flashes or waves of light, and north to within 25° of horizon, frequently appearing like an immense curtain waving in the wind.

Dyberry, Pa.—Snow and rain squalls 6th, 7th, 8th; yellow violets 18th; swallows 23d.

Whitehall, Pa.—Squalls, snow, and rain 2d, 3d, 4th; first swallows 24th; peaches blossom 28th; plums and cherries 30th.

Factoryville, Pa.—Thunder-storm in north, 27th; the first half of month cold; last half very mild.

Parkesburg, Pa.—Corn planted 17th to 20th; showers and large hail 29th; early April was windy and dry.

Phœnixville, Pa.—Toad 2d; peach, pear, and cherry in full bloom 25th; April dry and warm.

Carlisle, Pa.—Oat sowing 2d to 10th; corn planted 26th.

Fountain Dale, Pa.—Peaches blossomed 16th to 22d; apples 24th to 30th; cherries, pears 24th to 27th; first thunder-storm 28th; month dry and warm; vegetation 10 days earlier than usual.

Tioga, Pa.—Unusually cold till 17th; thunder and hail 27th; grain mostly sowed 30th; last half of April favorable for farmers.

Ickesburg, Pa.—Frequent freezing till 15th; auroras 15th, 16th; first frost and ice since 15th on 30th.

Grampian Hills, Pa.—Cold and wet 1st to 8th; plowing 9th; snow 13th; oat sowing 25th.

Johnstown, Pa.—Cherries blossomed 26th; peaches 29th.

Franklin, Pa.—Frogs 15th; thunder-showers 18th; heavy frost 30th.

Connellsville, Pa.—Snow 7th, 12th; whippoorwill 19th; thunder 28th.

Beaver, Pa.—Frosts 13th, 14th, 26th; thunder-showers 20th, 28th.

Woodlawn, Md.—Ice 8th and frost 9th, mornings; auroras 5th, 15th, 16th; peach and cherry bloom 19th; apple 27th; whippoorwill and swallow returned 10 days earlier than last year.

Mount St. Mary's, Md.—Auroras 2d, 15th; frosts 14th, 15th, 30th.

Johnstown, Va.—Cherry and plum in bloom 6th; aurora 16th; whippoorwill 24th; April very dry.

Zuni Station, Va.—Bright auroras 1st, 15th; only one entirely clear day in April, and yet but little rain.

Bacon's Castle, Va.—Rain, hail, snow 11th; 9th to 15th cold; martins and humming birds 20th; the freeze of 14th killed much fruit; very dry at close of month.

Comorn, Va.—Snow, 3 inches, 11th; ice 15th; apples in bloom 24th.

Mount Solon, Va.—Auroras 15th; "the absence of any red rays [illegible]ough the whole display" was noted as remarkable.

Lexington, Va.—Auroras 2d, 15th; 6 frosts—that on 12th destroyed many peaches and cherries; corn-planting 26th.

Lynchburg, Va.—Snow, 3 inches, 11th; severe frost 15th—fruit suffered.

Wytheville, Va.—More snow 13th (3 inches) than on any day all winter; freeze 15th, killed most cherries.

Huttonsville, W. Va.—Snow 3d, 4th; rain and hail 10th.

Cabell Court House, W. Va.—Snow 13th; ice 14th; strawberries blossomed 18th.

Oxford, N. C.—Frost 15th, killing much fruit and vegetables.

Trinity College, N. C.—Six frosts; that of 14th killed all peaches and many apples; forest leaves grown 30th.

Albemarle, N. C.—Frost 15th, killed peaches—a few apples left; grapes sending out reserve buds; wheat and rye heading out, 30th.

Asheville, N. C.—Frost destroyed all peaches, and most cherries.

Anderson, S. C.—Whippoorwill 2d; mocking birds singing 14th, (here all winter, but silent;) cold snap 12th to 16th; month very favorable to cotton. In 1849 snow on the 15th, and frost till 18th, killed even the wheat, then "in the boot."

Gowdysville, S. C.—Frost, ice, snow, 4th to 16th; strawberries blossom 16th, ripe 30th; wheat heading; clover 10 inches high.

Atlanta, Ga.—First strawberries 10 days later than last year.

Macon, Ga.—Frost 5th, injured some vegetables; aurora 15th, suddenly ceased at 10 p. m.

Opelika, Ala.—Whippoorwill 9th; frost 14th, injured beans, &c.

Moulton, Ala.—Early part cool and frosty; nearly all peaches, cherries, &c., killed on 5th; the latter part very wet, with highest tides in 20 years; but one fair day in the month.

Pilatka, Fla.—Month delightful.

Ocala, Fla.—Hail reported 10 miles south, a rare event here.

Lavacca, Texas.—Month cloudy, rains light and misty.

Austin, Texas.—Frost 3d; chuck-wills-widow heard 22d.

Waco, Texas.—Wheat and corn doing well.

Bento[illegible], La.—Terrible hail-storm 22d, covered the ground seven to ten inches in circumference; fruits, cotton, and corn damaged.

Grenada, Miss.—Severe frosts 3d, 4th; profuse showers 18 to 20th, streams overflow, damage crops, and retard farm work.

Brookhaven, Miss.—White frost 3d; firefly 6th; quails, "bob white," 20th; thunder-storms copious, 16th, 17th, 22d, 23d; farm work delayed.

Elizabethton, Tenn.—Barn swallow 4th; remarkable thunder snow-storm, in gusts of balls and flakes, from southwest, 13th; last frost 16th.

Tusculum College, Tenn.—Frost 12th; snow on mountain eight inches deep 13th; lightning and thunder 17th, 19th, 24th.

Clarksville, Tenn.—Whitish light east of north, supposed to be an aurora, 15th; ice a. m., snow p. m., 13th; peaches killed in blossom; heavy rain, hail, lightning, 19th.

Trenton, Tenn.—Last frost 14th; heavy thunder-storms and gale 19th; wet, late spring; little corn or cotton planted yet.

Pine Grove, Ky.—Thunder-storms 1st, 19th, 20th, 28th; frequent snow, ice, frost, 2d to 14th; peaches delayed in blossoming 9th to 30th.

Lexington, Ky.—Last snow, two inches, 13th; aurora 15th, very brilliant 7.30 p. m. till midnight; spring tardy.

Clinton, Ky.—Whippoorwill 2d; aurora 15th.

Steubenville, Ohio.—Light snows 3d, 4th; aurora 15th; peach blossoming 23d; apple 25th; cherry 29th; spring backward.

Cleveland, Ohio.—Frosts 12th, (heavy,) 13th, 30th; cherry, peach, blooming 29th.

Kelley's Island, Ohio.—Snow 2d, 3d; crocus 13th; hyacinth 23d.

Sandusky, Ohio.—Five thunder-showers 18th to 28th; frost 22d.

Westerville, Ohio.—Snows 3d, 6th, 10th, 13th; aurora 15th; thunder-showers 23d, 28th; frost 30th.

New Holland, Ohio.—Ground frozen one inch 12th; aurora 16th; thunder hail-storm, (17 weighed a pound,) destroyed much fruit, 28th.

Marion, Ohio.—Beautiful aurora 5th; snow 6th; light frost 29th.

Hillsboro', Ohio.—Thunder-shower 1st, with hail 28th; snows 10th, 12th, 13th; peaches blossom 22d; pears 27th.

Toledo, Ohio.—Snows 2d, 11th, 13th, 14th; with rain or sleet 1st, 7th; frequent thunder-showers 18th, 28th; peaches blossom 30th.

Bowling Green, Ohio.—Auroras 5th, 10th, 15th.

Kenton, Ohio.—Aurora 14th, beautiful, all over the heavens.

Urbana, Ohio.—Auroras 5th, (bright white light, equal to full moon;) 15th, (covering 220° horizon and reaching to 20° south of zenith, forming no corona and no arch, but masses of light at zenith; flashes and waves of pink, crimson, and white, lasted till 11 p. m.

Bethel, Ohio.—Peaches in bloom 20th; thunder-shower 28th; peaches one fourth killed by frost.

Jacksonburg, Ohio.—Thunder snow-storm 13th; ice 14th; aurora 15th; peaches blossoming 24th to 28th.

Litchfield, Mich.—Auroras 5th, 15th; brown thrush, martin, 17th.

Grand Rapids, Mich.—Aurora 2d; thunder-showers 18th, 19th, 28th.

Northport, Mich.—Auroras 2d, 4th, 5th, 7th, 9th, 10th, 13th; frogs musical 19th; heavy rain, then four-fifths inch snow 20th, 21st; frost 30th.

Muskegon, Mich.—Heaviest thunder-storm for years 18th; full day's rain 20th.

Otsego, Mich.—Severe snow-storm all day 1st.

Penn Mine, Mich.—Bright auroras 2d, 9th; snows 9th, 16th, 18th, (about a foot,) 19th, 20th.

Copper Falls, Mich.—Auroras 3d, (bright and beautiful colored streamers covering two-thirds of the sky;) 4th, 5th, 9th, 14th, (the last two well-defined streamers and arches,) April snow fall 25.25 inches.

Vevay, Ind.—Aurora 15th, (colored rays and luminous haze north-northeast and northwest;) 16th, (faint, two indistinct arches.)

Muncie, Ind.—Pale auroras 4th, 16th; bright 5th, 15th, (the last, a

corona about 10° south of zenith, luminous rays and waves reaching midway between eastern and southern horizon;) three hail-storms p. m., of 28th, injuring fruit in bloom.

Spiceland, Ind.—Rain, then greatest snow (5.5 inches) of the winter 10th; aurora 15th; peaches blooming 26th to 28th.

Columbia City, Ind.—Robins 2d; martins 5th; aurora 15th, filled northern hemisphere, corona a little south of zenith.

Indianapolis, Ind.—Snow 10th, 13th; tornado, lightning, thunder, 19th, destroyed a railroad depot; hail large as bird's eggs 28th; peach in full bloom 30th.

Merom, Ind.—Snow 12th, 13th; ice 14th; aurora 15th; peach blooming 19th; thunder-storm and tornado 19th.

Chicago, Ill.—Beautiful aurora, bluish streamers, 2d; two thunder-storms 18th, (near Chicago;) unusually cold 14th; first thunder-shower 18th.

King's Mills, Ill.—Snow 1st; ice, beautiful aurora, 2d; cold, wet month; sowing 15 days later than usual.

Louisville, Ill.—Snow 12th, 13th; peach blossoms 15th; whippoorwill 17th; great wind and rain storm 19th and 20th.

Ottawa, Ill.—Thunder, rain, sleet, snow, 1st; fine aurora 2d; ice 11th; severe snow-storm 12th; very severe thunder, wind, rain, hail, 19th, 20th; thunder-storm 28th.

Belvidere, Ill.—Snows 1st, 11th, (six inches;) aurora 2d, (bright arches, streamers, waves, and corona;) 16th, (very bright.)

Winnbago, Ill.—Rain, sleet, snow, thunder, high wind, 1st; auroras 2d; (brilliant all night) 5th; (faint,) 16th.

Rochelle, Ill.—Bright aurora 2d; arch from north of west, a few degrees south of zenith, to south of east; polar light at the same time.

Wyanet, Ill.—Thunder-shower, then snow, 1st; snow squalls 12th; aurora 16th; martins 18th.

Peoria, Ill.—No aurora observed 15th; hurricane 19th.

Loami, Ill.—Rain, then destructive gale, 18th, 19th.

Dubois, Ill.—Aurora 3d; two earthquake shocks from west about 10 p. m., 8th; whippoorwill 9th; peach blooms 22d; apple 24th.

Waterloo, Ill.—Frequent frosts 1st to 15th; violent storm 19th; early peaches damaged by frost.

South Pass, Ill.—Faint aurora 2d; last frosts 13th, 14th.

Manchester, Ill.—Auroras 2d, 16th; snow 12th, 13th; whippoorwill 21st.

Mount Sterling, Ill.—Bright aurora 2d; snow all day 10th; too wet to sow or plant; not a peach blossom in this region.

Augusta, Ill.—Violets, martins, 21st; plums bloom 25th to 29th; strawberry 26th; pear 28th; season three weeks behind time.

Warsaw, Ill.—Brilliant aurora 16th; hail three-fourths inch diameter 18th; whippoorwill 18th; swallows 20th.

Macomb, Ill.—Cold, showery, 1st to 15th; auroras 12th, 13th, 14th; thunder, then hail, then wind-storm, 18th.

Manitowoc, Wis.—Auroras 4th, 5th, 9th, 13th; thunder, hail, 18th.

Plymouth, Wis.—Auroras 2d, 5th, 9th, all pale, without beams; terrific thunder-showers 18th; but little sowing done.

Hingham, Wis.—Snows 1st, (10 inches;) 12th, (2 inches.)

Milwaukee, Wis.—Heavy snow all day 1st; auroras 2d, 5th (brilliant;) 10th, 13th, 16th, (during the night;) (15th, if here, not visible for clouds;) snow 12th; frost 25th.

Embarrass, Wis.—Bright auroras 2d, 5th, 8th; faint, 6th, 16th.

Rocky Run, Wis.—Snow all day 1st; auroras 2d, 4th, 5th, 7th, 8th, 9th, 10th, 11th, 16th, 19th, 29th; snow on four and rain on nine days.

Bayfield, Wis.—Brilliant aurora 2d; bay open, hail, snow, 19th.

Beaver Bay, Minn.—Bay clear; Lake Superior open 3d.

Afton, Minn.—Brilliant aurora 2d; faint one all month.

Minneapolis, Minn.—River open 10th; first boat through Lake Pepin 19th; wheat sown second week in April.

Sibley, Minn.—Frogs peep 10th; thunder-showers 16th, 17th.

New Ulm, Minn.—River open 2d; auroras 2d, 5th, (one electric cloud, west, reached zenith;) 9th, (clouded;) 15th, (cloudy, but reached 5° south of zenith;) 16th, (partly cloudy;) hail-storm 16th.

Madelia, Minn.—Severe northeast snow-storm 1st; auroras 2d, 5th; hail 22d; frosts 21st, 24th; cold, cloudy month.

Clinton, Iowa.—Rain and snow-storm 1st; aurora 2d; season late.

Dubuque, Iowa.—Severe tornado from southwest, doing much damage, 18th.

Waukon, Iowa.—Brilliant auroras 2d, 5th, 16th; whippoorwill 25th.

Bowen's Prairie, Iowa.—Auroras 16th, 17th; month rather unpleasant.

Mt. Vernon, Iowa.—Bright aurora 2d; arch east, through zenith, to west, and faded away from the center.

Iowa City, Iowa.—Unusual aurora 2d; violent hail, then wind, 18th; thermometer suddenly rose to 80°; month cold, cloudy.

Independence, Iowa.—Auroras 2d, 5th, 16th, (double arch;) blackbird concert 17th; first thunder-showers 18th; wheat sowing a fortnight later later than last year.

Waterloo, Iowa.—Snow, rain, wind, 1st; brilliant aurora 2d; hail 18th; cool, but splendid for seeding.

Iowa Falls, Iowa.—Aurora 2d; wheat sowing 7th; ground frozen every morning till 11th; whippoorwill 22d.

Algona, Iowa.—Auroras 2d, 5th; prairie flowers 15th.

St. Louis, Mo.—Most terrific hail-storm ever known here 19th; about 4 p. m. could not read by light of day; some hail-stones were one and a half inch in diameter.

Hematite, Mo.—Aurora 2d; "singular lightness shining through the clouds" 15th; terrible storm 19th; a dry April.

Jefferson City, Mo.—Auroras 2d, (splendid;) 13th, (clouds;) snow at night 2d; thunder-storms 18th, (with hail;) 19th, (all day, with wind;) 22d, (violent hail and hurricane for 15 minutes.)

Warrensburg, Mo.—Ice 13th; snow 30th; peaches killed.

Le Roy, Kansas.—Frosts 12th, 13th; month fine for farmers.

Manhattan, Kansas.—Lightning north, at 7 to 8 p. m. 15th; aurora 16th.

Council Grove, Kansas.—Thunder, hail, 15th; northeast storm 29th, 30th.

Dakota, Neb.—Frogs 14th; bright auroras, 15th, 16th.

Elkhorn, Neb.—Snow 1st; ground frozen 4th, 12th, 13th; rain all day 15th; aurora 16th.

Neosho Valley, Neb.—Cloudy and misty 15th; windy, cold month.

Nebraska City, Neb.—Young grasshoppers by millions 7th; martins 18th; whippoorwill 27th; peach blossoms 28th.

Coolville, Utah.—Snow-storms 3d, 14th, 17th, 18th, 19th, 21st; bluebirds 3d; plowing 6th; beautiful aurora 15th; frost 29th.

Watsonville, Cal.— Smart earthquake 1st, no damage.

Fort Benton, Mon. Ter.—Aurora 1st; upright beams from Polaris to northeast, electric lights from east to west in vast white waves, motion 70° per second, tending north, and forming a nearly complete arch overhead.

NOTES ON THE WEATHER FOR MAY, 1869.

Steuben, Me.—Hard freeze 1st; snow squalls 2d; auroras 8th, 13th; thunder and lightning 13th; frosts 19th, 23d, 28th, 30th.

Lisbon, Me.—Month cool, but more favorable than last year; sowing and planting finished by 31st.

West Waterville, Me.—Sleet 2d, 4th; aurora 8th; thunder-storms 13th, 26th; bobolink 18th; cherry and plum blossoms 30th; apple 31st.

Gardiner, Me.—Snow two inches 1st; auroras 6th, 7th, 8th, 9th, 10th, last three bright; May mean heat for 33 years 53.9°; this May 52.89°; season more forward than last year.

Standish, Me.—Snow 1st, 2d; aurora 8th; cut caterpillar 11th.

Norway, Me.—Frosts 1st, 7th; snow, sleet, rain, 2d; faint auroras 5th, 6th, 10th; thunder-shower 12th; rain on 17 days.

Cornish, Me.—Bobolink 7th; king bird, orchard oriole, 10th.

Cornishville, Me.—May mean heat for 40 years 51.22°; this, 55.72°.

Stratford, N. H.—Snow 2d, (1½ inch;) 3d, (3 inches;) frost, ice, 27th.

Whitefield, N. H.—Last three weeks cloudy and rainy; late spring work.

Goffstown Center, N. H.—Aurora 8th; first thunder-storm 18th; fine month for farmers.

Lunenburg, Vt.—Frost 27th; a pleasant month; vegetation fine.

North Craftsbury, Vt.—Brilliant auroras 7th, 8th; bobolink, 13th; thunder-storm 16th; frosts 21st, 26th.

Randolph, Vt.—Snow 1st; (4 inches) 2d; sleigh ride 3d; apple blossoms 27th, nearly a week earlier than last year; month dry and fair for farm work.

West Charlotte, Vt.—Northeast rain; snow 2d, first May snow in 35 years; snow squalls 4th; deep crimson auroras 6th, 27th; bobolink 11th; peach blossoms 28th.

Middlebury, Vt.—Aurora 8th; thunder and hail storm 16th.

Brandon, Vt.—Rain, sleet, snow, 1st, 2d; showery 16th to 21st; frost, ice on low lands, 27th.

Kingston, Mass.—Peach blossoms 2d; cherry 7th; vegetation about a week earlier than last year.

New Bedford, Mass.—Peach blossoms 2d; cherry 4th; apple 23d.

Worcester, Mass.—Rain, snow, 1st; thunder-storm 2d; auroras 7th, 8th, 10th.

Lunenburg, Mass.—Thunder, rain, hail, and 4½ inches snow, 1st, 2d; (10 miles north, snow 18 inches, and sleighing on 3d and 4th;) cherry blossoms 10th; peach 13th; apple 25th, (average of apple blossoming for 72 years May 21st; earliest, May 9th, 1830; latest, June 3d, 1850.) May mean temperature for 31 years 55.63°; this year, 53.92°.

Amherst, Mass.—Thunder and lightning, with rain and hail, 2d; hills covered with snow 3d.

Williamstown, Mass.—Sleet and snow 2d; faint auroras 6th, 7th; heat lightning 12th.

Newport, R. I.—Ice 2d; frost 7th; thunder-showers 15th, 26th, 29th, 31st.

Middletown, Ct.—Thunder, lightning, hail, 2d; auroras 7th, 8th, 12th.

Waterbury, Ct.—Frost, ice, 6th; aurora 8th; pear blossoms 11th; Baltimore oriole 12th; apple blossoms 17th; lilac 19th.

Colebrook, Ct.—Rain, snow, 1st; with high wind 2d; in squalls 3d.

Moriches, N. Y.—Faint aurora 3d; white frost in places 5th.

Garrison's, N. Y.—Month cool, much rain; grain and grass good.

New York, N. Y.—Snow 2d; hail 16th; seven thunder-showers.

Minaville, N. Y.—Snow 2d, 3d; cherry blossoms 15th; apple 25th.

North Hammond, N. Y.—Snow and rain all day 3d; frost, injuring cherries and plums, 27th; orioles and bobolinks 11th; heavy dew 22d.

Houseville, N. Y.—Auroras 8th, 9th, 10th; thunder-storms 12th, 16th, 26th.

Leyden, N. Y.—First east wind for a year, and two inches snow, 1st; auroras 7th, 8th, 10th.

South Trenton, N. Y.—Cherry and plum blossoms 13th; apple 23d.

Depauville, N. Y.—Rain, snow, 2d, 3d; auroras 7th, 8th, 9th, 10th, 12th; frosts 10th, 22d, 27th; plum blossoms 16th; corn planting 19th; apple blossoms 30th; cool, dry May.

North Volney, N. Y.—Snow 1st, 3d, 4th; auroras 7th, 8th, 9th, 10th; thunder and hail 16th, some $\frac{3}{4}$ inch in diameter; rain on 13 days.

Vermillion, N. Y.—Daffodil blossoms 6th; dandelion 13th; shad bush 14th; apple 30th.

Waterburg, N. Y.—Ice 4th; auroras 7th, 8th, 9th, 10th; frost 22d, 23d.

Nichols, N. Y.—Snow squalls 3d; aurora 8th; pear blossoms 18th.

Newark Valley, N. Y.—Thunder and hail 16th, 26th—on 16th so dark, lights had to be used in day-time, and on 26th thermometer fell from 80° to 64° in less than half an hour; spring late.

Himrods, N. Y.—Ice 4th; hail 14th; frost 22d.

Buffalo, N. Y.—Ice 3d; frost 22d; ice in harbor till 16th; orioles 10th; cherry and peach blossoms 15th; plum 20th; apple, lilac, 29th; month 1.5° colder than May average for 11 years.

Newark, N. J.—Driving northeast rain-storm 1st, 2d; May average for 25 years 58.64°; warmest in 1844, 62.22°; coolest in 1861, 54.72°; May, 1869, 57.37°.

New Brunswick, N. J.—Auroras 4th, (feeble;) 5th, (beautiful;) first dew, 6th; thunder-showers, one very heavy, 31st.

Moorestown, N. J.—Northeast storm 1st, 2d; some snow on 2d.

Newfield, N. J.—Frost 5th; apple blossoms 7th; corn planting 10th.

Greenwich, N. J.—Hail 16th; wheat heading 20th; fire-flies 24th.

Vineland, N. J.—First four days cool and stormy. Month favorable for all crops; strawberries a week earlier than last year.

Nyces, Pa.—Snow (3 inches) 2d; in squalls 3d; thunder-storm 30th; clouds almost black, and air very dark.

Hamlinton, Pa.—Six thunder-storms in May, on 15th with hail.

Fallsington, Pa.—Heavy rain and hail 1st; frost 5th, 23d.

Horsham, Pa.—Auroras 4th, 9th; hail 16th, damage fruit and crops.

Plymouth Meeting, Pa.—Snow 2d; frost 5th, 6th; apple blossoms full 7th, 10 days earlier than last year.

Dyberry, Pa.—Cherry blossoms 4th; apple 20th.

White Hall, Pa.—Rain, hail, snow, 1st, 2d; light frost 6th; in full bloom: cherries 5th, pears 9th, apples 14th, quinces 24th; whippoorwill 15th; hail 16th.

Factoryville, Pa.—Rain, hail, snow, 1st, 2d, 3d; auroras 4th, 5th, 6th, 8th, 28th; corn planting 11th.

Westchester, Pa.—Frost 5th; hail-storm 16th; rye in head 16th, and wheat 24th; aurora 29th.

Carlisle, Pa.—Thunder-shower, hail, 13th; wheat heading 29th.

Fountain Dale, Pa.—Lilac blossoms 1st to 7th; dogwood 7th to 9th; locusts 30th; tornado 31st, from southwest, doing considerable damage in 15 minutes.

Tioga, Pa.—Snow on hills 2d; fruit blossoms 20th; frost, ice, 22d. Much dark, cloudy weather; coldest May in 12 years.

Franklin, Pa.—Peach blossoms 12th; some hail 16th; frost 20th.

Connellsville, Pa.—Apple blossoms 7th; frost 23d; thunder, rain, hail, 28th.

Newcastle, Pa.—Rain almost every day after 14th. May 1° higher temperature than in 1868.

Beaver, Pa.—No frost; frequent rains.

Canonsburg, Pa.—Frost, ice, 3d; rye shooting 22d, and barley 25th.

Woodlawn, Md.—White frosts 2d, 5th; martins 10th; rye shooting 11th, and red medium wheat 18th; locust blossoms 27th; fire-flies 29th.

Mt. St. Mary's, Md.—Snow flakes 3d; thunder, rain, hail, 13th, 31st.

Clarksville, Md.—May 29th, 5½ p. m., tornado from west; in three minutes destroyed fields of wheat, prostrated orchard, shade, and forest trees, buildings, fences, and injured several persons.

Johnsontown, Va.—Frost kills tender vegetables 9th, (last in 1868, April 23d;) display of shooting stars at 11 p. m. 10th, from northeast to southwest; locust blossoms 13th, and rye 15th.

Luni Station, Va.—Fire-fly 11th; faint aurora 13th; rust on wheat leaf 26th. Favorable weather.

Bacon's Castle, Va.—Snow, hail 3d; planting peanuts 4th to 14th; fire-fly 10th; faint white aurora, 24th; ripe cherries 26th. First part of May cold, last part warm; rain on 15 days.

Comorn, Va.—Hail 13th; locust blossoms 18th; ripe strawberries 24th.

Lexington, Va.—Frost 8th, 18th; severe hail 28th.

Snowville, Va.—Frost 3d, 7th, 9th; waters very high 14th.

Wytheville, Va.—Snow flakes 2d; lilacs 3d; frost 4th, 8th, 20th, 21st, and ice 23d; hail, rain 15th; locust blossoms 29th.

Cabell Court House, W. Va.—Season three weeks later than usual.

Trinity College, N. C.—Frosts doing some injury, 3d, 23d.

Albemarle, N. C.—White frosts 7th, 8th, 20th; ripe strawberries 8th; rain needed 31st.

Statesville, N. C.—Frosts 3d, 4th, 8th, 9th, 20th, 23d; thunder southwest 28th.

Atlanta, Ga.—Slight earthquake, 7.45 p. m. 21st; lasted 4 or 5 seconds.

Opelika, Fla.—Ripe Chickasaw plums 8th, dewberries 9th, blackberries 31st.

Jacksonville, Fla.—May mean temperature 73.35°, usually 76.59°. May rain fall 0.81 inches, usually 3.32 inches. The driest May known, and coldest since 1857. All crops are suffering.

Lavacca, Texas.—Dewberries ripe early in May; garden vegetables plenty since middle of month.

Brookhaven, Miss.—Blackberries, plums, cherries, and mulberries ripening 30th.

Memphis, Tenn.—Green peas 3d; cucumbers 9th; strawberries plenty 19th; fire-flies 26th. Spring mean temperature, 1868, 61.92°; of 1869, 58.05°; spring rain fall, 1868, 15.58 inches; of 1869, 16.90 inches.

Pine Grove, Ky.—Snow 2d; frost 3d, 17th, 20th. Corn planting (and replanting) late; ground baked and weeds thrifty.

Clinton, Ky.—Fire-flies 16th.

Steubenville, O.—Frosts 3d, 24th. Eight thunder-storms in May.

Gilmore, O.—Aurora 13th; hail 15th; frost 22d; hail north of this as large as hen eggs on 28th.

Wooster, O.—Aurora 13th; two hail-storms 16th; severe thunder-storm 30th.

Smithville, O.—Much hail with rain 13th.

Kelley's Island, O.—Peach blossoms 10th; cherry 11th; apple 24th.

Sandusky, O.—Peach and cherry blossoms 4th; apple 11th; chimney swallows 4th; frost 8th; four thunder-showers 26th.

North Fairfield, O.—Terrible and damaging hail-storm 26th.

Westerville, O.—Frosts 3d, 8th, 20th, 23d; thunder and hail-storm 15th. Spots on the sun varying almost daily.

Marion, O.—Heavy frost 3d; hail-storm 16th; rainy 26th to 31st. Corn planting delayed.

Bowling Green, O.—Peach and cherry blossoms 6th; apples 12th; light frosts 18th, 20th.

Kenton, O.—Thunder-storms 26th, 29th, in each rain in torrents; rain all day 30th.

Urbana, O.—Cherry blossoms 2d; pear 4th; auroras 7th, 8th; hail 16th; frosts 17th, 20th.

Litchfield, Mich.—Dim auroras 9th, 10th; heavy frost 20th.

Northport, Mich.—Cherry blossoms 24th, peach 27th. Cool month, but no damaging frosts.

Copper Falls, Mich.—Robins 7th; last snow seen 29th. Month cool and dry; vegetation late and slow.

Penn Mine, Mich.—Roads impassable; snow deep but melting 4th; vegetation backward, but advancing fast 31st.

Vevay, Ind.—Grapes blossom 12th; insects very numerous, especially on peach, 13th; apples dropping fast 17th; fire-fly 18th; terrific thunder-storm, tornado, hail, 27th; another of greater terror 28th. Seven severe thunder-storms in May.

Spiceland, Ind.—Thunder-shower with hail 5th; saw spots on sun, 157 on 7th; 175 on 8th; 200 on 10th; 22 on 19th; telescope 6 feet, power 200; a little frost 17th.

Columbia City, Ind.—Frosts 18th, 19th, 20th; no damage.

Jalapa, Ind.—Mississinewa river higher than in 20 years.

Knightstown, Ind.—Cherry blossoms 2d, apple 8th; frost 3d, 8th; wheat heading 30th.

La Fayette, Ind.—Heavy frost, ice 3d; hail-storms 4th, 30th, the last doing much damage; streams overflowing thousands of acres and drowning out the crops.

Kentland, Ind.—Very wet month; corn planting hindered.

King's Mills, Ill.—Light frost 7th, 8th; plum blossoms 9th; cherry 13th.

Louisville, Ill.—Frost 1st, 2d, 6th; bobolink 16th; corn planted 19th to 31st; wheat in full head 31st.

Ottawa, Ill.—Frost 7th; severe thunder-storms 26th to 30th.

Belvidere, Ill.—Frost 8th, (since first frost, September 16, 234 days.)

Winnebago, Ill.—Aurora 8th; May cherry blossoms 12th, morella 15th, apple 20th. Month mean temperature 4° below the May average of 12 years.

Wyanet, Ill.—Plum blossoms 1st, early cherry 4th. Last week heavy thunder-storms, flooding many corn fields.

Tiskilwa, Ill.—Slight frost 7th.

Elmira, Ill.—Oriole 3d; bobolink 9th; catbird 10th; hail 26th, and thunder storms and rains to 31st.

Loami, Ill.—May 31st, wet, warm; corn not all planted yet.

Dubois, Ill.—Bobolink 6th; white-breasted swallow 14th; great thunder-storm 27th. Month 6.4° warmer than for four years.

Galesburg, Ill.—Most of May cold and wet; vegetation late.

Manitowoc, Wis.—Auroras 7th, 9th; thunder-storms 14th, 15th, 25th.

Plymouth, Wis.—Woods green 31st, corn not all planted yet.

Hingham, Wis.—Wheat sowing 1st to 7th, oats 7th to 8th.

Milwaukee, Wis.—Light frost 19th; storm with hail 26th; storms to 31st.

Embarrass, Wis.—Faint aurora 3d, cliff swallow 8th, purple martin 19th, humming bird 30th.

New Lisbon, Wis.—Continuous rain 25th, 26th, 27th; more water on the ground than seen for years.

Bayfield, Wis.—First thunder-storm 4th, first boat from Detroit 10th.

St. Paul, Minn.—May cool, cloudy, backward; good for wheat.

New Ulm, Minn.—Auroras, a fair light, 4th, 7th.

Madelia, Minn.—Last frost 7th; only thunder in month 9th; fruit trees in full bloom 15th; forest full leaf 23d; fog and rain 25th to 30th. Month cool and cloudy.

Clinton, Iowa.—White frost 19th; thermometer fell from 84° to 52° 26th; thunder-storm with hail 27th. Month rather cool.

Waukon, Iowa.—Low thunder, incessant lightning, rain, large hail, 4th; faint aurora 7th, frost on low lands 18th.

Dubuque, Iowa.—Violent wind-storm 4th; cherry blossoms 9th.

Monticello, Iowa.—Corn planting finished 15th; no May frost.

Fort Madison, Iowa.—Apple and cherry blossoms 4th; strawberry 5th; fire-fly 27th.

Guttenberg, Iowa.—Violent hurricane, thunder, lightning, and some rain, 4th; white frosts 18th, 19th.

Algona, Iowa.—Furious thunder-storm from east, rain in torrents 26th, 27th, 28th.

Woodbine, Iowa.—Light frost 22d; rain-storms 20th to 29th.

Hematite, Mo.—Humming-birds 5th; frost and ice 8th; fire-flies 12th, cut-worms, bad, 10th to 31st.

Keytesville, Mo.—Hail, some one inch diameter, 24th.

Hermitage, Mo.—Four thunder-showers p. m. 27th; almost continuous hard thunder, with lightning and rain p. m. 29th; 4.31 inches rain in 50 hours, between 26th and 29th.

Harrisonville, Mo.—Frost in low places 17th; heavy gale, thunder, rain, hail, (pieces of ice, some half an ounce 27th.)

St. Joseph, Mo.—In one and one-half hour four inches rain 26th; the river rose three and one-half feet, and bridges, &c., were swept away.

Oregon, Mo.—Aurora 13th; light frosts 17th, 19th, 22d; great storm 26th, destroyed crops, fences, trees, and overflowed lands never known to be submerged; hail 29th, some one and one-half inch diameter.

Atchison, Kansas.—Wind and rain storms, 24th, 26th, much damage.

Olatha, Kansas.—Young grasshoppers killed by cold and wet season.

Paola, Kansas.—Five frosts, little damage; crops need rain 10th to 20th.

Lawrence, Kansas.—Roses 9th; light frost 17th; six thunder-storms.

Neosho Falls, Kansas.—Month cold.

Manhattan, Kansas.—Winter wheat heading 12th.

Dakota, Neb.—Frost 22d; showery 19th to 27th.

Elkhorn, Neb.—Month 2.5° colder than for 10 years.

De Soto, Neb.—Lilac blossoms 14th; May roses, snow balls 27th.

Fontanelle, Neb.—Last frost 16th, damaged tomatoes; dry till 24th.

Glendale, Neb.—Apple blossoms 5th; hail, sleet, rain, 12th.

Nebraska City.—Frost 17th; grasshoppers dying 31st.

Monterey, Cal.—May 30th, two slight earthquakes last night.

Watsonville, Cal.—Slight earthquake a. m. 20th, three to five seconds; no damage.

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MONTHLY REPORT

OF

THE DEPARTMENT OF AGRICULTURE,

FOR

JULY, 1869.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1869.

MONTHLY REPORT.

WASHINGTON, D. C., *July* 20, 1869.

SIR: I herewith submit for publication the report of this division for the month of July, embracing a condensed statement of the condition of the growing crops, together with a variety of extracts from the correspondence of the Department, a table showing the imports for three-quarters of the last fiscal year, an article on chemical manures, meteorological tables and notes on the weather for June, and minor items from various sources.

J. R. DODGE, *Statistician.*

Hon. HORACE CAPRON, *Commissioner.*

CONDITION OF THE CROPS.

The excessive rain-fall of June—the season of ripening of winter grain—has had an influence upon the harvest, and should be regarded in a report of the condition of the crops. The following table shows the mean rain-fall and temperature both of May and June, as compared with the same months of last year, obtained by averaging the results of observations of the entire corps of Smithsonian reporters throughout the country:

	1869.				1868.			
	May.		June.		May.		June.	
	Mean temp.	Rain-fall.	Mean temp.	Rain-fall.	Mean temp.	Rain-fall.	Mean temp.	Rain-fall.
	°	*Inch.*	°	*Inch.*	°	*Inch.*	°	*Inch.*
Maine	53.2	4.52	62.2	3.92	51.1	9.54	63.7	2.47
New Hampshire	54.9	3.52	62.2	3.26	52.9	7.03	66.7	3.59
Vermont	54.2	3.73	62.3	4.99	55.7	5.01	64.4	3.95
Massachusetts	61.2	6.22	65.2	5.38	52.9	8.05	66.5	3.50
Rhode Island	54.6	6.04	64.6	2.26	52.2	8.88	60.5	3.48
Connecticut	55.9	5.68	65.4	6.[illegible]	53.8	8.26	65.1	4.37
New York	54.4	3.56	64.6	4.[illegible]	51.4	5.99	66.5	3.34
New Jersey	58.7	4.54	70.8	4.37	57.0	7.20	69.3	5.37
Pennsylvania	57.8	4.84	68.5	4.84	56.9	6.30	68.8	3.47
Delaware			78.2	1.40				
Maryland	61.6	4.93	71.7	2.49	58.9	6.92	70.7	3.46
Virginia	60.9	5.89	73.2	3.86	62.4	6.37	70.3	2.29
North Carolina	63.8	4.58	75.2	5.13	65.3	3.91	73.7	3.48
South Carolina	67.8	1.19	77.4	3.72	69.3	.....	74.4	2.46
Georgia	67.2	2.67	75.5	2.89	70.4	5.04	75.5	0.84

	1869.				1868.			
	May.		June.		May.		June.	
	Mean temp.	Rain-fall.	Mean temp.	Rain-fall.	Mean temp	Rain-fall.	Mean temp.	Rain-fall.
	°	*Inch.*	°	*Inch.*	°	*Inch.*	°	*Inch.*
Florida	72.1	1.11	80.3	6.08	76.1	.....	79.8	12.40
Alabama	69.7	1.69	76.6	4.12	69.6	3.11	78.3	0.99
Mississippi	70.4	1.77	75.5	3.01	73.9	3.98	78.6	1.57
Louisiana	70.0	.....	.....	.....	69.8	1.00	78.6	1.57
Texas	73.9	3.45	79.9	4.01	75.3	2.53	80.3	2.37
Tennessee	64.0	3.00	73.2	4.32	66.3	3.17	73.8	1.55
West Virginia	66.4	2.00	70.1	5.30	60.6	.....	71.5	.....
Kentucky	62.5	2.70	71.9	5.11	63.2	5.55	71.6	5.04
Missouri	63.6	4.53	70.5	6.99	65.7	4.48	73.4	2.80
Illinois	59.4	5.48	68.3	6.73	69.1	6.32	71.2	2.78
Indiana	59.6	6.39	69.7	5.22	62.0	7.13	71.8	3.44
Ohio	59.4	6.49	68.4	5.25	55.3	5.54	69.7	5.57
Michigan	52.5	3.58	60.4	5.20	54.6	3.01	62.3	4.47
Wisconsin	53.9	5.00	61.0	7.73	56.1	2.28	66.2	5.66
Minnesota	57.8	2.28	64.4	2.74	60.2	3.95	68.3	3.44
Iowa	59.1	4.58	66.4	7.42	61.8	5.60	69.9	4.57
Kansas	62.7	4.46	68.3	7.95	68.1	3.99	76.0	3.79
Nebraska	61.9	4.02	67.8	6.92	64.9	7.70	72.5	3.79
California	62.7	0.54	66.6	0.01	56.0	21.26	56.1	0.38
Utah	.....	.....	65.1	.....	56.3	2.36	64.7	4.00
Montana	.....	.....	64.6	1.00	.....	.....	.....	.....

It will be seen that rain in June of this year has been in excess of its fall during the same period of 1868, except in Florida, the Atlantic coast between Washington and New York City, and to a slight degree in Rhode Island, in New Hampshire, and in Minnesota. The greatest disparity has existed in the wheat belt between the Missouri and the Mississippi River. Illinois, Iowa, Nebraska, Kansas, and Missouri average a rain-fall of 7.20 inches, against an average of 3.54 in June of last year. The temperature has also been lower by three to seven degrees, the difference being greatest in Kansas, and nearly as marked in Nebraska. In the South, while there has been more rain in June than usual, the temperature has not been reduced. May, in the South, was much colder than the same month in 1868, causing much anxiety and labor in replanting.

The effect, upon winter grain, of so much moisture in the ripening season, has been to give a growth of straw almost unprecedented, and an appearance of vigor quite remarkable. At the same time, a general exemption from insects has been observed, and a good development and filling of the head, which, with the increased acreage heretofore recorded, might be expected to produce a harvest of extraordinary magnitude. To this calculation there are a few drawbacks. Rust, which has not been general or peculiarly destructive, has wrought some injury east of the plains, and has been quite severe in several counties in California, and may yet prove disastrous to the spring wheat. There will be some complaint of light yield in threshing, in comparison with the apparent vigor and fullness of the growth at reaping. Already several accounts of injury by sprouting in the shock have been received from

Missouri, Tennessee, and Southern Illinois, where the harvest is over. This latter drawback, should wet weather continue, may greatly reduce the value of the crop. It is scarcely possible, however, that any one or all of these causes may be sufficient so to reduce the crop as to cause a scarcity. It may be assumed to be the third full crop, following three seasons of comparative scarcity; and an abundance of flour, at moderate prices, may reasonably be expected, with a good surplus for exportation. If the harvests of Europe are short, as appearances threaten, prices may be somewhat stiffened by an increased foreign demand.

There is less variety in local prospects than usual. Rarely have appearances been more uniformly good, and local failures so rare. In New England, though little wheat is grown, reports are quite favorable. The general tenor of reports has been that the season is backward, but that wheat is above an average in appearance.

In New York, some accounts of rust have been received; the greatest injury reported is in Yates County. From the old Genesee district the report comes that wheat stands remarkably well, and promises a fine harvest.

In parts of New Jersey, as in Hunterdon County, it is claimed that wheat has not been better in twenty years; in Ocean, rust has appeared, yet it is assumed that the crop will be above an average.

Very favorable returns are received from Pennsylvania, many counties reporting an unusual promise. Slight indications of rust are mentioned in a few instances.

In Maryland and Virginia a better crop than for many years has been gathered. Some counties report a yield double that of last year. In St. Mary's County, Maryland, the grain is found to be proportionally less than the straw.

In the Carolinas a superior crop is reported, as also in Georgia, though injured to some extent by rust.

Some counties in Alabama report an unparalleled yield. The returns from the States directly west of Alabama are generally favorable, though little wheat is grown in that quarter. In Texas a lack of seed reduced the acreage sown.

The harvest has been abundant in Arkansas, with more or less injury in the shock from rain.

In Tennessee there has been damage from sprouting in the shock, and a little from rust. The Tappahannock, in one county, was free from rust, while the White Michigan suffered from it. In another county, where the Tappahannock and Red May were compared, the former had the advantage by ten per cent.

Throughout the west the reports have been so uniformly favorable that it is necessary only to note the exceptions. In the younger States the increase of the crop over that of last year is heavy, as in Cuming County, Nebraska, which produced 50,000 bushels in 1868, and is estimated to yield 100,000 this season. In Missouri wheat upon the timber lands looked better than that on the prairies, where it was winter-killed to some extent. In Hancock County, Ohio, the crop of half a township was destroyed by hail; in many localities the grain was badly laid, and difficult to harvest with a machine, while cradling in season was simply an impossibility. Some of the Illinois prairies, and certain Missouri wheat fields, were too soft for the use of reapers, and labor was too scarce and high to admit of any other mode of harvesting. Only the late-sown winter wheat, as a rule, has been affected with rust. Floods in the bottom-lands have done considerable damage in Illinois, Indiana and elsewhere. In California great anticipations have been some-

what modified by the appearance of rust in Santa Clara, San Barnardino, and other counties. In Oregon the early-sown spring wheat is looking extremely well, while that sown very late is threatened with failure, from unusual heat without rain. Correspondents in Arizona have estimated twenty-five bushels per acre for early, and eighteen bushels for late-sown wheat.

Corn.—The season has been very unfavorable for the great national crop, in almost every State. In the early spring, cold weather and wet soils, threatening to rot the seed as fast as it was put into the ground, delayed the season of planting. Then large areas were replanted, from a continuance of similar conditions, and the stand has therefore been poor, and the growth stunted and feeble in northern latitudes until late in June, since which time a great improvement has resulted. The copious notes from local correspondents will give interesting particulars. In many fields there are more weeds than corn. Worms have proved destructive in some places. Altogether, the prospect at present is quite unfavorable for a good crop of corn, though there is yet time, under favorable circumstances, for great amelioration.

The acreage is less in the South, by a very slight diminution. than last year. It is also less in New York, Michigan, Indiana, Illinois, and in some of the Eastern States, the decrease in Illinois amounting to four per cent., or more than 150,000 acres. There has been an enlargement of the corn area west of the Mississippi, and to some extent in more eastern States, sufficient to give a total acreage equal to that of last year.

Cotton.—The feebleness and starved appearance of the plant in May and early June are yielding to the bright suns and genial showers of the progressing season, which are rapidly repairing all damages except a lack of a perfect "stand." In a few localities fears are expressed that there will not be more than half a crop. On the other hand, among the favorable indications presented, the general report is, along the Atlantic coast, that large quantities of fertilizers have been used, great care exercised in selecting seed, and better implements employed, while the laborers are more faithful and reliable. In Mississippi the plant is from two to three weeks later than usual, but looks very well and promises, with a favorable season, to be nearly as far advanced as usual the 15th of August, the time to commence the first picking.

The acreage is about 16 per cent. greater than last year, increasing the total acreage of 1868, which was about seven millions, to more than eight millions of acres. Tennessee exhibits a slight decrease in acreage, (as do Virginia, Kentucky, and Missouri, though their cotton area is too small to affect the calculation,) and the increase in the other States is estimated as follows: North Carolina, 10 per cent.; South Carolina, 9; Georgia, 18; Florida, 25; Alabama, 8; Mississippi, 14; Louisiana, 16; Texas, 32; Arkansas, 12. Should the yield per acre equal that of last year, this increase of acreage would enlarge the total production to very nearly three millions of bales. Nothing short of unusual disasters will reduce the crop below that of last year, or two and a half millions.

Other crops.—Hay will be abundant, but of comparatively poor quality, being rank in growth, and to some extent injured in curing. In New England it is not a full crop.

Potatoes have been very largely planted, and are generally growing vigorously and promising well, except where injured by wet weather. Fears of an unusual amount of potato disease are beginning to prevail.

For particulars concerning these and minor crops the accompanying tables and notes of correspondents should be consulted.

Table showing the condition of the crops on the 1st day of July, 1869.

STATES.	Corn.		Wheat.		Rye.		Barley.	
	Acreage, compared with last year.	Average condition July 1.	Average condition of winter wheat July 1.	Average condition of spring wheat July 1.	Average condition of winter rye July 1.	Average condition of spring rye July 1.	Average condition of winter barley July 1.	Average condition of spring barley July 1.
Maine	9.8	9.1	10	9.8	10.2	10	.....	10.2
New Hampshire	10	9	10	10.7	10.3	10.6	9.3	10.5
Vermont	9.8	7.1	10	9.8	9.2	9.6	.....	9.7
Massachusetts	9.9	9.3	10.3	10	10.5	10.7	10	10.3
Rhode Island	10.3	10.3	.....	.....	10	10	.....	11.3
Connecticut	10	9.3	10.6	10.6	10.8	11	.....	11
New York	9.8	8.8	10.2	10.1	10.1	10.2	10.1	10.8
New Jersey	10.4	9.8	11.5	.....	10.9	.....	.....	.....
Pennsylvania	10.2	9.4	11.3	10.8	10.1	10.2	10	10.7
Delaware	9	8.5	11.5	.....	12	.....	.....	.....
Maryland	10.2	9.7	11.5	.....	10.7	.....	9.5	9.6
Virginia	11	10	13	.....	10.6	.....	11	.....
North Carolina	10	10.6	12.5	13	10.5	11	9	.....
South Carolina	9.8	10	12.2	.....	10.4	.....	.....	.....
Georgia	9.4	10.6	11.8	.....	10.5	.....	10.1	.....
Florida	11	9.5	.....	.....	.....	.....	.....	.....
Alabama	10	9.7	11.3	.....	10.3	.....	10	.....
Mississippi	9.8	9.6	10.9	.....	11	.....	.....	.....
Louisiana	9.8	10.2	.....	.....	.....	.....	.....	.....
Texas	10.7	11.7	10.4	10.2	10.2	10.5	10.3	10.6
Arkansas	9.8	9.8	10.8	10	10.2	.....	10.5	.....
Tennessee	9.9	9.2	11.8	11.5	10.6	10.8	10.3	10.5
West Virginia	10.6	9.9	13.2	11.6	10.5	10.7	10.5	10.8
Kentucky	10.5	8.9	13.3	11	11	10.6	10.6	9.8
Missouri	11.3	9.1	11.1	10.1	10	10.3	10.9	10.7
Illinois	9.6	7.6	11	9.3	10.5	11	10.4	9.8
Indiana	9.7	8.6	12	9.7	10.9	10.5	11.1	10.2
Ohio	10	8.8	12.5	10.4	11.1	10.5	10.8	10.6
Michigan	9.5	7.7	10.8	10.4	10.4	10.2	9.9	10.3
Wisconsin	10.1	6.5	10.8	10.4	10.6	10.9	10.2	10.4
Minnesota	10.4	7.9	11.1	10.9	10.1	10.5	10.3	10.6
Iowa	11.8	8.1	10.2	11.4	10.8	11.3	10.4	10.7
Kansas	13.2	10.1	10.3	12.3	10	10.1	10.2	9.9
Nebraska	10.6	7.9	7.8	11.9	12	11.6	.....	11.6
California	10.5	9.6	9.3	8.3	9.8	8.5	10.1	9.5

Condition of the crops, &c.—Continued.

STATES.	Oats.	Pasture.	Clover.	Timothy.	Potatoes, (Solanum tuberosum.)		Potatoes, (Batatas edulis,) sweet.	
	Average condition July 1.	Average condition July 1.	Average condition July 1.	Average condition July 1.	Acreage, compared with last year.	Average condition July 1.	Acreage, compared with last year.	Average condition July 1.
Maine	10.5	10.3	9.8	9.6	9.8	10.8	.....	.....
New Hampshire	10.1	10	9.8	8.5	10.3	10	.....	.....
Vermont	10.2	11.6	10.4	9.7	9.7	9.8	.....	.....
Massachusetts	10.1	10.9	10.5	10.3	10.4	11	.....	.....
Rhode Island	11.3	11.3	11.3	11.3	10.3	11	.....	.....
Connecticut	11.6	11	11	11	11.3	11.3	.....	.....
New York	10.9	11.3	10.6	10.5	10.1	10.3	9.7	10.2
New Jersey	11.7	11	9.5	10.1	11.2	11.7	10.5	10
Pennsylvania	11	11.1	10.1	10.4	10.8	10.6	10.2	9.8
Delaware	11	10.5	9.5	9.5	11	10	10	9.5
Maryland	10.6	10.2	9.4	9.6	11	10.3	11	9.4
Virginia	10	10.9	10.9	10.2	12	11	10.1	9.5
North Carolina	10.7	10.4	10.6	10.1	10.5	10.6	10.2	9.9
South Carolina	11.9	9.6	10.2	.....	10.4	11	10.2	10.3
Georgia	11.5	10.2	10.4	10.7	10.5	10.3	9.7	9.9
Florida	12.6	10.6	.....	.....	12.2	11	10	9.1
Alabama	11.3	10.1	10.8	.....	10.3	10.7	10.1	10.2
Mississippi	10.5	10.8	10.7	.....	10.2	9.8	10.4	9.8
Louisiana	.....	10.5	.....	.....	10.5	10.8	10.2	9.5
Texas	12	11.2	.....	.....	12	11.7	10	10.2
Arkansas	10.8	11.4	10.8	10.7	11.3	11.2	10.4	9.8
Tennessee	10.5	10.6	10.6	10.6	10	10.5	10.1	10
West Virginia	10.9	12.2	11.2	11.3	11	11.3	11.5	10
Kentucky	9.1	10.5	10.2	9.4	10.7	10.2	9.9	9.5
Missouri	11.6	12.2	11.6	11.8	11.6	11.1	10.4	10
Illinois	10.3	11.8	11	11.1	11.1	10.7	10.4	9.8
Indiana	10.7	11.8	11.5	11.6	10.2	10.4	9.9	9.7
Ohio	10.3	11.4	10.7	10.2	10.6	10.7	9.9	9.4
Michigan	11	11.7	11.2	11.1	9.8	9.8	10.2	9.7
Wisconsin	11	11.8	11.4	11.3	9.3	13.6	10.6	8.6
Minnesota	10.7	10.4	10.1	10.3	10.6	9.8	.....	.....
Iowa	11.2	11.6	11.5	11.1	11.3	11.3	10.8	10.2
Kansas	12.1	13	11.3	11.3	13.1	13	10.3	10.5
Nebraska	12	11.7	.....	.....	12.3	11.7	10.6	10
California	9.9	10.8	10.4	9.2	12.5	10.5	15	10.1

Condition of the crops, &c.—Continued.

STATES.	Beans.		Sorghum.		Sugar Cane. (Not sorghum.)		Tobacco.	
	Acreage compared with last year.	Average condition July 1st.	Acreage compared with last year.	Average condition July 1st.	Acreage compared with last year	Average condition July 1st.	Acreage compared with last year.	Average condition July 1st.
Maine	10	9.9	.....	.....	.....	.....	.....	.....
New Hampshire	10.4	9.8	.....	.....	.....	.....	.....	.....
Vermont	11.8	9.4	.....	.....	.....	.....	.....	.....
Massachusetts	10.1	9.6	.....	.....	.....	.....	12	10
Rhode Island	10	9.6	.....	.....	.....	.....	.....	.....
Connecticut	10	10	.....	.....	.....	.....	13	10
New York	9.9	9.9	9.5	8.6	.....	.....	9.2	9.6
New Jersey	10	10	9	10	.....	.....	.....	.....
Pennsylvania	10	9.8	7.9	9	.....	.....	10.5	10.2
Delaware	10.5	11	9	10	.....	.....	.....	.....
Maryland	10.1	10	9.4	9.6	.....	.....	10	9.7
Virginia	10.4	9.9	9.2	9.3	.....	.....	9.2	10.4
North Carolina	10.2	10.1	9	9.6	.....	.....	11.5	10.2
South Carolina	9.6	9.5	10.6	9.5	9.5	9	14.5	11.2
Georgia	10.2	10.1	7.6	9.1	10.1	10.1	10.1	9.9
Florida	10	10	.....	.....	10.3	9	11	11
Alabama	9.3	10	9.2	10	11.2	10	10.3	10.8
Mississippi	10	10	9.3	9.8	12.3	10	9.5	9.5
Louisiana	10	10	12.5	10	12.3	9	9	7.2
Texas	10.5	10.7	9.2	10.5	12.2	11	10	11.6
Arkansas	10 9	10.1	10.5	9.4	10	10	9.5	9.7
Tennessee	10.1	10.3	8.5	10	.....	.....	10.1	9.6
West Virginia	10.3	10.4	9.8	9.6	.....	.....	10.3	10.2
Kentucky	10	9.8	9.3	9	.....	.....	10.4	9.7
Missouri	11.1	10.1	10	9.3	.....	.....	10.8	10.6
Illinois	9.9	9.5	8.6	8.3	.....	.....	9.6	9.8
Indiana	9.8	9.5	9.3	8.6	.....	.....	9.9	9.8
Ohio	10	9.6	9	8.9	.....	.....	9.1	9.9
Michigan	9.6	9.1	8.8	8.1	.....	.....	9.1	9.1
Wisconsin	10.1	9.3	8.6	8	.....	.....	8.8	8.2
Minnesota	11.2	9.7	9.3	8.3	.....	.....	10	9.4
Iowa	11.4	10.2	9.4	8.8	.....	.....	9.9	9.8
Kansas	10	10	10	10	.....	.....	12.7	8.6
Nebraska	10.9	9.5	10.9	10	.....	.....	11.6	10
California	14.3	10.4	.....	.....	.....	.....	10	9.6

Condition of the crops, &c.—Continued.

STATES.	Cotton.		Wool.	Apples.	Peaches.	Grapes.	Straw-berries.	Cran-berries.
	Acreage compared with last year.	Average condition July 1st.	Amount of wool, *in tenths*, compared with last year.	Average condition July 1st.	Average condition July 1st.	Average condition July 1st.	Product, compared with last year.	Average condition July 1st.
Maine	.....	.....	7.6	8.5	.....	9.5	9.8	9.3
New Hampshire	.....	.....	8	8	8.3	9.9	11	9.7
Vermont	.....	.....	8.5	9.7	.....	10.6	11.2	.....
Massachusetts	.....	.....	9.1	7.3	10.3	9.4	12.2	11.5
Rhode Island	.....	.....	10	7.3	10.6	11.3	11.3	9.5
Connecticut	.....	.....	8.6	7.3	7.6	10	12	9.6
New York	.....	.....	8.6	9.7	11.6	10.3	11.8	9.7
New Jersey	.....	.....	9.9	11	15.4	12	12	11.5
Pennsylvania	.....	.....	9.4	10.9	13.5	10.8	11.2	10.2
Delaware	.....	.....	9	12	14.5	12	13	.....
Maryland	.....	.....	10	11.3	11.4	11.4	12.6	10
Virginia	8.2	8.7	9.5	10.6	12.5	11	11.6	.....
North Carolina	11	8.8	9.7	7	4.6	10	10.3	10.7
South Carolina	10.9	7.2	8.6	6.4	5.4	9.7	8.8	.....
Georgia	11.8	10.3	9.2	7.6	6.2	9.5	9.2	.....
Florida	12.5	10.6	9	.....	9.2	10.4	10	.....
Alabama	10.8	9	9.4	7.2	6.8	7.5	10.5	.....
Mississippi	11.4	8.9	9.6	8.8	7.1	9.5	9.9	.....
Louisiana	11.6	9	10.2	9.1	7	9.1	10.6	.....
Texas	13.2	9.4	6.7	9.2	9.8	10.2	11.5	.....
Arkansas	12	8.9	9.8	9.3	8.2	9.2	10.2	.....
Tennessee	9.6	8.1	10.2	7.1	5.3	9.8	10.2	10
West Virginia	.....	.....	9.3	13.7	13.6	10.7	11.8	9.7
Kentucky	9.6	9.6	9.4	10.5	11.5	10.4	11.1	.....
Missouri	9.2	9.5	11	11.9	8.7	10.4	12.3	.....
Illinois	8.2	8.4	9.4	10.8	9.3	10.3	12.5	.....
Indiana	.....	.....	9	11.2	10.6	10.5	12.2	12
Ohio	.....	.....	8.3	9.8	12.1	10	11.9	11.4
Michigan	.....	.....	9.3	10.7	12.3	10.9	12.1	10.5
Wisconsin	.....	.....	9.5	12.9	.....	10.9	11.8	11.2
Minnesota	.....	.....	9.7	11.9	.....	9.3	11.6	10.3
Iowa	.....	.....	9.3	11.4	9.3	10.7	12.5	10.7
Kansas	.....	.....	11.9	10.1	5	11.1	13.5	.....
Nebraska	.....	.....	10.3	10.5	9	9.8	13.1	.....
California	.....	.....	19.5	9.8	9.3	14.1	11.1	.....

NOTES ON THE CROPS.

WHEAT.

Androscoggin County, Maine.—Season backward, but grain crops stand about as last year.

Norway, Maine.—Grain never looked better.

Steuben, Maine.—Grain is looking well.

York County, Maine.—All crops promising.

Norfolk County, Mass.—Little wheat sown, but the crop is promising.

Steuben County, N. Y.—Winter wheat threatened with rust, owing to continued rains.

Seneca County, N. Y.—Very wet weather; wheat in danger from rust.

Genesee County, N. Y.—Winter wheat stands very thin on the ground.

Tompkins County, N. Y.—Grains very heavy; the weather unusually wet and cool. If wet weather continues, the damage to crops will be considerable.

Westchester County, N. Y.—Wheat is looking well, but will be seriously injured if the wet weather continues.

Jefferson County, N. Y.—The grain crops look well, and promise a bountiful yield.

Yates County, N. Y.—Wheat is generally heavy, and if not rusted would exceed the average yield, but excessive wet weather has induced rust, and if no change occurs for the better the crop will be almost a failure.

Tioga County, N. Y.—Wheat very fine.

Alleghany County, N. Y.—Wire worms are injuring the spring grains in some towns.

Niagara County, N. Y.—Wheat improved very rapidly in June.

Onondaga County, N. Y.—Wheat never looked better.

Ocean County, N. J.—Wheat has been injured in some localities, but the crop will be above the average.

Sussex County, N. J.—The winter grain has advanced rapidly since last report. The season has been such as to materially advance all crops, and they stand much better than at this date last year.

Hunterdon County, N. J.—The wheat crop of this county is the largest and best for the past 20 years—well filled, good quality, straw heavy, and at this date it is considered out of danger, except from hailstorms.

Lebanon County, Pa.—The wheat crop is the best we have had in ten years, and is almost ready to cut.

Perry County, Pa.—The wheat crop promises to be one of the best ever harvested here; it is thick on the ground, and the heads are longer and larger than last year; no weevil, no mildew, nor bug of any kind, to injure it.

Lancaster County, Pa.—Wheat promising.

Columbia County, Pa.—Prospect fair for wheat.

Westmoreland County, Pa.—The hail storm of the 28th of May almost totally destroyed the wheat and rye over a narrow strip of land through the county.

Lycoming County, Pa.—Wheat very fine; best prospect since 1856.

Indiana County, Pa.—Wheat prospect never better, though the crop is not yet out of danger. The growth of straw is rank, and much has been thrown down. Some complaint of mildew.

Baltimore County, Md.—Wheat crop the best for many years; excellent both in quality and quantity.

Cecil County, Md.—Wheat stands well, and appears to be well filled.

Queen Anne County, Md.—Wheat crop heavy and the grain generally plump.

St. Mary's County, Md.—There is apprehension among farmers that there will be found less grain than straw in the wheat crop.

Bath County, Va.—Finest season for wheat for many years past.

Buckingham County, Va.—Winter wheat is considerably injured by smut.

Wythe County, Va.—Best crop of wheat for many years.

King George County, Va.—The wheat crop is the best harvested for several years. The grain is full and promises to be heavy. The yield is probably double that of last year.

Randolph County, N. C.—Wheat being harvested; the crop is of excellent quality, and will do much to make up the deficiency of the past two or three years.

Lincoln County, N. C.—Wheat better than for many years—at least four hundred per cent. better than last year.

Burke County, N. C.—The wheat crop is said to be the best for ten years. The Tappahannock wheat is superior.

Davie County, N. C.—The yield of wheat is the largest for ten years.

Granville County, N. C.—The wheat crop is very superior; better grain than for many years.

Stokes County, N. C.—Wheat extra good.

Sampson County, N. C.—Wheat very fine; all harvested.

Harnett County, N. C.—Wheat better than for fifteen years.

Green County, N. C.—Wheat at least twenty per cent. better than last year.

Jackson County, N. C.—The wheat crop is fifty per cent. above that of last year.

Abbeville County, S. C.—Wheat better than last year; less sown, but the heads are well filled and grain very full and fine; at least twenty per cent. better than last year.

Spartanburg County, S. C.—Wheat is cut and unusually fine.

Early County, Ga.—Wheat harvested in May rusted and proved a total failure.

Stewart County, Ga.—Wheat injured by rust.

Clay County, Ala.—Wheat crop harvested. The yield is almost unprecedented, as well as the acreage.

Brookville, Miss.—Wheat crop very poor. Some fields entirely destroyed by the rice birds.

Burnet County, Texas.—Wheat yields about half a crop.

Dallas County, Texas.—Wheat is harvested; good quality; new flour in market on the 16th of June.

Fannin County, Texas.—The wheat crop is harvested and mostly threshed; the quality is very fine and the yield good.

Upshur County, Texas.—The wheat crop is small, owing to the scarcity of seed.

Sebastian County, Ark.—Wheat is heavier than it has been for the last four years.

Crawford County, Ark.—Wheat very fine, but being injured in the shock by rain.

Independence County, Ark.—Wheat crop the best in ten years.

Sullivan County, Tenn.—Wheat harvested; lighter than anticipated, but the grain is full and plump.

Coffee County, Ga.—Wheat crop harvested; quality and yield better than for any year since 1855.

Fayette County, Ga.—Wheat fine and heads full.

Hickman County, Tenn.—Rust on the blade, but the wheat is little damaged.

Green County, Tenn.—Wheat crop is a good one, though falling below anticipations. Soon after the crop came into full head, millions of a small green insect appeared on the stalk within the heads. As they enlarged in size they turned brown, and finally disappeared. Whether they abstracted juice from the tender stalk, or the crop was affected by the continued wet weather, many parts of heads ripened prematurely, which will tell upon the yield to some extent.

Trenton, Tenn.—Large yield of wheat, but the crop is likely to be damaged by sprouting in the shock.

Elizabethton, Tenn.—An excellent crop of wheat.

Robertson County, Tenn.—Some scab and smut in the wheat, but the grain is fine and yield good.

Giles County, Tenn.—Good wheat crop; all harvested.

Montgomery County, Tenn.—The rust stripped wheat to the naked stem. It destroyed a few crops, injured more, and left unhurt the great body of the crop. The heaviest crop since 1860. The Tappahannock wheat escaped the rust in the same field in which the Michigan white rusted badly.

Dyer County, Tenn.—Wheat of excellent quality and in increased acreage.

Monroe County, West Va.—The wheat crop promises to be double that of any season within five years.

Hardy County, West Va.—Many fields of late sown wheat on low lands have been injured by rust; the early sown is not affected.

Jefferson County, West Va.—The grain of the wheat crop is better than for three years past.

Berkley County, West Va.—Finest crop of wheat in the last ten years.

Monongahela County, West Va.—Wheat crop the largest ever grown in the county.

Graves County, Ky.—Wheat two-tenths, perhaps three-tenths, better than last year. The yield is expected to reach ten to twelve bushels per acre. Rust appeared on the blade, but there is not much complaint.

Lincoln County, Ky.—Wheat crop never better at date.

Johnson County, Ky.—The rust is making its appearance, and with the recent warm rains it is feared the crop will be injured to some extent.

Henry County, Ky.—The wheat crop of this year bids fair to exceed by large odds any previous crop. As a consequence the price of wheat has declined already. Offers are being made at one dollar per bushel, which will probably be the ruling price.

McCracken County, Ky.—Wheat blades attacked by rust; otherwise all right. Tappahannock wheat about ten per cent. better than red May. Red chaff preferable.

Trimble County, Ky.—Prospect never better for a fine wheat crop.

Livingston County, Ky.—A fair crop of wheat.

Owsley County, Ky.—Wheat excellent—best crop for twelve years.

Pike County, Mo.—Excessive rains; but little wheat cut; the ground is too soft for the reapers to do much, and there are not cradlers enough to save one-tenth of the crop.

Adair County, Mo.—Wheat struck by the rust, but not much injured yet.

Mississippi County, Mo.—Wheat turns out well.

Linn County, Mo.—Wheat in danger from excessive rains. The ground is so soft that machinery cannot be used in harvesting.

Holt County, Mo.—Promise of a great wheat crop.

St. Louis County, Mo.—Immense crop of wheat, but it is in danger from continued rains.

Howard County, Mo.—Wheat crop the largest ever raised; in danger of injury from wet weather.

Cole County, Mo.—Wheat in danger from the continuous rains. The crop is very large—forty to fifty per cent. greater than last year.

Moniteau County, Mo.—Wheat on timber lands is more promising than ever before. On the prairie lands it was considerably winter-killed, but has come out very much, and looks splendidly. No rust, but much smut.

Marion County, Mo.—It is now thought that the yield of wheat will not equal that of last year.

Jefferson County, Mo.—Wheat much above the average.

Dent County, Mo.—Wheat thirty per cent. above the crop of last year, but is liable to injury from wet weather.

Randolph County, Ill.—Wheat crop very heavy, but danger of injury from wet weather.

Washington County, Ill.—Some pieces of wheat ruined by rust. If the wet weather continues a great deal will be injured.

Effingham County, Ill.—Crop uninjured, but rendered difficult to secure by reason of the wet weather.

Iroquois County, Ill.—Prospect unfavorable, owing to continued wet weather.

Montgomery County, Ill.—In some sections the army worm has done considerable damage, and some fields of wheat have been injured by a worm in the head, destroying the grain.

Macomb County, Ill.—Fall wheat has filled, but not yet ripened. There seems no way of harvesting it, except with the old-fashioned cradles, as the machines could not be dragged through the fields within a week, if there should be no more rain. The spring wheat is not promising. There is a large amount of old wheat and corn on hand to help out.

Marshall County, Ill.—With fair weather wheat will yield a fair crop; if the rains continue there will be almost a total failure in this county, except upon high rolling ground.

Winnebago County, Ill.—Wheat has made a rank growth, but rust having appeared, great fears are entertained for the result.

Union County, Ill.—Wheat crop extra good, both in quantity and quality.

Louisville, Ill.—Wheat harvested; excellent crop.

Golconda, Ill.—Wheat crop excellent.

Loami, Ill.—Wheat injured by wet weather.

Dubois, Ill.—Wheat harvested; crop fully double that of last year.

Knox County, Ill.—Small grains are badly lodged, and fears are entertained that rust will take the wheat and oats.

Fulton County, Ill.—Spring wheat, oats, and barley are in a very critical condition.

St. Clair County, Ill.—Wheat very fine so far, but there is great danger of spoiling in the shock, on account of excessive rains. The low and level fields cannot be harvested with reapers, and labor at $3 to $3 50 per day and board is too much for the slow mode of cradling wheat.

Lake County, Ill.—The small grains cannot fill unless settled weather soon sets in.

Champaign County, Ill.—From present indications our winter wheat is far ahead of the crops of former years, but if the rust continues it will greatly injure the crop.

Lee County, Ill.—Wheat seriously damaged by incessant rains, causing excessive growth.

Du Page County, Ill.—Rank growth of small grains; in danger of rust and lodging.

Ford County, Ill.—Danger of injury to wheat from rust.

Putnam County, Ill.—Wheat will not yield an average crop, owing to the wet weather.

Perry County, Ill.—Wheat all in shock. If the heavy rains continue it will be much injured; otherwise the crop will be fine.

Tazewell County, Ill.—Floods have almost totally destroyed crops in bottom lands.

Douglas County, Ill.—Wheat injured by chinch bugs.

De Witt County, Ill.—Wheat seriously damaged by wet weather. There will probably be hundreds of acres left unharvested.

Dubois County, Ind.—Wheat is better than for many years. Mostly out of danger from rust.

Vanderburgh County, Ind.—Frequent and warm rains; weather favorable for most crops. Wheat nearly all harvested.

Miami County, Ind.—Wheat badly lodged. No rust. Extra breadth of wheat sown, and this will be the largest harvest ever known in the county.

Fayette County, Ind.—Wheat is lodged to considerable extent. Some scab and rust; no midge.

Marion County, Ind.—Wheat crop injured by excessive rains.

Pike County, Ind.—Wheat an average in condition, with one-third increase in acreage. The swamp wheat is clear of smut, spot, and rust.

Warren County, Ind.—Wheat damaged by rain. Rust has made its appearance.

Kosciusko County, Ind.—Wheat is filling finely. If the weather continues favorable the yield will be larger than for many years. There is apprehension of injury from wet weather and rust.

Marion County, Ind.—Wheat badly down.

Brown County, Ind.—Never had a better yield of wheat. More than fifty per cent. greater than last year.

La Grange County, Ind.—Season very wet. Wheat in danger from rust.

Putnam County, Ind.—Excessive rains threatening wheat.

Boone County, Ind.—Wheat greatly injured by wet weather.

Porter County, Ind.—Wheat damaged by wet weather.

Butler County, Ohio.—The yield of wheat will exceed any crop raised within the last five years.

Hancock County, Ohio.—Wheat much down and tangled. Wheat in half a township almost entirely destroyed by hail.

Portage County, Ohio.—Wheat looking well, but much of it is lodged and harvest will be expensive.

Van Wert County, Ohio.—Recent storms have broken down some weak-strawed grain.

Greene County, Ohio.—Wheat has not promised so well for years.

Athens County, Ohio.—Good prospect for wheat.

Holmes County, Ohio.—Wheat very heavy as regards straw, and a portion of it is well filled. Some fields are not so forward, and there is some complaint of rust.

Jacksonville, Ohio.—Best wheat crop since 1862.

Hardin County, Ohio.—Wheat very superior.

Bowling Green, Ohio.—Wheat heavy—large growth.

Medina County, Ohio.—Winter wheat is badly down, but a good yield is hoped for notwithstanding.

Union County, Ohio.—Wheat filling up nicely, and free from all damage as far as can be seen.

Lucas County, Ohio.—Wheat injured by rust; is badly lodged, and is probably not well filled.

Meigs County, Ohio.—Fine crop of wheat.

Kalamazoo County, Mich.—There is a heavy growth of wheat straw; late and badly lodged on account of continuous rains.

Lapeer County, Mich.—Much of the wheat prostrated by storm; there is a heavy growth of straw with winter wheat.

Washtenaw County, Mich.—Wheat has an unusual growth, with promise of large yield.

Cass County, Mich.—Wheat good, but falling below anticipations.

Macomb County, Mich.—Wheat promises a very abundant crop.

Mason County, Mich.—Grains looking finely.

Grand Traverse County, Mich.—Wheat promises a full average harvest.

Litchfield, Mich.—Wheat falling down and rusting.

Walworth County, Wis.—Spring wheat has too rank a growth to promise a good crop, and the same is true in a less degree of oats.

Washington County, Wis.—Wheat has a rank growth.

Winnebago County, Wis.—Wheat is in a critical condition, as it is standing in water and is turning yellow.

Green County, Wis.—Wheat has seldom looked so promising; the only fear being that the wet weather may cause rust.

Green Lake County, Wis.—Wheat is looking well so far as the straw is concerned, but farmers are apprehensive that the yield of grain must be diminished, especially if the weather should continue wet.

Jackson County, Wis.—Small grains promising; too much straw, however.

Plymouth, Wis.—The spring wheat is turning yellow.

Watonwan County, Minnesota.—Fair crop of wheat in prospect.

St. Paul, Minnesota.—Wheat never stood thicker on the ground.

Washington County, Iowa.—Fall wheat shows signs of rust.

Benton County, Iowa.—If the rains continue, wheat will be materially injured; some pieces are already lodged.

Madison County, Iowa.—With favorable weather until harvest, the wheat crop of this county will be fifty per cent. larger than last year.

Lee County, Iowa.—The straw of all small grains is weak; much has already fallen.

Muscatine County, Iowa.—Wheat attacked by rust, but not seriously damaged as yet. The straw is very heavy, and is falling in many places.

Cedar County, Iowa.—All small grains look well; almost too much straw.

Wayne County, Iowa.—Wheat never looked so well, but it is in danger from continuous rains.

Johnson County, Iowa.—Winter grains promising.

Floyd County, Iowa.—Very heavy growth of straw, and if the wet weather continues it must go down.

Harrison County, Iowa.—Wheat on the hills looks well, but on the bottoms it is lodged and tangled.

Jackson County, Iowa.—Wheat has grown rank, and farmers fear it will fall and rust.

Adams County, Iowa.—Wheat has the largest growth of straw known in twelve years.

Waukon, Iowa.—Wheat crop above average.

Summitville, Iowa.—Crops damaged by continuous rains. Fall wheat injured by rust; spring wheat badly scabbed; there will not be more than half a crop.

Cherokee County, Kansas.—Much winter wheat killed, and put in sorghum and corn.

Shawnee County, Kansas.—Too much rain for harvesting; spring wheat ten days later than usual.

Atchison County, Kansas.—Spring wheat ruined by locusts, and some farmers have planted corn in place of the wheat.

Riley County, Kansas.—Wheat is superior, but in danger of injury from wet weather.

Nemaha County, Kansas.—All small grains promising, with increased acreage. Grasshoppers are doing some damage.

Miami County, Kansas.—Wheat mostly harvested; considerable loss on account of the rains.

Douglas County, Kansas.—Promise of good harvest, though small grains threaten to lodge.

Coffey County, Kansas.—Winter wheat crop as good as ever known, the drilled fields yielding best; the crop will be injured considerably, however, by the continuous rains. Hand cradles have to be used in some cases, and the cradlers often wade through deep mud.

Morris County, Kansas.—Winter wheat is ripe, plump, and fine; a greater breadth and heavier yield than ever before known in this county. The continuous rains threaten much damage to crops.

Otoe County, Neb.—Wheat looks remarkably well.

Cuming County, Neb.—Wheat never appeared more promising. The crop of this county last year reached fifty thousand bushels. The yield this season will exceed one hundred thousand bushels.

Cass County, Neb.—The growth of wheat is rather rank.

Jefferson County, Neb.—Spring wheat promises a very large yield.

Santa Clara, Cal.—Rust has done great damage to the wheat crop in this county. It appears upon the high land as well as upon the low, which is unusual in this climate.

San Bernardino County, Cal.—Owing to heavy fogs while the wheat was in bloom, quite a large amount was struck with rust, in some cases destroying it entirely, and in others causing the grain to shrink.

Watsonville, Cal.—A portion of the wheat rusted; the remainder of the crop is very fine.

Marion County, Oregon.—Winter wheat is safe for a good yield; but late sown grain, especially that on dry upland, has been somewhat shortened, owing to the dry weather.

Columbia County, Oregon.—Wheat looks well, though the heads are short; too far advanced for rain to do any good now.

St. Joseph, Arizona.—The wheat crop promises a yield of about twenty-five bushels per acre for the early sown; free from rust, smut, or any other injury. The late wheat is quite light, and will probably not average over eighteen bushels to the acre.

CORN.

Sagadahoc County, Maine.—Season backward. Too cool and wet for corn.

Steuben, Maine.—Corn backward.

Gardiner, Maine.—Corn will be a failure, unless July gives more heat than June has given.

Hillsborough County, N. H.—Corn backward, but looking well.

Norfolk County, Mass.—Decreased corn acreage, and crop backward, owing to constant rains.

Warren County, N. Y.—The cold, wet weather has been very unfavorable for corn.

Genesee County, N. Y.—Corn small and backward. Too much cold wet weather.

Seneca County, N. Y.—Corn backward; cannot be worked on account of incessant rain.

Jefferson County, N. Y.—Corn is backward.

Yates County, N. Y.—Corn planted late, but it is now growing. A favorable autumn would give an average crop.

Tioga County, N. Y.—Corn large, but injured by cut worm, wire worm, and bugs.

Alleghany County, N. Y.—Corn backward, owing to cold, wet weather.

Niagara County, N. Y.—The cutworm has done a great amount of damage to corn. The crop is not promising.

Hunterdon County, N. J.—Corn at this time promises well.

Burlington County, N. J.—The latter part of June has been remarkably favorable for the growth of all crops. Corn is growing rapidly.

York County, Pa.—Heavy rains and slight hail storms in May and June required the replanting of corn to some extent.

Lancaster County, Pa.—Corn promising.

Montgomery County, Pa.—From present appearances the corn crop will be very heavy.

Cambria County, Pa.—Corn is improving very fast.

Lycoming County, Pa.—Corn very backward; but there is a fair amount on the ground—about the same as last year.

Indiana County, Pa.—Corn short for the season.

Carlisle, Pa.—Corn is looking well.

Elk County, Pa.—Corn is in very poor condition, owing to the wet weather.

Queen Anne County, Md.—Corn, which has been backward, has greatly improved.

Baltimore County, Md.—Corn is below an average in condition, but favorable weather is bringing the crop forward rapidly.

Bath County, Va.—Corn late and not promising.

Surry County, Va.—Corn in fair condition.

Smith County, Va.—Favorable weather has brought corn up to an average.

Wythe County, Va.—Corn never looked worse on the 1st of July; but it is now improving, and may make an average crop.

Burke County, N. C.—The season has been too wet and cold for corn, and the crop is backward, especially on the lowlands.

Greene County, N. C.—Corn is in fine growing condition.

Currituck County, N. C.—Corn a little backward, but promises a better crop than for several years past.

Stokes County, N. C.—Corn not doing well, owing to wet weather.

Harnett County, N. C.—Corn is backward.

Sampson County, N. C.—Corn is looking finely.

Edgecombe County, N. C.—The weather has been remarkably favorable for corn, and the crop promises an average yield.

Abbeville County, S. C.—Corn backward and not promising. Less planted than last year.

Early County, Ga.—Corn planted late and badly cultivated, but rains are bringing it up. About one-fourth of the crop will not be safe before the middle of July.

Columbia County, Ga.—Corn started late, but has been doing well since the warm rains of June.

Glynn County, Ga.—Corn has suffered from want of rain.

Coweta County, Ga.—Corn backward, and suffering for rain.

Stewart County, Ga.—Prospect flattering for corn.

Greene County, Ala.—Corn is growing well.

Brooksville, Miss.—Corn late and a poor stand—in many places almost an entire failure, there being but one really splendid crop in the county. This crop, on three hundred acres, will yield ten thousand bushels. It made a good stand the first planting, was well cultivated before the cotton required much attention, and was well advanced before the dry spell came on. The two neighboring crops, of five hundred acres each, will not make three thousand bushels. They have been plowed but once, and only partially thinned. Many fields will not yield a perfect grain. Corn has been selling all summer at fifty to sixty cents per bushel, but it now brings one dollar, and before next spring it is likely to command one dollar and fifty cents per bushel in this section.

Jackson County, Fla.—Corn is very promising.

Levy County, Fla.—Corn is nearly ruined by the drought.

Morehouse Parish, La.—The corn crop is the most promising one for many years, and with one or two more rains this parish will raise enough to supply it for two years.

Washington County, La.—Corn promising.

New Orleans, La.—Corn and sweet potatoes very luxuriant.

Burnet County, Texas.—Prospect for a good corn crop is yet promising, though a few weeks' drought would destroy it.

Goliad County, Texas.—Acreage of corn increased, and the condition is better than for years past.

Washington County, Texas.—The corn crop promises to be the best ever grown here.

Upshur County, Texas.—Corn is very late, and in some localities the prospect is unfavorable.

Walker County, Texas.—Corn crop promising.

Desha County, Ark.—Corn is healthy and in fine condition.

Arkansas County, Ark.—Corn promising, with good acreage planted.

Crawford County, Ark.—Corn crop looking well.

Lafayette County, Ark.—Corn in flourishing condition, and promises large yield.

Coffee County, Tenn.—Corn backward, but with favorable weather henceforth an average crop may be raised.

Fayette County, Tenn.—Corn small, but looking well.

Robertson County, Tenn.—Corn late, but now doing well.

Jefferson County, W. Va.—Corn is backward, but improving.

Preston County, W. Va.—Corn is now doing well.

Monongahela County, W. Va.—Corn backward, but now growing, and promises a good crop.

Cabell County, W. Va.—Wheat crop the best grown since 1862.

Grares County, Ky.—Corn about an average compared with last year, but much later in consequence of wet, cold, backward spring. In good condition, however.

Adair County, Mo.—Corn does not look well.

Lewis County, Mo.—Corn is small and yellow; generally a poor stand and full of weeds. The army worm is doing considerable damage in the meadows.

Mississippi County, Mo.—Corn will be better than last year.

Daviess County, Mo.—The white grub worm is destroying the corn, and working upon some other crops.

St. Louis County, Mo.—Corn promising.

Linn County, Mo.—Corn very backward, and in the weeds; too wet to work it.

Macon County, Mo.—Corn on flat lands promises to be almost a failure. Prospect good on rolling lands.

Marion County, Mo.—Wet weather has prevented the working of corn. Crop very unpromising, especially on flat prairies.

Rock Island County, Ill.—Corn very weedy, and in many places turning yellow.

De Witt County, Ill.—Wet weather has played sad havoc with the corn crop; promise of not more than half a crop.

Douglas County, Ill.—White grubs at work on the corn.

Steuben County, Ill.—Corn backward and much damaged by heavy rains.

Cook County, Ill.—Corn very poor, owing to wet weather.

Hancock County, Ill.—Corn acreage limited on account of wet spring, and cultivation retarded by same cause.

De Kalb County, Ill.—With the most favorable weather corn is not likely to make more than half a crop.

Macomb County, Ill.—On flat lands the cornfields look like a wilderness of weeds, and all attempts to clean them out only roll the weeds in piles, to take new root.

Effingham County, Ill.—Corn is very weedy on account of the wet weather.

Marshall County, Ill.—Corn is very sick; weeds are higher than the corn, and have such a start that it will now be difficult to get them under. With favorable weather henceforth the crop may turn out better than now expected.

Winnebago County, Ill.—Corn suffering from excessive rains. Nearly all on the river bottoms is under water; much of it has not been plowed.

Livingston County, Ill.—Corn prospect is very poor. The ground is so soaked and wet that it is impossible to cultivate the land.

Lake County, Ill.—The prospect is gloomy for a corn crop. Not one-third of the area planted has yet been gone through with the cultivator.

St. Clair County, Ill.—Corn cannot be more than half a crop, as it is not two feet high, and the ground is wet and foul with weeds.

Fulton County, Ill.—Hundreds of acres of corn have already been given up to weeds and water, and many more must follow if the wet weather continues.

Du Page County, Ill.—Corn in flat tracts very poor and weedy; prospect unfavorable.

Lee County, Ill.—Corn seriously injured by continuous rains.

Cumberland County, Ill.—Season backward; corn late in planting.

Ford County, Ill.—Weather not favorable to corn; much required replanting—some twice. The wet weather has delayed cultivating, hence too many weeds.

Putnam County, Ill.—Corn cannot be more than three-fourths of a crop on the level prairies, on account of continued rains.

Stephenson County, Ill.—Corn backward, but may come all right with good weather.

Warren County, Ill.—Corn injured by heavy rains.

Macon County, Ill.—Corn very foul, owing to excessive rains.

Union County, Ind.—Corn has been injured by grub and cut worm, and is very backward, but will make a fair crop, with favorable season henceforth.

Vanderburgh County, Ind.—The weather has been exceedingly favorable for most crops.

Whiteley County, Ind.—Corn late, but looks fair, though it is small and has been poorly worked.

Starke County, Ind.—Corn injured by excessive rains.

Marion County, Ind.—Corn backward. Most of that on bottom lands drowned out, but generally replanted.

Fayette County, Ind.—Corn on the hill lands has been washed out, and on the flat lands drowned out. The crop has been injured by the grub worm also, but looks well on the dry bottom fields.

Cass County, Ind.—The poorest prospect for corn within twenty years. It is impossible to cultivate it.

Fountain County, Ind.—At least five thousand acres of corn destroyed by the floods.

White County, Ind.—The season is the wettest one for a quarter of a century, interfering seriously with the planting and cultivation of corn. In all low grounds it is standing in water and almost choked out with grass and weeds.

Porter County, Ind.—Corn much injured by rains.

Vinton County, Ohio.—The wet and cold weather has retarded corn, though it looks tolerably well.

Ashland County, Ohio.—Season rather wet for corn.

Holmes County, Ohio.—Corn planted late, and is consequently small, but is now growing finely.

Bowling Green, Ohio.—Corn suffers from wet weather, and begins to look yellow.

Meigs County, Ohio.—The early part of the season was too wet for corn, but the crop is fast making amends.

Medina County, Ohio.—Owing to continued rains, much corn was planted late, and now it cannot be cultivated properly.

Union County, Ohio.—Corn replanted twice, owing to heavy rains.

Lucas County, Ohio.—Corn injured by heavy rains. Some farmers are preparing to sow their corn-fields to buckwheat.

Kent County, Mich.—Corn is backward, but it stands unusually well.

Bay County, Mich.—Corn is very backward. It will take corn until the last of September, with favorable weather, to ripen.

Calhoun County, Mich.—Corn suffering from excessive rains.

Ottawa County, Mich.—The rain and worms have ruined many corn-fields.

Mason County, Mich.—Corn very backward; too much rain. On low lands the crops will be very poor.

Macomb County, Mich.—Weather very wet; corn very poor.

Washtenaw County, Mich.—Corn backward, owing to the late spring and excessive rains.

Cass County, Mich.—Corn backward and grassy.

Genesee County, Mich.—Corn poor; injured by the wet weather and the cut worm.

Northport, Mich.—Corn chilled and drowned out. Nothing but continuous warm weather can save the crop.

Grand Traverse County, Mich.—Corn soaked before planting had to be replanted.

Berrien County, Mich.—Corn will be a short crop, owing to the wet weather and the depredations of the grub worms.

Kenosha County, Wis.—Poor prospect for corn. The weather is cold, and rain falls almost continuously.

Rock County, Wis.—Corn much injured by excessive cold rains.

Walworth County, Wis.—The season has been bad for corn, besides which the worms have done much injury. One-third of the crop planted has been destroyed. At this date corn is growing rapidly.

Waushara County, Wis.—Corn poor, owing to the rain and cold; and whatever it gains now will be at the expense of the small grains.

Washington County, Wis.—Corn growing very slowly.

Bayfield County, Wis.—Cut worms have done considerable damage.

Ozaukee County, Wis.—Corn on low grounds is rotting, owing to constant rains.

Jefferson County, Wis.—Continued rains have prevented the planting of the usual breadth in corn; and the acreage planted is unusually backward.

Winnebago County, Wis.—Corn is in a critical condition. The wettest season for many years.

Green County, Wis.—Corn not looking well as usual, owing to constant and heavy rains.

Chaska, Minn.—Corn backward, but now growing rapidly.

Watonwan County, Minn.—Corn not promising.

Cass County, Minn.—Corn injured by the worms.

Washington County, Iowa.—Rains for ten days past; corn badly washed out; growing very weedy.

Benton County, Iowa.—Corn is in poor condition on account of rain and cold; some fields destroyed by ground squirrels.

Lee County, Iowa.—The wet weather has lessened the acreage of corn, drowning out large quantities. There can hardly be more than half a crop, probably not more than one-third. Thousands of acres of flat lands drowned out. Corn generally very foul, and not a good stand.

Appanoose County, Iowa.—Corn in worst possible condition; rain almost daily, and the fields are overrun with weeds; half a crop is as much as can be made under the most favorable circumstances.

Linn County, Iowa.—Corn backward; excessive rains.

Sac County, Iowa.—Corn backward, but now doing well, and may make an average crop with favorable season.

Des Moines County, Iowa.—Too much rain; there will be a vast amount of corn left without cultivation, and the loss will be heavy in the general average.

Johnson County, Iowa.—Corn retarded by excessive rains.

Cedar County, Iowa.—Corn looks sickly.

Muscatine County, Iowa.—Corn set back by rains.

Floyd County, Iowa.—Corn is now growing very fast, and favorable weather may bring up the crop.

Harrison County, Mo.—Corn very backward.

Riley County, Kansas.—A poor stand of corn; suffering for cultivation; blackbirds and heavy rains chief causes of damage.

Cherokee County, Kansas.—Corn acreage increased by planting over winter-killed wheat.

Coffey County, Kansas.—A great deal of corn under water; winter wheat as good as ever.

Franklin County, Kansas.—Corn late, but prospect of an average crop.

Douglas County, Kansas.—Corn late on account of wet season.

Miami County, Kansas.—Corn is looking well, though somewhat foul; weather too wet for plowing; no grasshoppers, and chinch bugs all destroyed by rains.

Nemaha County, Kansas.—Corn small and pale.

Woodson County, Kansas.—Corn injured by excessive wet weather.

Otoe County, Neb.—Corn delayed by the cold, wet weather.

Cuming County, Neb.—Too wet and cold for corn; crop looking very badly.

Dixon County, Neb.—A frost in June froze the corn almost to the ground.

Cass County, Neb.—Corn is rather backward.

Beaufort County, N. C.—Cotton in bad condition, caused by frost and cold weather.

Greene County, N. C.—Poor stand of cotton, owing to the lateness of the season. The condition of the crop is not equal to that of last year at the same date; but if the present warm weather continues the crop will compare favorably by the 1st of August.

Mecklenburg County, N. C.—A very cold spring killed the cotton plants, and there is not more than half a stand. With favorable season henceforth there will not be more than half a crop in this county.

Duplin County, N. C.—Cotton at least fifteen days late. About three-fourths of the cotton in the county was plowed up and replanted—much planted the second time failed to make a good stand.

Harnett County, N. C.—Cotton has improved considerably since last report.

Sampson County, N. C.—Cotton looks finely, though not a good stand.

Abbeville County, S. C.—Cotton very backward for the season. Plants healthy and time enough yet for a good crop.

Richland County, S. C.—The condition of the cotton crop has improved vastly within a month, and the hot sun is repairing the damage by late spring and frosts, and a fair yield is expected.

Spartanburgh County, S. C.—Cotton not more than half a stand. It is late, but growing finely.

Edgecombe County, N. C.—Cotton is rapidly improving; the weather has been remarkably favorable, and if the season continues and the fall be favorable, the crop may come within one-fifth of an average.

Chester County, S. C.—There is not over two-thirds of a stand of cotton, the cold and wet having killed the plants after coming up. The same causes have made the plant small and backward, but it is now improving rapidly.

Newberry County, S. C.—The stand of cotton is generally bad, and the plants backward. It has improved very much during the last two weeks.

Columbia County, Ga.—Cotton got a late start, but is doing well since the warm rains of June, and being highly manured bids fair to make more than last year. The freedmen are working better than last year.

Pierce County, Ga.—Cotton backward, but the plant promises remarkably well.

Early County, Ga.—Cotton planted late, and hence is now backward. Many have been swindled in buying improved seed, and have poor stands; but there has been more manure used and better cultivation

Baldwin County, Ga.—Cotton is about equal in area and better in its promise of yield than last year. Its superiority depends somewhat on the better season, but mainly on the larger use of fertilizers.

Decatur County, Ga.—The cotton caterpillar has appeard unusually early, but has not increased thus far.

Glynn County, Ga.—The spring was cold and late, but the weather has since been favorable for cotton.

Walton County, Ga.—Cotton is small, though growing well since the warm weather set in.

Stewart County, Ga.—Prospect rarely more promising for cotton.

Camden County, Ga.—Great increase in acreage of cotton over last year, or any year since the war.

Columbia County Ga.—Cotton is now growing finely. Fertilizers have been used liberally, and the prospect now is that the crop will be above

an average. Bloom as early as the 27th June, being several days earlier than usual.

Clark County, Miss.—Cotton is very small for the 1st of July. It is beginning to bloom, and with favorable season a fair crop may yet be made.

La Fayette County, Miss.—Cotton is late, but looks well, and with favorable weather and late fall may turn out a full crop to the acre.

Lauderdale County, Miss.—Cotton three weeks later than usual, but the past three weeks have been favorable. Clean cotton is growing rapidly, but many fields are badly in "the grass."

Pike County, Miss.—Cotton is two to three weeks later than last season, but is more promising.

Yalabusha County, Miss.—All the growing crops promise well.

Warren County, Miss.—Cotton late, but looking remarkably well.

Claiborne County, Miss.—Cotton is ten to fifteen days late.

Washington County, Miss.—The cotton is small, but is growing finely.

Brookeville, Miss.—Poor stand of cotton, and the crop in this and adjoining counties, will be short; a large amount destroyed by hail in May. Much required replanting, and this late planting cannot make more than one-fourth crop. The boll worm has already set in, and if the rains continue, the crop in this and adjoining counties will fall below that of last year.

Volusia County, Fla.—Cotton looks promising. There is a large area of land upon this peninsula admirably adapted to the culture of the long staple cotton.

Jackson County, Fla.—Cotton and cane are very promising.

Levy County, Fla.—Nothing doing well except corn.

Hale County, Ala.—Cotton healthy, but unusually small.

Macon County, Ala.—Cotton is small and not so promising as usual at this season of the year.

Greene County, Ala.—Cotton seriously affected by the cool weather. Laborers are working satisfactorily.

St. Helena County, La.—Cotton backward, but recovering rapidly, and with favorable weather the remainder of the season the crop will be an average one. There is less prospect for the worm at than this time last year, and the season is now remarkably favorable.

Morehouse Parish, La.—Cotton backward, but now growing rapidly, giving striking proof of the wonderful recuperative qualities of this plant when facilitated by the influences of a blazing sun. The freedmen are working admirably.

Hunt County, Texas.—The season has been wet and cold, but crops are as far advanced as last year. Should cotton do as well as in 1868, this county will yield three thousand bales. [The product was only twenty-two bales in 1860.]

Rusk County, Texas.—More cotton planted than last year, but it has been much injured by heavy rains. The yield per acre can hardly be as large as last year, though the plants are now growing finely. [A later report says: "Cotton never looked better; no indication of the cotton worm. If the crop meets no disaster, there will be a larger product than ever before."]

Goliad County, Texas.—Cotton is sadly damaged by the caterpillar.

Walker County, Texas.—Cotton three or four weeks late, but is in fine condition and promises an abundant yield if not cut off by the worms. Cotton has been put in almost to the exclusion of other crops.

Washington County, Texas.—Cotton promises a better crop than for many years. An increased area planted; the plants look well, and are generally well cultivated. No sign of the worm.

Dallas County, Texas.—Cotton acreage largely increased. About 3,500 acres planted. The worms are making their appearance.

Fannin County, Texas.—The high price of cotton has induced farmers to increase the area in cotton, with a considerable decrease in corn and "truck."

Upshur County, Texas.—Increased cotton acreage, but the crop is backward. With favorable weather an average crop will be made.

Anderson County, Texas.—The season is twenty days late, though unusually favorable for the growing crop, which, if escaping disaster, will be fully twenty-five per cent. larger than ever before in the State. I have made nineteen successive crops here; have traveled extensively this spring, and write from observation.

Desha County, Ark.—Cotton is in fine condition, though fifteen days late. A small increase in acreage.

Arkansas County, Ark.—Cotton backward and grassy on the uplands; stands not so good as last year; more cotton to the hand, but not so well worked; much cotton budded by the budworm. Much depends upon the weather to come. The season is promising, and the crop will probably be as large, perhaps larger, than last year.

Crawford County, Ark.—Cotton very small; weather too wet and cool; cut worms have injured much of it, and the prospect is not flattering for much above half a crop per acre; but the increased acreage will probably bring the aggregate yield up to that of last year.

Lafayette County, Ark.—Cotton is short and small, but it is blooming finely; the prospect in Red River Valley is fine, at least one-third above any year since the war.

Independence County, Ark.—All crops promising except cotton, the cool wet weather of April and May damaged this crop irreparably.

Fayette County, Tenn.—Cotton will average about two-thirds of a stand. It is looking well, and, with seasonable weather, it promises to compensate for bad stands, and probably exceed any yield since the war.

Hickman County, Tenn.—Cotton not doing as well as last year.

Lincoln County, Tenn.—Prospect of half a crop of cotton, perhaps more, with a favorable fall.

Giles County, Tenn.—Cotton ten to fifteen days late, but now growing well.

Dyer County, Tenn.—Cotton, though late, is promising, and with a favorable fall there will be an abundant yield.

Marshall County, Ill.—Cotton in general is getting more backward every year, and if the army worm makes its appearance and proves as destructive as last year, there will not be half a crop raised.

Rutherford County, Ill.—Unless there should be a late fall the yield of cotton will fall twenty per cent. below that of last year.

OTHER CROPS.

Sagadahoc County, Maine.—The season is rather backward, and the grasses are just beginning to bloom.

Piscataquis County, Maine.—Something like rust has attacked beans, occasioning considerable anxiety, as the crop is an important one in the county.

Lisbon, Maine.—Grass looks well, but will probably fall short one-fourth from last year's crop.

Gardiner, Maine.—Twenty-five to thirty per cent. less hay than last year. Potatoes very promising.

Norway, Maine.—The hay crop will not exceed three-fourths of last year's yield. Potatoes backward.

Steuben, Maine.—Potatoes are backward.

Belknap County, N. H.—Hay crop shorter than last year.

Hillsborough County, N. H.—Small grains promising. Grass crop light. Pastures poor, owing to dry weather.

Orleans County, Vt.—Hay crop good in the northern part of the county; very light in the south, owing to the drought of last year and the depredations of the mice.

Addison County, Vt.—The yield of hay will be above an average. All crops doing well.

Barnstable County, Vt.—Cranberry blossoms are abundant, with promise of far better crop than last year.

Norfolk County, Mass.—Grass deficient on all old meadows, but good on new ground. Potatoes never looked better, but in danger of blast, owing to wet weather.

Westchester County, N. Y.—Wheat, rye, oats and grass are looking well at present. Much grass lodged. Beans injured by the rains.

Queens County, N. Y.—Clover crop heavy, and much down, owing to the wet season.

Yates County, N. Y.—Rye and barley, with slight exceptions, are heavy, but subject to injury from wet weather. Grass above an average.

Tioga County, N. Y.—Oats very fine; potatoes large but injured by cut worms, wire worms, and bugs.

Hunterdon County, N. J.—Oats and rye promise the best crops within ten years.

Ocean County, N. J.—Excellent prospect for rye and oats; cranberry bloom large.

Burlington County, N. J.—Weather favorable for all crops. Timothy fields especially have improved. The rains have injured some hay. Potatoes growing rapidly.

Cumberland County, N. J.—The cultivation of small fruit is increasing rapidly in this county.

Montgomery County, Pa.—The potato and oat crops will be very heavy.

Lancaster County, Pa.—Oats, potatoes and tobacco quite promising. Hay and pastures a little short of an average. Peaches a full crop; apples and pears below an average.

Butler County, Pa.—If the weather proves favorable this season's crops will be the greatest yield to the farmer for many years.

Lycoming County, Pa.—Oats, barley and pasture are above an average, but hay will fall twenty per cent. below.

Carlisle, Pa.—Grass heavy, but hay poor, owing to frequent rains. Oats look well. Fruits promising.

Indiana County, Pa.—Oats promise well; grass very good; pasture abundant. The wet weather and the northwest winds have curtailed the fruit crops.

Queen Anne County, Maryland.—Fruits abundant. Apple-trees well filled. If fair prices be realized for the wheat and peach crop, the season will prove a highly profitable one to the farmers of this and adjoining counties.

Surry County, Va.—Increased acreage in oats; very fine. Peanuts in fair condition. Pasture very good. Apples rather better than last year. Peaches scarce.

King George County, Va.—Rye has produced better than for many years. Oats look well.

Iredell County, N. C.—Japan clover is being rapidly disseminated, and promises a complete revolution in the farming interests. In old fields single stalks have been seen 18½ inches long.

Currituck County, N. C.—Oats very fine and free from rust. More potatoes *(Solanum tuberosum)* cultivated here this year than ever before, with an excellent prospect for yield.

Columbia County, N. C.—The crops are promising, and the people are working with great energy. Wine-making promises much profit to this section.

Georgetown County, S. C.—The crops are in a precarious condition on account of the drought. No general rains within two months. Watercourses lower than they have been since 1845; and drinking-water is scarce.

Campbell County, Ga.—Apples and peaches more seriously infected with bugs and worms than ever before.

Butts County, Ga.—Apples and peaches promise not more than half crops.

Stewart County, Ga.—A flattering prospect for corn, cotton, potatoes, and peas. An unusual quantity of fertilizers has been used, and the preparation and cultivation of the crops have been better than usual, and if the season continues favorable the aggregate product will be much beyond the average. Freed labor has improved.

Glynn County, Ga.—Rice acreage increased five per cent.; condition two per cent. better than last year.

Camden County, Ga.—There are 2,500 acres in rice in this county, which is an increase of twenty-five to thirty per cent. over last year.

Jacksonville, Fla.—The May drought injured crops, but June rains have revived them, and now there is a promise of full crops throughout the State.

Line Creek County, Texas.—Better season and better prospects for good crops than for some years.

Giles County, Tenn.—Wheat, rye, and oats are harvested, and meadows mowed—all good; labor in demand.

Elizabethton, Tenn.—Crops never better.

Dyer County, Tenn.—Tobacco unusually promising; hay excellent.

Brooke County, W. Va.—There will be an average increase in agricultural products in this region of at least one-fifth.

Monongahela County, W. Va.—Oats and potatoes promising; clover and timothy very fine; pastures never better.

Jefferson County, W. Va.—Hay not as heavy as last year; potato acreage largely increased; that of sweet potatoes over two hundred per cent.; tobacco acreage increased fifty per cent.; sorghum culture declining.

Lincoln County, Ky.—Timothy injured by white blossom; clover unusually good.

Anderson County, Ky.—Meadows overrun with a weed called white blossom.

Graves County, Ky.—A bountiful crop of rye, sown principally for the hogs; oats fall below an average; clover and timothy about an average; tobacco late, with an increased acreage. It has been visited by a small black bug, resembling the flea, which destroyed millions of plants. Crop will be good, with favorable weather.

Trimble County, Ky.—Promise of unusual crops of oats and tobacco.

Buchanan County, Mo.—The grasshoppers have done much damage, but they are leaving rapidly, and farmers have commenced replanting corn.

Macon County, Mo.—Timothy and other grasses better than since 1855.

Cole County, Mo.—The wet, hot weather has caused the growth of numerous fungus excrescences upon the tubers of potatoes, giving rise to fear of rot.

Du Page County, Ill.—Small grains in danger from lodging and rust. Potatoes in flat tracts very poor.

Ford County, Ill.—Weather not favorable to crops. Prospect of wet haying and harvest. The yield of hay will be good, but the quality is likely to be injured by wet weather.

Putnam County, Ill.—Oats, rye, and barley, will fall below an average. Potatoes on the rolling lands look well. Apples will not yield an average crop.

Douglas County, Ill.—Oats injured by chinch bug.

Winnebago County, Ill.—Rye struck by blight; some fields reported worthless; others one-fourth to one-half of a crop; others report that though blighted the grain is filling, oats promising, barley looking finely. Potatoes look well, though some potato bugs have appeared.

Loami County, Ill.—Grass very heavy.

Dubois, Ill.—Oats promising.

Porter County, Ind.—Potato bugs are very destructive. Paris green and ashes will kill them; one part Paris green to eight of ashes.

Cass County, Ind.—Clover for hay is almost ruined.

Warren County, Ind.—There is a cranberry marsh of about 200 acres in this county—none cultivated.

Kosciusko County, Ind.—It is feared that the clover crop will be lost, owing to the wet weather.

Fayette County, Ind.—Potatoes injured by wet weather.

Steuben County, Ind.—The wet weather has injured potatoes, but has benefited timothy, clover, pasturage, &c.

Boone County, Ind.—Rye, hay, &c., injured by rains.

Union County, Ohio.—The hay crop will be light; the pastures are good.

Meigs County, Ohio.—A large acreage of potatoes with fine prospect. Luxuriant crops of grass.

Butler County, Ohio.—Barley all harvested; quality good, and yield large.

Vinton County, Ohio.—Sorghum retarded by the cold, wet weather. Many grapes have been blasted from same cause.

Athens County, Ohio.—Prospect for oats very good; pastures abundant; clover and timothy of large growth. Too wet for clover haying. Apples and peaches falling off, owing to cold, wet weather.

Champaign County, Ohio.—Apples and peaches dropping off—stung by insects.

Hardin County, Ohio.—Potatoes injured by rains. Grasses superior. Apples have suffered from the wet weather.

Bowling Green, Ohio.—Grass very heavy; oats and barley very good; rye tall and full; small fruit abundant; grasshoppers have been plenty, but are disappearing.

St. Joseph County, Mich.—The potato bug has appeared, but as yet has not done much damage.

Clinton County, Mich.—The Colorado potato beetle infests our potatoes. The larva is quite thick.

Kalamazoo County, Mich.—Hay crop has heavy growth, but no weather to cut it.

Macomb County, Mich.—Wheat, rye, barley, oats, grass, beans, peas, peaches, grapes, &c., unusually good.

Washtenaw County, Mich.—Grass has an unusual growth, and is badly lodged. Oats and potatoes medium

Cass County, Mich.—Clover overgrown, and badly down. The potato bug is ravaging many fields.

Hillsdale County, Mich.—Clover down and rotting.

Van Buren County, Mich.—All crops backward, except grass and fruit, which never looked better.

Berrien County, Mich.—About four thousand bushels of strawberries per day have been shipped from St. Joseph to Chicago, for several days.

Richland County, Wis.—The hop yards, as a general thing, are poorly worked, with lice in all yards as far as is known.

Ozaukee County, Wis.—The constant rains during the month have injured the hay crop in low places. Potatoes not planted on high lands are rotting.

Douglas County, Wis.—The potato bug has again appeared.

Green County, Wis.—Grass has seldom looked as well as at this date.

Green Lake County, Wis.—The eggs of the potato bug have failed to hatch, as yet, though they were deposited by the million.

Jackson County, Wis.—Fine growth of grass. The bugs have not injured potatoes as much as last year.

Waushara County, Wis.—Few potatoes planted, in apprehension of the bugs, but as yet but few have made their appearance.

Walworth County, Wis.—Clover yields much above the average.

Cass County, Minn.—Potatoes are suffering from the depredations of the cut worm and the potato bug.

St. Paul, Minn.—Cool as June has been, the weather has been favorable to all crops except corn.

Chaska, Minn.—Good prospect for abundant crops of all kinds.

Watonwan County, Minn.—Prospect of fair crops of oats and barley. Sorgo not looking well.

Algona, Iowa.—All crops are very heavy, except corn.

Waukon, Iowa.—Small grains above an average. The Colorado bug disappearing. Paris green and sifted ashes have proved pretty effectual in exterminating them.

Decatur County, Iowa.—There are thousands of fruit trees in bearing this season, for the first time.

Washington County, Iowa.—Potatoes look better than for many years.

Dubuque County, Iowa.—Grass was never better. I have three thousand apple trees, and they are all loaded with fruit.

Lee County, Iowa.—Potatoes are rotting in the ground. Fruit prospects good.

Monona County, Iowa.—One-third of the apples on our largest orchard were knocked off by hail; we still have more than in any previous year; prairie grass larger than for ten years.

Woodson County, Kansas.—The oat crop will be nearly double that of last year.

Cherokee County, Kansas.—There is a large increase in acreage of sorghum, in place of winter-killed wheat.

Saline County, Kansas.—Crops of all kinds far above the average.

Council Grove, Kansas.—All crops look well, but in danger from continuous rains.

Dixon County, Neb.—A frost in June froze the beans and the potatoes almost to the ground.

Cuming County, Neb.—Barley, wheat, and oats never looked more promising.

Jefferson County, Neb.—Season very wet; sorghum is poor; many fields of oats are failures.

Dakota, Neb.—Barley and oats are excellent.

De Soto, Neb.—Potatoes good; fruits never more promising.

Fontanelle, Neb.—All crops look well.

Albany, Oregon.—Taking the State as a whole there is prospect of very fine crops.

Columbia County, Oregon.—The hay crop will be light; the bottom lands will yield an average; but the table lands only half a crop.

San Bernardino, California.—All the cabbage family have been destroyed by small green lice; and in two or three cases large vineyards at the foot-hills have been destroyed by grasshoppers—never known in the county before.

Conejos County, Colorado.—Prospects favorable for fine crops this season.

El Paso County, Colorado.—Successive rains have rendered irrigation unnecessary so far, and crops generally promise well.

Yankton County, Dakota.—Crops never looked better than now in this Territory; there will be very large crops of wheat, oats, and barley, with favorable weather.

Walla-Walla County, Washington Territory.—Terrible drought; everything parching up, except fruit.

St. Joseph, Arizona.—Crops harvested. Yield: about thirty bushels of early wheat, and eighteen bushels of late-sown wheat, to the acre; about twenty-five bushels of barley, and twenty-five bushels of oats.

EXTRACTS FROM CORRESPONDENCE.

EXPERIMENTS WITH FARM AND GARDEN SEEDS.

Queen Ann County, Md.—The Talavera wheat sent last fall was sown as directed, on light ground. It looked very promising, but proved too late a variety for our climate. It remained green when the Mediterranean was fully ripe, and in consequence the hot sun dried it up before maturity. I expect, when I thresh it, to find the grains shrivelled up to half their proper size.

Princess Anne County, Va.—The Tappahannock wheat, grown from the seed received from the Department last fall, is almost a failure. The rust attacked it about the 1st of June. I attribute this to a cold spell of weather, which continued from the 2d of June to the 10th. The grain looks so much shrunken that I do not believe it is worth threshing.

King George's County, Va.—The "English rough chaff," sent from your Department, is a smooth-head wheat. It is not yet ripe. The heads are large and seem full, but the grain has not matured. Unless it can be made to ripen earlier for our climate, it can hardly be expected to escape the disasters of late varieties. This sample was sown October 20.

Amelia County, Va.—Last fall I received for experiment one peck of rough-chaff wheat. Seven quarts were seeded with Bickford & Huffman's grain drill, upon good land, on the 16th of October, 1868, at the rate of one bushel per acre. It had the benefit of a heavy top-dressing of stable manure in March, 1869. By the side of this, upon the same land, was seeded, without the top-dressing, at the rate of one and a quarter bushel of wheat per acre, the Tappahannock variety, on the 29th of October, 1868. I send for your inspection ten heads of each. Rough chaff ripened July 2d; Tappahannock 18th of June. Latter made good crop; the former entirely worthless.

Greene County, N. C.—The peck of Tappahannock wheat received from the Department in September, 1868, was sown on the 15th of November, on well prepared soil, (but rather light for wheat,) and was harvested on the 12th of June, 1869. We saved three bushels of fine wheat, free from

smut and rust, and can safely say that, had the wheat been sown one month sooner, it would have been much better in quality and quantity. I think the wheat of an excellent quality, and am pleased with the result.

Duplin County, N. C.—I received from the Department, last fall, one peck of Tappahannock wheat, which I divided among various parties, all of whom are highly pleased with it. Some have obtained three bushels from two pounds of seed. I have sown it now for three years, and am fully satisfied that it will produce one-third more on the same land than any other wheat. One of my neighbors sowed one bushel in a field by the side of Mediterranean wheat, and obtained five and a half bushels more per acre from the Tappahannock than from the Mediterranean. My crop was harvested on the 6th of June, and yielded fifteen bushels to one sown. Its greatest value in my estimation is in its freedom from rust, ripening so early that rust does not injure it. It makes beautiful flour.

Anson County, N. C.—The package of Tappahannock wheat, sent me by the Department last fall for experiment, was carefully sown on a highly fertilized piece of land, near the dwelling of one of my laborers, whose fowls damaged the wheat very severely. But, as imperfect as the experiment has been, I am satisfied that it is a wheat of superior quality. Two years since the Department sent me three quarts of this wheat, which I sowed on common fresh land, producing over two bushels of wheat of excellent quality. In the fall of 1867 I sowed one bushel of this, on common old land without fertilizers of any kind, which yielded eight bushels of good wheat, while at the same time and under the same circumstances I sowed the remainder of the field—nineteen acres—with the Orleans wheat, which was so badly rusted that it only yielded nineteen bushels of wheat, being one bushel per acre. The Tappahannock was scarcely affected with the rust. I now have enough of this wheat to sow my whole crop, and shall sow no other.

Columbia, S. C.—From about ninety-five rods of Tappahannock wheat, drilled and plowed, I raised twenty bushels of clean wheat. There was great waste in harvesting, and I am satisfied that at least four bushels were lost. Four drills of a red wheat from Georgia, drilled with my own hand with one quart of seed, produced two bushels. This satisfies me that I used entirely too much seed. The yield from one quart was at least seventy fold. In drilling again, I shall only use half a bushel of seed.

Spalding County, Ga.—It is encouraging to see the increased interest manifested by the planting interest of Spalding county. The returns received from experiments in wheat and cotton this year must lead to larger yields in the future. Mr. T. J. Thulkeld gathered fifty-eight bushels of wheat from an acre, and eighty from two other acres; Mr. J. H. Johnson, forty-six bushels from one acre; Mr. J. A. Buck, thirty-three; and there are cotton patches which, if no disaster happens, will be quite as good in return as the wheat.

Warren County, Ga.—In the summer of 1866 I received a small sack (one and a half pound) of Tappahannock wheat, from your Department; planted in October, in drills, and gathered in June following eighty-six pounds of beautiful white, well-filled wheat. I omitted to plant the next season, but about the first of November last, (1868,) sowed the eighty-six pounds on a thin piece of land, (one acre and a half,) from which I reaped eighteen bushels of as fine wheat as I ever saw. This is about 50 per cent. more than we have been accustomed to harvest from similar land and under similar circumstances. I believe it the best wheat in this section of country. The white Mediterranean, I fear, is too late to suc-

ceed here. I intend to try again, however, planting earlier and manuring highly.

Johnson County, Ga.—Last year I received from the Department twelve and a half pounds of Mediterranean wheat, which was planted on three and a half acres of land in drills two and a half feet apart, manured with two hundred and fifty pounds superphosphate of lime. Think I would have made twenty bushels, but it took the rust very badly, and I turned it under for manure. It will not ripen earlier than some wheat we have here.

Calhoun County, Ala.—The six quarts of Tappahannock wheat received last fall was sown broadcast early in December, and harvested June 15. It made four and a half bushels of clean wheat, fully equal to the seed.

Hale County, Ala.—The peck of Tappahannock wheat, sent me last fall, was given to one of my assistants, Mr. Chapman, a successful farmer and planter, who reports that it was totally destroyed by the rust—not a grain was raised. It grew well and looked finely until about two weeks before harvest.

Warren County, Miss.—Four quarts of Tappahannock wheat sown October 11, harvested two bushels and five pints June 4. The grain is quite as good and heavy as the seed, and is pronounced by good judges No. 1 wheat..

Greene County, Tenn.—Our leading variety of wheat, the Tappahannock, is harvested. This variety is, more than any other, prolific in the production of smut, and much of it is in the crop this year. Last fall I sowed seed entirely free from it by using a solution of bluestone on my seed the fall before, and have very little in my crop this year; but enough to show the necessity of using the solution again this fall. I procured a two-bushel sack of Deihl wheat from New York last fall, and drilled it in good clover fallow, and will scarcely get a return of the seed, and that of a very inferior quality.

Buchanan County, W. Va.—The Tappahannock wheat was given to some of our best farmers for trial. They report that it came up well, but during the winter was all frozen out. Last fall I sowed some of it myself, and it was frozen out in the same way.

Bourbon County, Ky.—The Tappahannock wheat sent me from the Department was cut yesterday. It was sown nearly a month later than a neighbor's wheat by its side, which is yet uncut. It is also several days earlier than the McChesney wheat, or white Mediterranean. I am of the opinion that it will succeed admirably with us. This was sown as late as the middle of October.

Clinton County, Ky.—Some years ago I sowed a small parcel of Tappahannock wheat, received from the Department. It did not get a good start, but ripened about ten or twelve days sooner than other wheat raised in this county. The prospect is now that enough will be raised this year to supply a number of families with seed. It appears to be an improvement on the wheat raised here, by reason of its ripening sooner, thereby avoiding rust. About the same time I received a small sack of oats which were sowed. Last year we raised about forty bushels; they are generally superior to any oats ever raised here. They grow larger and are about ten pounds heavier to the bushel. Name lost.

Washington County, Mo.—Of the Tappahannock wheat received from the Department last fall, seven quarts were sown the 20th of October on one-eighth of an acre of land of less than the average fertility, being a light red clayey soil. The crop, now harvested, measures four bushels of as pretty grain as it has been my fortune to see in this county. The variety is admirably adapted to the soil and climate of Southeast Missouri.

Hickory County, Mo.—The Tappahannock wheat has been thoroughly tested by different farmers and in different localities, and is found to do exceedingly well, and is preferred to any other wheat raised here. I have a pressing demand for seed for the fall sowing. I also find that the Mediterranean is well adapted to this climate. Will be able to give a more satisfactory report by another year, as our amount sown is small.

Saint Clair County, Ill.—The Tappahannock wheat sent me last fall has turned out very well, yet it will never be a popular wheat here; our millers say they cannot make a first-class flour from it, otherwise it would do well enough. Tennessee May wheat for rich land, and Mediterranean for poor land, are the best varieties for this latitude and soil.

Rock County, Wis.—The damage to fine grain, rye excepted, may not be so extensive, still it is serious. My cultivated grain looks well. The process of cultivating, raising furrows each side of the rows, and forming miniature ditches between, has the effect of a complete system of surface drainage. The Arnautka wheat proves remarkably early (now heading) and looks well; so do the Surprise Oats. The potatoes bid fair to be a perfect failure from the depredations of the bugs; both Colorado potato bug, and a species of cantharides.

Duplin County, N. C.—Notes on seeds received from the Department: McLean's Little Gem Pea has proved very early and very fine, large pods and very sweet. Should be planted in drills, two to two and one half feet apart, as it is a dwarf. McLean's Epicurean is late, a good bearer, fair sized pods, very sweet, a good variety for late fall. Carter's First Crop is a poor bearer; later than Daniel O'Rouke; not worthy of dissemination.

Fayette County, Tenn.—The Cream beans did admirably, yielding largely of rich, crisp, and delicious pods. Carter's First Crop peas about as early as Buist's Extra Early; shy bearer and deficient in flavor. McLean's Little Gem is truly a gem. The Bassano beet does well and is the best early variety. The Ramie plant is most luxuriant, easily raised from seed, and rapidly propagated by tubers.

Warren County, Miss.—The French Breakfast radish was planted March 30; the first eaten April 28; crisp and remarkably fine; manured with hen manure. James's Scarlet carrot yielded a heavy crop. Carter's Hardy Swede turnip, large and fine, but stringy—probably an excellent fall turnip. Imperial Green Round Top turnip proves quite bitter when cooked. Dewar's fine dark beet, of quick growth and fine flavor. Large Green Curled endive, of excellent growth and very tender. Maupau's superior tomato, transplanted April 12, ripe June 24; the earliest, largest, and smoothest variety. Cedar Hill tomato, ripe June 28; large and excellent, but some creases. The White Lisbon onion can be grown of good large size from the seed in one season, by high cultivation. The Large Tripoli makes fine sets, but few firm, full onions the first year. The Stone Mason and the Marblehead cabbage are doing well; the Tom Thumb has done badly. Carter's Early is five days earlier than the Early York, and has firm head. Carter's First Crop and McLean's Little Gem pea did not do well; the Surprise pea yielded ten-fold, fine flavored; Advance, ten-fold, coming in as a second crop; fine flavor. Early Yellow bean very fine. Narragansett and the Crosby sweet corn have done tolerably well, but quite small. New Japan muskmelon, very early and fine bearer.

CROPS IN DAKOTA.

Yankton, Dakota.—From all parts of the Territory come the most favorable reports of the crop prospects. Wheat never looked better, and,

unless heavy rain or hail storms come to beat it down, the crop will not fall far short of forty bushels per acre as the average yield. In Union County I have seen fields of one hundred acres that will yield nearly fifty bushels per acre. Oats are looking very well, and promise a yield of about sixty bushels per acre. Corn is looking well in Yankton and Bonhomme Counties, but in Clay and Union Counties the prospects are not so promising. There is a much greater breadth of land sown this season than heretofore, and, from all the estimates sent me, I think it is within bounds to state that there are about twelve thousand acres in cultivation in the Territory, and mostly in wheat and oats, although there are some fine crops of barley. The potato crop here will probably fall below an average yield, for the reason that, in many cases, the potato bug has stripped the vines before the root had matured. There have been no grasshoppers this season to injure anything, and the rapid settlement of the Territory will probably cause at least twice as much sowing and planting next year as has been done this year. There was taken during the month of June over forty-seven thousand acres of land by actual settlers, as shown by the land records at Vermillion, and if the present rate of increase of immigration continues, Dakota will vie with Minnesota as a grain producer within the next five years.

WHEAT AND POTATOES IN TEXAS.

Fannin County, Texas.—The wheat crop is now safe—mostly threshed; the grain is *very good*, and the yield so much better than it has been for several years past, that all seem to be perfectly satisfied and are willing to try another crop. The seed for the present crop was brought from the North, and many are confirmed in the belief that seed wheat should be brought from the Northern States. The land is better prepared for grain, and more care taken in planting, than was formerly the custom. With these advantages considered, it would be very strange did not the yield increase. Very little attention has been given to the culture of potatoes (*Solanum tuberosum*) until recently, because of the universal opinion that they would do nothing. An effort to produce them has proved them to be well adapted to our climate, regardless of the kind of soil, being ready for use by the 15th of May, and yielding a fair return.

THE RAMIE IN TEXAS.

Upshur County, Texas.—Last February I received two packages of the ramie seed, which were sown in a bed about the 10th of March. The seed germinated very well, but, from some cause, many of the plants died. I believe this resulted from the cool weather, for as soon as the weather grew warm the plants thrived, and were transplanted about the 10th of May, and some of them are now thirty inches high, with young shoots or suckers growing. Should it continue growing it will soon be five or six feet high. There is no doubt now as to its growing in this country. The only question is, can it be economically employed? Could the fiber be separated as easily as flax or hemp it would be extensively used for cordage, if for nothing else. If I had had the experience before that I now have, I could have raised any amount from the seed. I can get any quantity from what plants I now have, if it is as easily propagated as represented.

THE PERIQUE TOBACCO.

St. James Parish, La.—The famous "Perique" tobacco, considered by connoisseurs to be the best in the world, is raised in this parish, and has

been cultivated with profit; but I am sorry to inform the Department that, owing to the heavy taxes on the Perique tobacco, the whites of this parish interested in its cultivation cannot afford any longer to raise it, and are therefore obliged to abandon the cultivation of a crop which was once a source of wealth for them.

LABOR IN ARKANSAS.

Arkansas County, Ark.—It seems to be the prevailing opinion among planters that the negroes will refuse to work on the shares next year, and will only rent the land. If this is done, they will only plant two or three acres per hand, to buy clothes and groceries, and will raise their own meat and bread. There has been a convention of our planters, looking to the feasibility of employing the Chinese as cotton hands, and I suppose an effort will be made to introduce them.

CHEAP LANDS IN TEXAS.

Rusk County, Texas.—Lands are yet cheap here. Farms that will produce fine crops of cotton, corn, wheat, tobacco, sugar, and almost the whole range of garden vegetables, with field peas, oats, rye, and barley added, may be had for three dollars, specie, per acre, frequently cleared and improved. Wild land can often be bought cheaper. Of course particular advantages of location, &c., vary the above figures higher or lower as the case may be.

GRASSHOPPERS.

Atchison County, Kansas.—The grasshoppers are nearly all gone. They commenced to enter the winged state June 2, and began to fly or to emigrate eastward on the 16th. They are certainly controlled more or less by the current of air in which they move, for on the 18th the wind was due east, and they went with it westward; on the 19th it changed to southeast, and they went southeast; on the 22d it was north, and the grasshoppers went north. There seems to be an instinctive something that inclines them to go eastward, and I believe that since they have escaped over the plains they will pass over the whole continent, and finally disappear in the Atlantic Ocean. We fear their ravages less every year, and I think that unless some unlucky wind sends us a lot of them in the fall, we shall see them no more. A gentleman who has been in Kansas over twenty-three years, says he never saw or heard of these pests in this country until within a few years. The Indians make the same statement. The advent of these insects was a pure accident, by a propitious, (for them,) continued wind from the west for three weeks, which brought them over the plains.

Monroe County, W. Va.—In 1867–'68 the caterpillar destroyed the foliage of the apple trees nearly entire, and this present year there is not in my opinion a single live caterpillar in the county. A few made their appearance early in the season, but all seem to have perished. The cause of their absence no one here has been able to conjecture; the winter having been mild, and the spring and summer being such as we often have, there is a mystery why the caterpillars are all dead or gone.

STOCK RAISING IN OREGON.

The secretary of the Oregon Agricultural Society writes as follows:

Sheep are still being purchased for driving to California, although the number driven away has affected the price somewhat. The estimate of parties who have assisted in collecting droves is, that at least 40,000

head have left the Willamette Valley this spring. The wool crop is now rapidly passing from the hands of the producers into those of the buyers, at from twenty to twenty-three cents per pound for unwashed fleece, the latter price being paid for extra Merino lots for manufacture here and in California and for combing wool for shipment east. With a little improvement in the mode of keeping, the long wooled sheep might be raised in considerable quantities in Western Oregon. As it is, a large proportion of our wool is suitable for delaines, but we have as yet no machinery in operation for the manufacture of that class of goods, though much of it is worn here. Our people seem averse to bestowing the small cares which insure the success of sheep husbandry, and are just now very generally turning their attention to cattle, while the tendency of California graziers seems as generally to set upon sheep. From this time forward the farmers of Western Oregon will find it not only best to give some attention to winter feeding, but it will be necessary to give some attention to renewing the grass upon pasture lands, as the native grass is giving way before continued close feeding. The Department could not, at this time, more effectually benefit this section than by sending us seeds of grasses likely to be adapted to a dry summer climate. I have thought that those varieties which flourish well on the uplands of the south of England and north of France would be most likely to succeed here. I have seen a sample of the Fall Meadow Oat grass, described by Flint—the Roy grass of France—which bids fair to be valuable, with timothy, as a low-ground hay grass. Our great need is variety, for hay upon the uplands, and for pasture during our long, dry summers.

STOCK IN MEDINA COUNTY, OHIO.

Hinkley, Medina County, Ohio.—Horses in the county in 1868, 7,642; in 1869, 7,717; increase, 75. Cattle in the county in 1868, 22,292; in 1869, 21,892; decrease, 400. Sheep in the county in 1868, 150,223; in 1869, 102,333; decrease, 47,890. There was also a decrease of over 1,400 hogs. This large falling off in stock is owing to the great drought and ravages of grasshoppers, destroying meadows and pastures, and also to the low price of wool. Farmers think it unprofitable to keep sheep, at present prices of wool, on lands worth fifty dollars per acre. Wool sells, on an average, at forty-two cents per pound this year. I look for a further decrease in sheep. In my estimate of wool, compared with last year, I include only the wool shorn from living sheep and not the wool on pelts, and wool taken from dead sheep—reckoning that it would swell the aggregate to nine-tenths of last year. Fleeces are from five to six per cent. lighter this year than last.

DISEASES AMONG HORSES AND MULES.

Morehouse Parish, La.—Numbers of horses and mules have died during the past month, some of staggers, and others of a disease for which I know no name. It commences with soreness of the mouth, and is followed with swollen lips which burst open and exude a quantity of bloody water, and soon proves fatal. By far the greater proportion of the stock lost is that recently brought from localities further north.

CATTLE DISEASE IN ILLINOIS.

Champaign County, Ill.—I still hear, from time to time, of cattle dying. A few days since I commenced looking up the cases, and find it true

that cattle have been, and are still dying. One man, north of this place, who lost several head last year, and saw the disease all through the epidemic, informed me that there had been several cases this month, and that it is the same disease that killed our cattle last year. One of our cattle buyers informed me on last Saturday that Spanish fever was killing the cattle in this county, and he found a great many who wanted to sell their cattle. The man who first told me I have known for several years. Still he may be in error about its being the same disease. As I did not go to see the cattle, I cannot tell. It is fifteen miles from here.

CHICKEN CHOLERA.

Jefferson County, W. Va.—Chicken cholera has again broken out; the loss of 200 or 300 chickens has been reported to me. Several kinds of chicken powders have been tried to cure the disease, with but limited success. Preventives appear to be the most economical medicines. We have been feeding copperas to our chickens occasionally, and the disease has not yet appeared among our fowls.

WATER-POWER IN NEBRASKA.

Dixon County, Nebraska.—The article in your monthly report of January last, which describes Nebraska as destitute of water-power, does injustice to this section of country, for there are a great many streams and water-mills in Dakota, Dixon, Cedar, and Emmet counties, and a great number of unimproved water powers.

IMPORTS OF THE PRESENT YEAR.

The imports of three-quarters of the current fiscal year, up to April 30, 1869, as gathered from the monthly statement of the Bureau of Statistics, are as follows:

Months.	Merchandise.		Gold and silver.	Total.
	Free.	Dutiable.		
1868.				
July	$1,799,393	$33,582,761	$467,762	$35,849,916
August	1,349,909	31,868,512	1,321,176	34,539,797
September	1,729,554	31,298,516	1,438,705	34,526,775
October	1,909,604	29,349,632	1,038,309	32,297,545
November	1,822,701	25,973,185	1,107,664	28,903,550
December	1,442,470	19,674,064	882,642	21,999,176
1869.				
January	1,621,886	27,988,856	501,892	30,112,634
February	4,693,812	30,892,473	2,587,641	35,173,726
March	2,369,547	44,837,709	2,988,128	50,195,384
Total	15,798,676	275,465,908	12,333,919	303,598,503

The totals for the same period of the preceding year are as follows:

Free	$11,609,328
Dutiable	248,422,546
Gold and silver	9,924,172
Total	269,956,046

CHEMICAL MANURES.

M. Ville has recently made experiments, in France, with a view of ascertaining the productive value of chemical, as compared with farm-yard manures. His experiments were made upon the sugar beet, and he obtained 160 results in 1868, which he divided into six classes, distinguished by the yield, as follows:

First-class returns of from 70,000 kilogrammes and upward, per hectare; second-class returns, 60,000 kilogrammes to 70,000 per hectare; third-class returns, 50,000 kilogrammes to 60,000 per hectare; fourth-class returns, 40,000 kilogrammes to 50,000 per hectare; fifth-class returns, 30,000 kilogrammes to 40,000 per hectare; sixth-class returns, 20,000 kilogrammes to 30,000 per hectare.

The average yield under the different classes, reduced to English acres, and proportionate produce, as stated by M. Ville, is as follows:

First class, 36⅕ tons per acre; second class, 25½ tons per acre; third class, 21⅖ tons per acre; fourth class, 17¼ tons per acre; fifth class, 14⅕ tons per acre; sixth class, 9½ tons per acre.

The average amount of produce in favor of the chemical over the farm-yard manure was within a few pounds of four tons per acre, and M. Ville states that if the summer of 1868 had been of an average moisture, the excess of produce would have been still greater in favor of chemical manures, the drought that prevailed being a greater hindrance to its full, efficacious action, than to that of the farm-yard manure, which contains in itself a large portion of moisture. M. Ville concludes his statement with the deduction, that 1,323 kilogrammes of chemical manure produced an average of 52,834 kilogrammes of beet root per hectare, while 52,028 kilogrammes of farm-yard manure yielded only 42,210 kilogrammes.

SODA-ASH FOR WIRE-WORMS.

A letter quoted in Milburn's "Pests of the Farm" states: "I had sown a headland with soda ash, as a fertilizer; the following spring it was under turnips, and a man hoeing asked if 'anything had been done to the headland?' I asked 'why?' he said, 'there was not a plant destroyed by the wire-worm, and the rest of the field had fifteen to a nest.' I then determined to try it upon another field which was full of wire-worms. I have never since seen one on it. In the following year I had twenty-five acres of oats attacked more generally. I happened to have a cask of soda-ash by me, and ordered it to be sown. From that day the ravages ceased, and within a week the whole field changed its color to a vivid green. I have since ceased to consider it as an experiment, and have always a cask by me, ready, in case of any appearance of the wire-worm. The remedy is equally efficacious in repelling the attacks of the green fly."

THE ENGLISH SPARROWS.

As the English sparrow has been imported into this country to aid in destroying the caterpillers which infest the shade trees in cities, and has also been accused of doing much injury to the small fruits and grass, the following testimony of Alexander Crawford Kingstone, in a paper recently read before the Ballymahon Farmers' Club, may be received in the defence of the imported bird. He says: "The sparrow only lives

near the habitations of man; varies its food according to circumstances; in a wood lives on insects and seeds; in a village on seeds, grains, larvæ of butterflies, &c.; in a city on all kinds of debris; but prefers cockchafers and insects to all other food."

FACTS FROM VARIOUS SOURCES.

X. A. Willard, secretary of the American Dairymen's Association, reports returns from 224 cheese factories in the States of New York, Ohio, Vermont, Massachusetts, Illinois, Wisconsin, and Michigan. The product of these factories, up to the 30th of June, is set down at 179,024 boxes, of an average weight of 64$\frac{3}{10}$ pounds. Of this amount 80,210 boxes have been sold, leaving on hand 98,814 boxes. The daily make of the 224 factories is 3,758 boxes, or an average of 16$\frac{3}{4}$ each. It is estimated that in the United States and Canada there are 1,000 factories, the product of which is 117,250 boxes per week, though this yield will probably fall off 1,500 to 2,000 boxes weekly, as the season advances. It will be seen that the stock on hand is larger than the amount sold. There is probably as much May cheese back as has been sold of June cheese, so that the entire June make, it may be estimated, is waiting for a market. There are now not far from 430,000 boxes on the ranges, as the average number on hand of the 224 factories from which returns have been received is a fraction over 432, which for 1,000 factories would give 432,000 boxes.

A new vegetable has lately been discovered growing in great abundance on the plains. Mushrooms, of gigantic size and extraordinary flavor, have been found growing in great profusion all around Cheyenne, Wyoming Territory. The writer saw one that weighed over a pound, twenty-one inches in circumference and seven inches in diameter. The stem was two inches thick and five inches long. When prepared for cooking, the meat was thirteen inches from rim to rim, and from one to two and a half inches thick, of fine flavor, nutritious and evidently wholesome.

All along the Crow Creek Valley for several miles from the city of Cheyenne good land is to be found; the valley is not wide, but the bottom along the creek contains rich loam, and is capable of producing any kind of cereals. The soil is two feet deep, and the presence of the sandstone formation gives unmistakable evidence of productiveness. The creek is a stream of pure clear water, about twenty feet wide and fifteen inches deep, which runs all the year. This land belongs to the Union Pacific railroad and the government, and will soon be for sale at the rate of 2 50 per acre. There is nothing now, however, to prevent farmers from occupying it, and it only awaits the hand of the husbandman to yield a fruitful return for the labor of cultivation. The country is undulating and rolling with mountains and peaks in the distance covered all the year with snow. The climate is delightful.

The steam plow which has been lying idle at Havana, Illinois, from want of an experienced man to run and manage it, has been purchased by Mr. Lawrence, of Louisiana, and removed to that State. The large engines imported by Mr. Lawrence last fall, together with his new tackle, are doing wonders. The engines work up to fifty horse-power each. Plowing has been done 22 to 26 inches deep.

The redwood *(Sequoia sempervirens)* forests of California are confined to a narrow belt of the Coast Range, commencing on the south of San Luis Obispo County, and terminating near the northern boundary of the State. For all practical purposes, however, the redwood

district commences on the north side of the bay of Monterey and extends to the northern part of Humboldt County. Within these limits there are several interruptions of the line of redwoods—one of not less than fifty miles in extent—while the average breadth of the area can be hardly more than twenty miles. In the territory described, with a few outlying tracts of small account, are composed all the redwood forests known to exist on the Pacific coast. There is now very little prospect that a second growth of redwood can be depended upon for lumber purposes. The redwood is a tender tree, growing only within the fog belt, or limits of greatest moisture, and, more than all the forest trees of that region, needs protection. A few years ago the Contra Costa Hills, back of Oakland, were covered with a heavy growth of redwoods. The timber trees were cut out, but the forest has never recovered—the sun was let in, and heat, wind, and the drought did the work. When the first growth has been cut, other trees, more hardy, encroach upon the redwoods and crowd them out. In fifty years, without some new method of protection, it is believed California will have done with redwood for building purposes.

There is a grapevine near Santa Barbara, California, the trunk of which measures thirteen inches in diameter, the branches covering an area of sixty-five feet in diameter. It is trained upon a trellis-work supported by sixty-four posts. It is stated that the vine last season yielded six tons of grapes, which brought $260. The vine is twenty-four years old. Another vine, trellised in the same way, eleven years old, bids fair to outstrip the old one. It now covers an area of thirty-six feet in diameter.

As an evidence of the great fertility of the tule lands of Sherman Island, in Suisun Bay, California, it is stated that wheat planted in ashes, on the surface, without any ploughing, yields eighty-three and a half bushels to the acre for the first season and forty-five bushels for the second—the "volunteer" crop. Barley, under similar conditions, yielded one hundred and twelve bushels to the acre for the first crop, and seventy-eight bushels for the "volunteer" crop. It is also stated that there is now growing upon the island a peach tree of strong, thrifty growth, from a stone planted last summer, and upon this tree are four promising peaches that will probably mature within twelve months from the time the parent fruit was plucked from the stem.

A recent arrival at San Francisco from Kodiak, Sitka, brought one hundred barrels of cranberries. This fruit is of fine quality, larger than the Oregon variety, and it is stated that almost any quantity can be obtained from the same source. The fruit is worth twenty cents per quart in San Francisco.

Fruit growers at San Pablo, California, are suffering from the depredations of a black slug which, thus far, has confined its operations to the pear trees, feeding upon the leaves and consuming their life, leaving only a dry brown skeleton tissue, incapable of performing any of the functions of receiving and elaborating the circulating fluids for the growth and projection of the tree and fruit. A few plum trees have been attacked. The slug is half to three-fourths of an inch in length, of tapering, slender form, widest at the head, which may measure one-twentieth of an inch where it fastens to the leaf and is distended in sucking juices.

During the first six months of the current year California exported 1,416,048 sacks (one hundred pounds) of wheat, valued at $2,595,472, against 1,112,932 sacks for same time in 1868, valued at $3,012,477—showing an increase of over twenty-one per cent. in amount exported, and a decline of nearly thirty-five per cent. in price.

METEOROLOGY.

COMPILED IN THE DEPARTMENT OF AGRICULTURE FROM REPORTS BY OBSERVERS FOR THE SMITHSONIA INSTITUTION.

Tables showing the highest and lowest range of the thermometer, (with dates prefixed,) the mean temperature, and amount of rain (in inches and tenths,) for June, 1869, at the stations and by the observers named. Daily observations at 7 a. m. and at 2 and 9 p. m.

JUNE, 1869.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MAINE.				°		°	°	*In.*
Houlton	Aroostook	Charles H. Fernald	4	87	7	46	64.5	.....
Steuben	Washington	J. D. Parker	3	79	8	44	58.0	3.75
Williamsburg	Piscataquis	Edwin Pitman	4,5	82	7	48	60.0	4.72
West Waterville	Kennebec	B. F. Wilbur	3	84	7	51	63.3	4.40
Gardiner	....do	R. H. Gardiner	3	77	9	49	61.3	5.50
Standish	Cumberland	John P. Moulton	4	84	7,9	48	63.9	2.54
Norway	Oxford	H. D. Smith	3	84	12	48	62.1	4.47
Cornish	York	Silas West	3	84	7	48	62.2	2.98
Cornishville	....do	G. W. Guptill	3,4	84	7	50	64.9	2.99
Averages							62.2	3.92
NEW HAMPSHIRE.								
Stratford	Coos	Branch Brown	4	86	9	41	59.9	4.39
Whitefield	....do	L. D. Kidder	3	84	9	40	62.2	.....
North Barnstead	....do	Charles H. Pitman	3	82	6,7,9	50	63.5	2.29
Goffstown Centre	Hillsboro'	Alfred Colby	4	88	7	42	63.0	3.10
Averages							62.2	3.26
VERMONT.								
Lunenburg	Essex	H. A. Cutting	4	84	6	46	61.8	5.00
North Craftsbury	Orleans	Rev. E. P. Wild	4	83	6	40	59.3	6.55
Randolph	Orange	Chas. S. Paine	4	91	7	41	63.8	4.50
Woodstock	Windsor	Doton & Miller	4	81	7	40	59.8	2.85
Near St. Albans	Franklin	A. H. Gilmour	4	83	6	45	62.2	.....
West Charlotte	Chittenden	Miss M. E. Wing	29	89	7	37	65.2	7.47
Middlebury	Addison	H. A. Sheldon	4	77	7,9	48	62.6	3.38
Panton	....do	D. C. Barto	4	84	6,8,10	50	63.9	5.19
Averages							62.3	4.99
MASSACHUSETTS.								
Kingston	Plymouth	G. S. Newcomb	1,29	86	7,10	50	64.2	5.87
Topsfield	Essex	S. A. Merriam	29	82	7	46	63.9	4.01
Milton	Norfolk	Rev. A. K. Teele	29	87	8	51	66.2	3.65
Cambridge	Middlesex	Mrs. J. B. Perry	4	90	7	49	66.4	.....
North Billerica	....do.	Rev. Elias Nason	3	85	7	49	67.7	.....
West Newton	....do.	John H. Bixby	29	91	6,7,8,9	52	69.9	2.92

Table showing the range of the thermometer, &c., for June—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MASSACHUSETTS—Continued.				°		°	°	*In.*
New Bedford	Bristol	Samuel Rodman	12, 29	87	7, 8	52	65.5	4.27
Worcester	Worcester	Jos. Draper, M. D.	29	80	7	50	64.7	3.08
Mendon	do	Jno. G. Metcalf, M. D	3	80	8	50	64.5	5.20
Lunenburg	do	G. A. Cunningham	3, 29	84	7	49	65.7	7.35
Amherst	Hampshire	Prof. E. S. Snell	29	81	8	47	64.7	5.99
Richmond	Berkshire	Wm. Bacon	4	90	10	38	64.1	11.24
Williams College	do	Prof. A. Hopkins	4	84	9	45	63.8	3.84
Hinsdale	do	Rev. E. Dewhurst	3, 4	80	8	42	62.7	7.15
Averages							65.2	5.38
RHODE ISLAND.								
Newport	Newport	Wm. H. Crandall	29	81	8	53	64.6	2.26
CONNECTICUT.								
Columbia	Tolland	Wm. H. Yeomans	1	88	8	46	66.4	.....
Middletown	Middlesex	Prof. John Johnston	28, 29	85	9	48	66.2	4.78
Waterbury	New Haven	Rev. R. G. Williams	28, 29	80	8, 10	48	65.3	4.10
Colebrook	Litchfield	Charlotte Rockwell	28	82	7, 11	47	63.5	10.95
Averages							65.4	6.61
NEW YORK.								
Moriches	Suffolk	E. A. Smith & daugh's	29	92	9	54	70.0	6.22
South Hartford	Washington	G. M. Ingalsbe	4	82	9	43	67.1	5.05
Hudson	Columbia	Dr. G. P. Hachenberg	1, 4, 18	85	7	52	68.4	3.72
Garrison's	Putnam	Thomas B. Arden	28	88	7, 8, 9	50	64.7	1.47
Throg's Neck	Westchester	Miss E. Morris	3, 27	88	7, 8, 9, 11	54	69.0	.....
Deaf and Dumb Inst.	New York	Prof. O. W. Morris	28	89	8	52	69.1	4.72
Columbia College	do	Prof. Chas. A. Joy	28	89	9	51	69.4	3.31
Flatbush	Kings	Rev. Eli T. Mack	28	89	10	52	69.8	6.46
Glasco	Ulster	D. B. Hendricks	29	87	6	45	67.1	4.83
Newburgh	Orange	Jas. H. Gardiner	28	87	8	53	69.4	2.85
Minaville	Montgomery	J. W. Bussing	4	85	8	50	66.1	4.40
Gouverneur	St. Lawrence	Cyrus H. Russell	3	82	6	47	60.9	3.81
North Hammond	do	C. A. Wooster	3, 29	80	6	47	64.9	3.10
Houseville	Lewis	Walter D. Yale	3, 4, 18, 29	80	6, 8	44	60.9	3.39
Leyden	do	C. C. Merriam	3	76	6	42	58.4	5.31
South Trenton	Oneida	Storrs Barrows	3, 23	82	8, 12	40	62.2	6.46
Cazenovia	Madison	Prof. Wm. Soule	3, 18	81	6	42	61.9	.....
Oneida	do	S. Spooner, M. D.	18	84	6	44	63.0	9.66
Depauville	Jefferson	Henry Haas	4	78	6	46	59.4	3.09
Oswego	Oswego	Wm. S. Malcolm	4	79	6	43	59.6	3.93
Palermo	do	E. B. Bartlett	3, 4	84	6	44	62.7	3.00
North Volney	do	J. M. Patrick	3, 18	84	6	45	63.5	.....
Ludlowville	Tompkins	C. P. Murphy	18	90	7	42	65.4	.....
Waterbury	do	D. Trowbridge	29	88	5	44	64.7	.....
Nichols	Tioga	Robert Howell	18	90	7	43	62.6	.....
Newark Valley	do	Rev. Sam'l Johnson	18, 20	88	7	42	64.9	3.00
Himrods	Yates	Gilbert D. Baker	18	83	6	46	64.0	3.94
Rochester	Monroe	H. W. Mathews	18	81	6	47	63.2	6.62
Little Genesee	Allegany	Daniel Edwards	20	87	7, 8	42	63.6	4.32
Suspension Bridge	Niagara	W. Martin Jones	4	86	6	39	61.7	.....
Buffalo	Erie	Wm. Ives	3	83	6	45	62.6	5.19
Averages							64.6	4.49

Table showing the range of the thermometer, &c., for June—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
NEW JERSEY.				°		°	°	*In*
Paterson	Passaic	Wm. Brooks	21, 28	90	11	52	69.8	4.90
Newark	Essex	W. A. Whitehead	28	87	10	47	68.4	5.85
Trenton	Mercer	E. R. Cook	20, 28	90	9	52	73.4	3.59
Rio Grande	Cape May	Mrs. J. R. Palmer	27	98	8	50	71.3	4.38
Moorestown	Burlington	Thos. J. Beans	20, 27	88	9	50	70.2	4.95
Newton	Sussex	Thos. Ryerson, M.D.	27	84	7	48	65.6	3.48
New Germantown	Hunterdon	Arthur B. Noll	28	91	10	51	69.0	4.76
White House	....do	Fleming & Herr	19	87	10	50	71.8	.....
Haddonfield	Camden	John Boadle	20	89	9	52	70.7	2.93
Newfield	Gloucester	E. D. Couch	20, 21 25, 28	95	9	51	72.8	.....
Greenwich	Cumberland	R. C. Sheppard	28	89	9	54	71.8	4.19
Vineland	....do	John Ingram, M. D.	26, 28	98	9	53	75.1	4.66
Averages							70.8	4.37
PENNSYLVANIA.								
Nyces	Pike	John Grathwohl	28	93	6	42	66.2	4.30
Hamlinton	Wayne	James D. Stocker	18	87	6	46	66.1	4.76
Fallsington	Bucks	Ebenezer Hance	27	89	9	54	70.0	4.89
Germantown	Philadelphia	Thomas Meehan	20	95	7, 9	50	73.6	.....
Horsham	Montgomery	Miss Anna Spencer	20	88	10	53	69.7	5.90
Plymouth Meeting	....do	M. H. Corson	20, 28	87	9	53	70.3	4.37
Dyberry	Wayne	Theodore Day	20	84	9	41	63.3	2.50
Whitehall	Lehigh	Edward Kohler	28	87	9	46	68.1	.....
Factoryville	Wyoming	Rodman Sisson	20	86	9	46	65.6	2.92
Reading	Berks	J. Heyl Raser	20, 28	89	7	50	69.3	.....
Parkerville	Chester	Dr. F. Darlington	27	91	8, 10	55	71.9	3.86
West Chester	....do	Dr. George Martin	20	92	9	52	70.5	3.59
Phenixville	....do	Dr. I. Z. Coffman	20	90	9	50	70.6	6.00
Ephrata	Lancaster	W. H. Spera	26	98	8	56	75.3	3.24
Mount Joy	....do	J. R. Hoffer, M. D.	20, 28	93	9	48	70.4	.....
Harrisburg	Dauphin	Jno. Heisely, M. D.	27	90	9	55	72.2	5.46
Carlisle	Cumberland	Wm. H. Cook, M. D.	20	92	9	52	70.6	6.00
Fountain Dale	Adams	S. C. Walker	20, 27	89	11	50	69.3	3.03
Tioga	Tioga	E. T. Bently	4, 27	86	7, 10	36	61.6	4.52
Williamsport	Lycoming	H. C. Moyer	20	84	9	47	68.6	.....
Lewisburg	Union	Prof. C. S. James	26	89	9	51	68.4	4.53
Grampian Hills	Clearfield	Elisha Fenton	20	85	8	42	63.5	7.28
Johnstown	Cambria	David Paelor	20	86	7, 9	40	65.6	11.11
Franklin	Venango	Rev. M. A. Tolman	27	87	7	39	66.1	5.10
Connellsville	Fayette	John Taylor	20, 27	86	8	44	67.6	.....
New Castle	Lawrence	E. M. McConnell	27	85	7	39	68.3	.....
Beaver	Beaver	Rev. R. T. Taylor	19	87	6, 9	52	67.0	5.50
Canonsburg	Washington	Rev. W. Smith, D. D.	19, 20, 27	87	9	44	68.0	3.87
Averages							68.5	4.84
DELAWARE.								
Milford	Kent	Mrs. A. C. Whittier	28	98	9	52	78.2	1.40
MARYLAND.								
Woodlawn	Cecil	Jas. O. McCormick	21, 28	90	9	52	71.6	2.35
Annapolis	Anne Arundel	Wm. R. Goodman	28	95	9	57	75.3	2.89
Mt. St. Mary's	Frederick	Prof. C. H. Jourdan	27	88	6, 11	50	68.2	2.22
Averages							71.7	2.49

Table showing the range of the thermometer, &c., for June—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
DIST. OF COLUMBIA.				°		°	°	*In.*
Washington	Washington	Smithsonian Instit'n.	20	89	7	58	73.3	3.04
VIRGINIA.								
Johnsontown	Northampton	C. R. Moore	20,21, 28,30	91	9	57	73.8	3.80
Hampton	Elizabeth City	James M. Sherman	21,27,28	94	6,9,10	60	76.8	2.80
Zuni Station	Isle of Wight	Robert Binford	28	96	12	56	76.8	3.73
Bacon's Castle	Surry	B. W. Jones	28	100	10	60	79.8	.....
Comorn	King George	E. Taylor	27,28	90	9	55	74.4	3.05
Staunton	Augusta	J. C. Covell	29	90	7	58	72.2	1.40
Lexington	Rockbridge	W. H. Ruffner	20	96	8	52	73.9	2.60
Lynchburg	Bedford	Chas. I. Meriwether	20	88	8	55	73.2	.....
Snowville	Pulaski	J. W. Stalmaker	28	90	12	48	66.9	12.50
Wytheville	Wythe	Howard Shriver	8	90	6	53	68.0	2.00
Near Wytheville	....do	Rev. Jas. A. Brown	25	87	7	51	68.9	2.81
Averages							73.2	3.86
WEST VIRGINIA.								
Romney	Hampshire	W. H. McDowell	19	96	9	48	73.1	.....
Weston	Lewis	B. Owen	3,22	87	7	45	69.1	.....
Cabell C. H.	Cabell	C. L. Roffe	19,29	91	7	40	68.2	5.30
Averages							70.1	5.30
NORTH CAROLINA.								
Goldsboro'	Wayne	E. W. Adams, A. M.	21,22	101	7,8,9	66	81.2	6.00
Raleigh	Wake	Miss M. H. Taylor	21,22, 23,25	98	2,8,10, 11	60	79.1	.....
Oxford	Granvillle	W. R. Hicks, M. D.	21	97	7	60	78.5	3.35
Albemarle	Stanley	F. J. Krow	29	97	16	52	74.6	4.78
Asheville	Buncombe	E. J. Aston	20	85	16,18	57	68.5	6.40
Do	....do	J. T. E. Hardy, M. D.	19, 20, 28, 30	80	16	50	67.1	.....
Chapel Hill	Orange	David S. Patrick	28	96	11,14	64	77.5	.....
Averages							75.2	5.13
SOUTH CAROLINA.								
Aiken	Barnwell	John H. Cornish	30	94	15,16	64	77.4	3.72
GEORGIA.								
Atlanta	Fulton	F. Deckner & Son	1,21	93	12	52	73.3	2.48
Macon	Bibb	Miss S. M. Proctor	22	98	16	64	75.0	3.58
Berne	Camden	H. L. Hillyer	20	92	15	65	76.6	.....
Penfield	Greene	S. P. Sanford	30	94	16	62	77.0	2.61
Averages							75.5	2.89
ALABAMA.								
Opelika	Lee	Miss Ella B. Shields	30	96	16	63	79.0	4.69
Carlowville	Dallas	H. L. Alison	21,22	94	6,14 15,16	70	74.2	3.54
Fish River	Baldwin	W. J. Van Kirk	18,20,30	88	16	68	.....	.....
Averages							76.6	4.12
FLORIDA.								
Port Orange	Volusia	Mrs. J. M. Hawks	29,30	90	5,10,11, 15,23	73	79.6	.....
Jacksonville	Duval	A. S. Baldwin	30	97	9	70	80.2	7.66
Ocala	Marion	Edward Barker	30	98	4	70	.....	.....

Table showing the range of the thermometer, &c., for June—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
				°		°	°	*In.*
FLORIDA—Contin'd.								
Chattahoochie	Gadsden	M. Martin	21	95	5	67	81.0	4.50
Averages							80.3	6.08
TEXAS.								
Lavacca	Calhoun	L. D. Heaton	25, 26, 30	92	1	70	80.0	7.50
Austin	Travis	J. Van Nostrand	30	90	10	69	79.0	2.34
Clinton	De Witt	A. C White, M. D.	25, 26	91	4	68	80.8	2.20
Averages							79.9	4.01
MISSISSIPPI.								
Natchez	Adams	Wm. McCary	30	86	4	63	76.2	5.02
Marion C. H.	Lauderdale	Thos. W. Florer	28, 29, 30	100	16	58	74.8	1.00
Averages							75.5	3.01
TENNESSEE.								
Elizabethton	Carter	Charles H. Lewis	19,20 / 21,29	90	15	46	71.1	5.90
Tusculum College	Green	S. S. and Rev. W. S. Doak.	27	87	12	55	73.1	3.90
Lookout Mountain	Hamilton	C. C. Carpente	30	90	6	59	74.7	.....
Clarksville	Montgomery	Prof. W. M. Stewart	19	89	6, 7, 15, 16	55	70.2	4.40
Trenton	Gibson	W. T. Grigsby	19	96	7	50	74.1	3.80
Memphis	Shelby	Ed. Goldsmith	29	96	6, 7, 15	59	76.2	3.60
Averages							73.2	4.32
KENTUCKY.								
Pine Grove	Clark	Sam'l Martin, M. D.	19	90	6	52	71.1	4.74
Lexington	Fayette	Newton Williams	19	89	6, 7	54	71.1	5.84
Danville	Boyle	O. Beatty	18	90	6	55	73.7	4.69
Louisville	Jefferson	Mrs. L. Young	19, 27	91	6	44	71.8	5.18
Averages							71.9	5.11
OHIO.								
Steubenville	Jefferson	Jos. B. Doyle	20, 27	85	7	48	71.0	4.01
Painesville	Lake	E. J. Ferris	18	82	7	42	62.3	5.63
Gilmore	Tuscarawas	Samuel M. Moore	26	94	5, 6	50	70.2	5.01
Milnersville	Guernsey	Rev. D. Thompson	19. 26	88	5	48	69.1	6.31
Cleveland	Cuyahoga	Mr. & Mrs. G. A. Hyde	18	85	6	43	64.2	3.52
Gallipolis	Gallia	A. P. Rodgers	19	90	8	49	69.4	5.03
Kelley's Island	Erie	Geo. C. Huntington	29	84	6	50	67.1	6.07
Sandusky	....do	Thomas Neill	18, 27	85	7	48	66.4	6.90
North Fairfield	Huron	O. Burras	27	88	5	47	67.0	7.25
Carson	....do	Mrs. M. M. Marsh	27	86	6, 8	50	67.7	6.92
Gambier	Knox	C. D. Leggett	3, 20, 29	78	5, 6, 7, 8	50	63.0	.....
Westerville	Franklin	Prof. Jno. Haywood	19	88	6	48	68.8	3.08
North Bass	Ottawa	Geo. K. Morton, M. D	27	90	6	49	66.3	4.87
Marion	Marion	H. A. True, M. D.	27	87	15	44	66.7	4.15
Hillsboro'	Highland	J. McD. Mathews	26, 27	83	6	47	67.5	4.17
Toledo	Lucas	John Trembly, M. D.	27	88	6	42	66.6	8.25
Bowling Green	Wood	John Clarke	18	93	5	48	69.6	10.07
Kenton	Hardin	C. H. Smith, M. D.	33	94	7	55	72.6	8.38
Urbana University	Champaign	M. G. Williams	19	86	6, 7	50	68.8	2.49
Bethel	Clermont	Geo. W. Crane	19	90	14	37	70.2	3.50
Jacksonburg	Butler	I. B. Owsley, M. D.	19	88	7	50	69.1	3.99
Mt. Auburn Inst	Hamilton	Prof. S. A. Norton	19	88	5	54	72.6	4.45

Table showing the range of the thermometer, &c., for June—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
OHIO—Continued.				°		°	°	*In.*
Cincinnati	Hamilton	R. C. Phillips	20	92	7	54	73.0	3.60
College Hill	do	John W. Hammitt	19	94	7,8	52	72.8	2.25
Averages							68.4	5.25
MICHIGAN.								
Monroe City	Monroe	Miss H. I. Whelpley	18	88	6	46	66.0	4.29
Alpena	Alpena	J. W. Paxton	28, 30	65	6	41	51.7	5.08
State Ag. College	Ingham	Prof. R. C. Kedzie	2	84	5	44	64.5	4.40
Litchfield	Hillsdale	R. Bullard	18	84	5	46	64.4	10.05
Grand Rapids	Kent	E. S. Holmes, D. D. S	29	88	6	38	65.0	.....
Old Mission	Grand Traverse	C. P. Avery	2	80	6	37	58.8	5.50
Northport	Leelanaw	Rev. Geo. N. Smith	2, 3	82	5	36	55.9	7.38
Muskegon	Muskegon	H. A. Pattison	3, 19	81	5	48	64.6	2.49
Otsego	Allegan	Milton Chase, M.D	8, 29	84	4	48	64.0	.....
Copper Falls	Keewenaw	S.H. Whittlesey, M.D	28	72	5	33	52.3	1.90
Ontonagon	Ontonagon	Edwin Ellis M. D	2, 3, 7, 8	80	14	44	57.4	.....
Averages							60.4	5.20
INDIANA.								
Vevay	Switzerland	Chas. G. Boerner	19	90	7, 8	51	69.9	4.54
Mount Carmel	Franklin	J. A. Applegate and daughter.	25	92	5, 6, 15	50	70.8	2.85
Muncie	Delaware	G. W. H. Kemper, M.D	19, 25, 26	90	5	47	69.6	4.10
Spiceland	Henry	Wm. Dawson	19	91	5, 6	49	69.9	4.25
Columbia City	Whitley	Dr. F. and Miss L. McCoy.	19	94	6, 16	48	71.1	10.38
Jalapa	Grant	Albert C. Irwin	26	89	5	44	67.7	3.00
Knightstown	Rush	D. Deem	19	89	5	49	68.9	4.30
Indianapolis	Marion	J. V. Woolen, M. D	19, 27	86	5	46	68.5	4.37
La Porte	La Porte	Fred. J. Andrew	27	83	5	48	65.1	10.29
Rensselaer	Jasper	J. H. Loughridge	19	90	5	46	69.2	4.00
Merom	Sullivan	Thomas Holmes	19	91	15	52	71.1	4.75
New Harmony	Posey	John Chappellsmit	19	90	5, 6	56	73.0	5.15
Harveysburg	Fountain	B. C. Williams, M.	19, 25	92	5	50	70.9	6.00
Averages							6.97	5.22
ILLINOIS.								
Chicago	Cook	J. G. Langguth, jr	19	84	6	49	65.8	5.03
Near Chicago	do	Samuel Brookes	19	85	4	45	64.8	.....
Evanston	do	Prof. Oliver Marcy	19	84	4, 5	45	63.0	2.96
Marengo	McHenry	J. W. James	3, 19, 29	83	6, 16	42	64.7	7.29
Effingham	Effingham	Wesley Thompson	19	94	15	52	73.9	8.36
King's Mills	Kane	Mr. and Mrs. A. Spaulding	19	83	5	46	64.4	7.81
Louisville	Clay	D. H. Chase, M. D	19	90	5	52	72.0	6.40
Golconda	Pope	Wm. V. Eldredge	25	96	5	40	70.2	4.00
Sandwich	DeKalb	N. E. Ballou, M. D	8	90	6	48	67.2	7.57
Ottawa	La Salle	Mrs. E. H. Merwin	3	89	6, 15	52	66.5	6.28
Pana	Christian	Thos. Finley, M. D	19	89	14, 15	52	70.7	3.10
Winnebago	Winnebago	J. W. & Miss Tolman	29	85	5	45	64.0	4.01
Rochelle	Ogle	Daniel Carey	29	88	5	50	67.1	.....
Wyanet	Bureau	E. S. & Miss Phelps	19	84	6	44	66.3	9.96
Tiskilwa	do	Verty Aldrich	20, 24, 29	88	5, 6, 7	44	66.9	.....
Elmira	Stark	O. A. Blanchard	19	87	6	50	67.2	12.43
Springfield	Sangamon	G. M. Brinkerhoff	19, 28	93	11	46	69.4	.....

Table showing the range of the thermometer, &c., for June—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
ILLINOIS—Contin'd.				°		°	°	*In.*
Loami	Sangamon	Timothy Dudley	25	88	5	53	71.1	3.65
Dubois	Washington	Wm. C. Spencer	20	90	7,15	48	70.3	4.30
South Pass	Union	H. C. Freeman	20	94	5,15	54	75.2	.....
Lombard University	Knox	Prof. W. Livingston	3,28	80	5	50	68.7	8.88
Manchester	Scott	Dr. J. & C. W. Grant	25	90	14	48	70.3	4.82
Mount Sterling	Brown	Rev. A. Duncan	19,25	87	5	50	68.4	.....
Audalusia	Rock Island	E. H. Bowman, M. D	19	84	5	50	67.7	.....
Augusta	Hancock	S. B. Mead, M. D	19	85	6	53	70.4	8.13
Warsaw	do	B. Whitaker	19	89	5	46	69.3	5.90
Averages							68.3	6.73
WISCONSIN.								
Manitowoc	Manitowoc	Jacob Lüps	2	82	5	43	58.1	8.15
Plymouth	Sheboygan	G. Moeller	3	85	5	42	60.6	10.90
Hingham	do	Jno. De Lyser	29	90	6	35	60.8	.....
Milwaukee	Milwaukee	I. A. Lapham, LL.D	29	85	6	40	59.5	7.67
Geneva	Walworth	W. H. Whiting	29	85	5	44	64.2	4.63
Embarrass	Waupaca	E. Everett Breed	3,28	80	6	40	59.1	.....
Madison	Dane	W. W. Daniels	3	79	5	48	62.6	6.24
Edgerton	Rock	Henry J. Shints	28	87	5	49	64.9	8.80
New Lisbon	Juneau	J. L. Dungan	28,29	87	6	45	63.9	.....
Bayfield	Bayfield	Andrew Tate	3	82	5	38	56.2	.....
Averages							61.0	7.73
MINNESOTA.								
Afton	Washington	Dr. and Mrs. B. F. Babcock	29	87	5	41	62.7	3.39
St. Paul	Ramsey	Rev. A. B. Paterson	3	89	5	47	64.4	2.22
Minneapolis	Hennepin	Wm. Cheney	30	86	5	47	64.4	3.55
Sibley	Sibley	C. W. & C. E. Woodbury	3	86	5	37	63.5	1.31
New Ulm	Brown	Charles Roos	3	87	5	46	65.2	2.52
Madelia	Watonwan	W. W. Murphy	3	90	5	44	65.9	3.05
Averages							64.4	2.74
IOWA.								
Clinton	Clinton	Dr. J. P. Farnsworth	30	83	16	48	66.7	5.80
Davenport	Scott	D. S. Sheldon	19	81	6	46	66.6	11.89
Waukon	Allamakee	E. M. Hancock	18	86	5	47	63.6	.....
Dubuque	Dubuque	Asa Horr, M. D	29	87	6	50	68.8	4.68
Monticello	Jones	M. M. Moulton	10	87	5	48	67.2	6.05
Fort Madison	Lee	Dan'l McCready	19	88	15	52	70.8	4.61
Guttenberg	Clayton	Jas. P. Dickerson	3,11,30	84	6	41	63.2	.....
Mount Vernon	Linn	Prof. A. Collins	28	84	6	43	65.8	.....
Iowa City	Johnson	Prof. T. S. Parvin	3	85	15	47	66.1	7.42
Independence	Buchanan	Geo. Warne, M. D	28	85	5	47	65.5	8.95
Near Independence	do	Mrs. D. B. Wheaton	30	90	5	44	66.7	11.50
Waterloo	Black Hawk	T. Steed	1,28	86	5	46	65.7	5.15
Vinton	Benton	James Wood	3,12	85	4	48	67.0	10.90
Rockford	Floyd	H. Wadey	29	87	5,15	50	66.7	.....
Algona	Kossuth	I. H. Warren	30	82	14	45	66.5	.....
Near Algona	do	Ph. Dorweiler	30	85	4	42	63.4	.....
Rolfe	Pocahontas	Oscar I. Strong	18	93	2	43	67.0	5.35
Fontanelle	Adair	A. F. Bryant	28,30	86	14	49	68.6	8.13

Table showing the range of the thermometer, &c., for June—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
				°		°	°	In.
IOWA—Continued.								
Grant City	Sac	Mr. and Mrs. Miller.	18, 28, 30	92	4	42	67.3	4.43
Logan	Harrison	Jacob F. Stern	28	81	5	35	63.4	9.00
Woodbine	do	M. E. & R. Witter	3	86	4	46	67.8	.....
Averages							66.4	7.42
MISSOURI.								
St. Louis University	St. Louis	Rev. F. H. Stuntebeck	19	92	5, 15	56	72.1	6.02
Allenton	do	A. Fendler, M. D.	19	91	6	48	68.4	8.14
Hematite	Jefferson	John M. Smith	19	91	7	55	73.1	5.45
Rolla	Phelps	Homer Ruggles	19	88	15	46	68.0	6.09
Jefferson City	Cole	Nicolas de Wyl	19	86	5	50	69.0	.....
Hermitage	Hickory	Dr. W. Moore	18	90	5	48	69.9	6.25
Bolivar	Polk	James A. Race	19	86	15	50	72.3	3.80
Warrensburg	Johnson	J. E. Pollock	28	90	14	56	73.6	7.57
Harrisonville	Cass	John Christian	22	88	14	50	69.5	8.23
St. Joseph	Buchanan	Rev. Henry Bullard	12, 18, 19	84	4, 6, 7, 16	54	71.1	10.65
Oregon	Holt	William Kaucher	18, 19, 29	85	15	49	69.4	7.49
Averages							70.5	6.99
KANSAS.								
Atchison	Atchison	Dr. H. B. & Miss Horn	17, 18	89	4, 5	52	69.9	7.75
Olatha	Johnson	W. Beckwith	3	89	14	51	68.3	9.40
Paola	Miami	L. D. Walrad	20	99	15	44	70.4	6.30
Holton	Jackson	Jas. Watters, M. D.	28, 29	92	4	52	67.5	.....
Le Roy	Coffey	J. G. Shoemaker	10	96	5	48	72.0	8.60
Neosho Falls	Woodson	Mrs. E. W. Groesbeck	28	86	15	48	60.3	8.80
Manhattan	Riley	Prof. B. F. Mudge	28	86	14	46	66.4	8.85
Council Grove	Morris	A. Woodworth, M.D.	18, 19	86	5, 14	57	71.6	5.95
Averages							68.3	7.95
NEBRASKA.								
Dakota	Dakota	H. H. Brown	3	90	14	55	65.7	.....
Omaha Mission	Omaha Reserve	Rev. Wm. Hamilton	3, 30	89	9	48	67.1	4.75
Elkhorn	Washington	John S. Bowen	3, 12, 18, 28	84	5	49	67.1	.....
De Soto	do	Charles Seltz	18	86	5	42	65.8	7.13
Fontanelle	do	Henry Gibson	18	88	14	48	67.6	.....
Bellevue	Sarpy	Mrs. E. E. Caldwell	3, 18	84	4	51	69.6	4.80
Glendale	Cass	Dr. A. L. & Miss Child	17	90	4	48	68.7	9.05
Nebraska City	Otoe	I. M. Pittenger	18, 19, 24, 28	81	15	52	70.0	8.88
Peru	Nemeha	J. M. McKenzie	29	89	14	51	69.5	.....
Decatur	Burt	Dr. S. C. Case	30	90	4	46	67.0	.....
Averages							67.8	6.92
UTAH TERRITORY.								
Coalville	Summit	Thos. Bullock	14, 22	88	1	46	65.1	.....
CALIFORNIA.								
Monterey	Monterey	C. A. Canfield, M. D.	28	83	1	46	62.8	0.03
Watsonville	Sta. Cruz	A. J. Compton	26	90	6	56	64.2	.....
Vaccaville	Solano	J. C. Simmons	28	99	6	56	72.8	.....
Averages							66.6	0.01
MONTANA TER.								
Deer Lodge City	Deer Lodge	Granville Stewart	30	93	3, 7	44	64.6	1.00

NOTES ON THE WEATHER—JUNE, 1869.

Lisbon, Me.—Faint aurora 6th; apple blossoms 7th; cool, damp June.
Steuben, Me.—Frosts 9th, 10th; wet, cloudy, cold June.
West Waterville, Me.—Apples full bloom 4th; slight frosts, 8th, 9th, 10th. No entirely clear day in June.
Gardiner, Me.—Auroras 6th, 12th, 16th, 29th; frosts in low grounds 7th, 8th, 9th, 10th; average June temperature for 33 years 63.8°, in 1829, 60.8°, 1869, 60.89°; average rain fall 3.2 inches, this year 5.5 inches.
Norway, Me.—Splendid aurora 6th, streamers from every part of the heavens to the zenith, where they piled up in masses and obscured the stars; could read time of my watch at 11.30 p. m. by its light.
Cornish, Me.—Firefly 7th; blackberry blossoms 13th; ripe strawberries 19th; Clinton grape blossoms 21st, Hartford prolific 26th, Concord 27th, Diana 30th.
Cornishville, Me.—Aurora 4th; frost 6th; June average temperature for 40 years 61.66°, in 1869, 64.89°.
Stratford, N. H.—Cherry blossoms 3d to 5th; apple 6th.
North Barnstead, N. H.—Thunder showers and hail large as grapes 11th.
Goffstown Center, N. H.—Aurora 6th, 25th; month cold and wet, no heavy thunder or sharp lightning in June.
Lunenburg, Vt.—Frosts 7th, 8th; wet, cold month; crops two weeks late.
Randolph, Vt.—First five days warm; light frost 7th; coldest June in five years.
West Charlotte, Vt.—Apple blossoms 3d; frost 7th; brilliant auroras at 4 a. m. 15th, 20th, 26th, 27th, and at 7 p. m. 19th, and bright red 4 a. m. 20th, and at 8 p. m. 23d; wild strawberries ripe 24th; month cold; vegetation almost at a stand still.
Panton, Vt.—Brilliant aurora, slight frost 7th; faint auroral light 23d.
Kingston, Mass.—Splendid auroral belt from east to west a little south of zenith 29th. Rain on 19 days in June.
Topsfield, Mass.—Aurora 6th; drought, wells failing 20th. Rain latter part of month revived crops.
New Bedford, Mass.—Tulip tree blossoms 19th, locust 21st. Haying began 30th.
Worcester, Mass.—Auroras 6th, 7th, 29th, and 30th.
Lunenburg, Mass.—June average temperature for thirty years 66.24°, 1868, 66.74°, 1869, 65.71°.
Amherst, Mass.—Aurora 30th. June was alternate sunshine and showers—rain on thirty days.
Richmond, Mass.—Heavy rain and freshet 28th. June cool and rainy.
Williams College, Mass.—Laurel blooming 24th. Fine auroral arch 29th, aurora 30th.
Newport, R. I.—Severe rain 28th, at Tiverton, sixteen miles north-northeast, tempest with hail large as pullet's eggs, doing much damage.
Middletown, Ct.—Bright auroras 6th, 30th; severe thunder storms with much hail 8th, 28th; that of 8th visible here till 11th.
Colebrook, Ct.—Succession of thunder storms 28th, great freshet, roads impassable; trains stopped over a week.
Moriches, N. Y.—Damp, cloudy month; few drying days.
South Hartford, N. Y.—Copious rains; very cool.
Garrison's N. Y.—Streams of auroral cloud moving sixty miles per hour from east to west 30th.

Glasco, N. Y.—Beautiful aurora at 9 p. m. on 6th.

North Hammond, N. Y.—Cloudy, cold June; rain on fourteen days.

Leyden, N. Y.—Auroras 6th, 12th. This is "the rainy June;" cold, but no frosts; rainy, but no electric displays; 1.74 inches more rain than June, 1868, and 4.89° colder.

South Trenton, N. Y.—Coldest June in ten years; rain on fourteen days, and only two days pleasant sunshine.

Cazenovia, N. Y.—Diffuse aurora 6th; frosts 7th, 9th.

Depauville, N. Y.—Auroras 12th, 16th; bees swarm 27th; month 5° lower than June average of five years, and 9° lower than in 1865.

Palermo, N. Y.—Aurora 6th; frost 7th; rain on twenty-one days.

Tioga, N. Y.—Frost visible on boards 9th; no damage.

Himrods, N. Y.—Faint aurora 6th; white frost 9th; no damage.

Little Genesee, N. Y.—Cool, wet month; light frosts 6th, 17th.

Buffalo, N. Y.—Strawberries ripe 21st. Mean temperature 3½° lower than in twelve years; excess of rain 2.75 inches.

Newark, N. J.—June average temperature only 68°; above that for twenty-five years; no extreme, but uniformly high. Rain fall only exceeded four times in twenty-five years.

New Germantown, N. J.—Aurora 6th; wheat harvest 30th.

Newfield, N. J.—Wheat headed 1st; haying began 16th. Rain on sixteen days; month very variable.

Greenwich, N. J.—Rose bugs 1st; orchard grass cut 2d, clover 17th, wheat 28th; faint auroras 6th, 8th; apples ripe 27th.

Vineland, N. J.—First ten days rather cool, rest warm.

Fallsington, Pa.—Aurora 6th; damp, uncertain hay weather.

Horsham, Pa.—Bright aurora all night 6th. June warm, very wet; but little hay made.

Plymouth Meeting, Pa.—Haying began 28th. After 20th frequent showers, heavy thunder, vivid lightning, but little wind.

Dyberry, Pa.—Strawberries ripe 6th; slight frosts 7th, 9th.

Factoryville, Pa.—Numerous auroral patches and streamers 6th.

Harrisburg, Pa.—Rain on 14 days, seven thunder showers.

Carlisle, Pa.—Grapes in full bloom 11th; first clover cut 16th; barley 24th.

Fountain Dale, Pa.—Aurora 5th; strawberries ripe 6th. First half of June decidedly cool.

Tioga, Pa.—First fifteen days cold, remainder warmer; coldest June in ten years; rain nearly every day.

Grampian Hills, Pa.—Wheat heading 5th; frost 7th, little damage. Last half of June very wet.

Franklin, Pa.—Bright aurora 6th; slight frost 7th.

Connellsville, Pa.—White frost 7th; temperature at sunrise 36°.

Woodlawn, Md.—Aurora 6th; white frost in valleys, 7th, 9th.

Bacon's Castle, Va.—White aurora 8th; haying began 16th, first seventeen-year locusts 25th; ripe blackberries 27th; hottest June known here.

Odmorn, Va.—Laurel (*kalmia*) blossoms 3d; elder 18th; harvest began 21st.

Lexington, Va.—Strawberries ripe 1st; cut clover 21st; wheat 28th.

Wytheville, Va.—June warmer than usual, last part rather dry; harvesting 26th, a week earlier than usual.

Albemarle, N. C.—Terrific gale and thunder; rain horizontal 22d; Scuppernong grape just in bloom.

Penfield, Ga.—Storm from southwest 14th; blew down trees, fences, &c.; katydids 28th; always appear between 17th and 28th.

Opelika, Ala.—Blackberries ripe 1st; figs 8th; watermelons 24th; peaches and nectarines 27th.

Natchez, Miss.—No clear days; twenty cloudy, ten rainy.

Elizabethton, Tenn.—Uncommon amount of rainy weather, especially latter part of month.

Memphis, Tenn.—Aurora low in north 6th; ripe plums and blackberries 14th.

Steubenville, Ohio.—Light frost 7th; thunder shower, hail, 14th.

Kelley's Island, Ohio.—Black locust blossoms 19th; aurora 28th; Catawba grape blossoming 30th.

Westerville, Ohio.—Numerous spots on sun 2d; twenty-five to thirty-five, some groups, 4th; groups and three large 9th; numerous and some large 10th, 11th; seven, only one large, 14th; twelve 15th; nine, all small, 16th; a dozen 17th; quite a number, small, 19th; numbers and size increasing 22d, 23d; decreasing 30th.

Bowling Green, Ohio.—Unusual number of showers and electrical displays in June.

Urbana, Ohio.—Frost 7th; mean temperature two degrees below average; rain two inches less than average.

Jacksonburg, Ohio.—Thunder storm 9th; prostrated trees, &c.; fall barley cut 22d; wheat 29th.

Alpena, Mich.—White frost 8th; [illegible]ht frost 17th; aurora 16th; corn planted [illegible] 1st, an inch high 30th.

Litchfield, Mich.—White frost 6th, injured beans, &c. Nearly one-third of a year's rain-fall this June; cellars flooded that were never flooded before.

Northport, Mich.—Frost 6th, doing some damage on east side of bay; ice one-half inch thick. June never so wet in twenty years.

Old Mission, Mich.—Frost 6th, killed tomatoes; apple blossoms 7th; slight frost 25th.

Otsego, Mich.—Rain nearly every day in June.

Veva, Ind.—Cut grass 18th; wheat 22d; work delayed by rains.

Spiceland, Ind.—Frost 6th, no hurt. With 200-power counted spots on sun; 215 1st, 225 2d, 135 6th; and with 100-power, 124 7th, 75 10th, 21 14th, 27 16th, 65 19th, 192 24th.

Columbia City, Ind.—Gale and thunder storm 18th, much damage.

Knightstown, Ind.—Light frost 6th; ripe strawberries, wheat in head 8th.

Indianapolis, Ind.—Slight frosts 6th and 7th; aurora 19th; harvest 30th. Colorado bugs injuring potatoes, and traveling slowly eastward.

King's Mills, Ill.—Rainiest June in twenty years.

Ottawa, Ill.—Deluging thunder storms from 21st to 28th; great freshet, drowning corn and washing away gardens on low grounds.

Winnebago, Ill.—Slight frost 4th; month 4.28° below average of eleven years, and 8.20° below June, 1867, the warmest in eleven years. Rain 3.14 inches more than average of eleven years.

Tiskilwa, Ill.—June very wet; unequaled since June, 1844.

Elmira, Ill.—Light frost 6th. Rain on 17 days; fences, bridges swept away by freshets.

Andalusia, Ill.—Rain almost every day from 10th to 27th.

Manitowoc, Wis.—Thermometer at 33° at sunrise 6th; tender vegetables injured. Coldest June in eighteen years—0.40° below June, 1859, and 7.75° colder than June, 1858, the coldest and the warmest June of that period.

Plymouth, Wis.—Thunder showers, with hail, 19th, 22d, 29th. Month cool and wet; 5.4 inches more rain than June average of five years.

Hingham, Wis.—The muddiest roads seen here, in June, in twenty-one years.

Milwaukee, Wis.—Greatest rain-fall ever measured here in June, and, except August, 1851, (9.03 inches,) and May, 1858, (8.51 inches,) in any

other month, and more than double the June average (3.734 inches) of twenty-six years.

Embarrass, Wis.—Frosts 6th, (nipped tender vegetables,) 11th.

New Lisbon, Wis.—Light frost 5th; severe—and aurora—6th. June had one clear day, four without rain, seven rain all day, rain on twenty-six days; floods cover the earth.

Afton, Minn.—Light frost 5th; severe hail-storm from northwest 12th; some measured 1.5 inch diameter by one-half inch thick.

St. Paul, Minn.—But few warm days till 27th; light frost 16th; many rains, yet only three Junes in eleven had less rain.

Sibley, Minn.—Frosts 5th, 6th, 15th; little damage.

Clinton, Iowa.—Aurora 6th; very heavy rain and hail 17th.

Monticello, Iowa.—June wet; a few hot days, but generally cool.

Fort Madison, Iowa.—In 1868, rain-fall April 7.51 inches; May, 9.84; June, 2.13=19.48 inches. In 1869, April, 3.36; May, 4.68; June, 4.61=12.65 inches.

Guttenberg, Iowa.—Frosts 5th, 6th, 16th, the latter killing beans, &c.

Independence, Iowa.—Bright white aurora 6th; locust blossoms 7th; very wet; farmers suffering. Frost on high lands 6th.

Waterloo, Iowa.—No rain in first part; abundant toward close.

Rockford, Iowa.—Slight frost 5th; rain here; heavy hail east, 21st.

Algona, Iowa.—About 2 p. m. 19th thunder storm, with tornado from south, then west, then northwest, destroying trees, unroofing houses, &c.

Fontanelle, Iowa.—Frost nipped tender plants; aurora 6th.

Grant City, Iowa.—Wild rose 3d; slight frost 5th; aurora 6th; from 4 to 5 p. m. on 18th, thermometer 100°.

Allenton, Mo.—Month unusually wet, interfering with harvests.

Hematite, Mo.—Till 18th, cool and showery; 22d to 24th, hazy, and *very* heavy dews; 25th to 30th, showers, with much lightning and thunder. Wheat harvested and secured 17th to 24th.

Rolla, Mo.—Rains, mostly at night; on eighteen days three cloudy days.

Oregon, Mo.—Frost 5th, little damage; aurora 6th; fire-flies 10th; latter part inundations, floods, bridges swept away, and railroad trains stopped.

Burlington, Kansas.—Light frost 5th; cut wheat 21st; season and month rainy. May, 6.40 inches; June, 7.30; and since last January, 21.78 inches!

Neosho Falls, Kansas.—Faint aurora 6th. Very wet and cold June.

Manhattan, Kansas.—Heaviest rains ever known here 24th, 25th, 26th, doing much damage.

Council Grove, Kansas.—Not a clear, sunshiny day in June; atmosphere sunshiny but saturated with moisture; much thunder and lightning.

Dakota, Neb.—Frost, injuring vines, 5th; aurora 6th.

Elkhorn, Neb.—Frosts 5th, 9th; no damage. The wettest, coldest June in eleven years.

Fontanelle, Neb.—Frosts 4th, 13th, 14th; unusually cold, wet, frosts, but crops good.

Nebraska City, Neb.—Frost 5th, nipped some corn; severe thunder storm, with hail, 12th; some hail-stones weighed an ounce each.

Peru, Neb.—Hardest rain in seven years 19th, sweeping bridges, &c.; wettest June since 1858.

Decatur, Neb.—Red aurora 6th, streamers to the zenith.

Watsonville, Cal.—A month of unusual fog and high winds.

Vacaville, Cal.—On 27th the north wind, like the breath of a furnace, wilted vegetation, and the sun blistered and destroyed much fruit.

MONTHLY REPORT

OF

THE DEPARTMENT OF AGRICULTURE,

FOR

AUGUST AND SEPTEMBER,

1869.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1869.

MONTHLY REPORT.

WASHINGTON, D. C., *September* 22, 1869.

SIR: I herewith present for publication a report upon the condition of farm crops for the months of August and September, including extracts from statistical correspondence, and articles upon the agriculture of Colorado, stock-raising in Mississippi, fruits on the eastern shore of Lake Michigan, abortion in cows, live stock at Chicago, the tea plant in Mississippi, Guernsey cattle, current prices of English short-horns, meteorological tables, and various other matters.

Respectfully,

J. R. DODGE,
Statistician.

Hon. H. CAPRON,
Commissioner.

CONDITION OF THE CROPS.

The following table showing the mean temperature and rain-fall of the several States, as indicated by the meteorological returns of the Smithsonian observers, for the months of July and August, in comparison with those months of last year, will aid in illustrating the accompanying crop statements. The season has been peculiar. The region most subject to drought, that west of the Mississippi and Missouri, has had the most regular supply of rain, and the valley of the former has had an abundant rain-fall to its mouth, while Alabama and Georgia have suffered from drought, and the Atlantic States in a still higher degree, not only throughout the tide-water region, but in a large portion of the eastern States.

State.	1868.				1869.			
	July.		August.		July.		August.	
	Mean temp.	Rain-fall.	Mean temp.	Rain-fall.	Mean temp.	Rain-fall.	Mean temp.	Rain-fall.
	°	*Inches.*	°	*Inches.*	°	*Inches.*	°	*Inches.*
Maine	70.9	2.80	67.6	2.25	68.2	2.28	64.2	1.93
New Hampshire	73.6	2.73	68.8	2.81	67.9	1.48	62.7	2.98
Vermont	74.4	2.41	66.1	2.44	68.1	2.76	64.5	3.13
Massachusetts	74.2	1.62	69.5	4.31	69.8	2.76	66.9	2.03
Rhode Island	69.7	2.99	67.9	2.71	69.6	0.76	67.4	3.21
Connecticut	73.4	2.19	69.6	6.57	70.1	3.70	67.7	2.65
New York	77.2	2.63	70.8	3.62	69.6	4.61	67.9	2.93
New Jersey	78.9	5.37	73.0	4.12	74.2	2.76	73.1	1.36

Mean temperature and rain-fall of the several States, &c.—Continued.

State.	1868.				1869.			
	July.		August.		July.		August.	
	Mean temp.	Rain-fall.	Mean temp.	Rain-fall.	Mean temp.	Rain-fall.	Mean temp.	Rain-fall.
	°	*Inches.*	°	*Inches.*	°	*Inches.*	°	*Inches.*
Pennsylvania	78.6	3.17	71.7	3.34	72.1	3.31	70.8	1.65
Delaware	.....	.....	.....	.....	78.4	1.65	70.9	0.30
Maryland	80.5	3.37	74.2	4.69	75.8	4.02	74.1	1.32
Virginia	78.8	4.69	74.1	3.30	77.0	2.94	76.2	1.35
West Virginia	80.5	.....	75.7	.....	73.8	3.40	76.0	1.30
North Carolina	80.6	8.11	76.4	5.54	78.8	3.14	77.4	3.70
South Carolina	80.8	.....	76.9	6.40	82.1	3.81	80.7	4.50
Georgia	80.3	3.54	71.2	2.17	79.5	4.89	78.4	2.57
Alabama	79.5	5.61	76.1	3.14	80.0	3.95	80.3	3.10
Florida	82.8	7.70	83.6	4.70	83.9	7.57	83.2	4.55
Texas	82.0	3.90	81.5	5.03	81.6	9.16	83.0	3.24
Louisiana	83.3	.....	82.1	.....	.....	.....	.....	.....
Mississippi	80.1	9.64	79.5	3.62	81.8	2.86	81.2	6.46
Tennessee	81.3	2.98	76.7	4.46	77.7	3.04	80.1	3.05
Kentucky	80.8	3.17	75.3	5.50	75.9	4.52	77.4	3.51
Ohio	81.0	2.47	72.2	4.52	73.8	4.99	71.5	1.68
Michigan	76.0	1.45	66.1	2.52	68.6	4.07	66.8	3.26
Indiana	82.3	2.81	72.8	4.11	74.3	6.32	75.8	3.26
Illinois	81.8	2.41	71.2	3.13	69.4	4.99	75.3	3.86
Wisconsin	77.8	2.86	67.5	2.60	68.7	3.12	68.0	4.84
Minnesota	78.1	3.65	67.1	3.02	69.1	2.42	68.8	7.46
Iowa	80.8	4.08	68.2	2.93	71.1	7.80	71.9	7.55
Missouri	82.9	2.51	73.1	5.49	76.6	4.34	78.5	4.10
Kansas	85.5	4.06	72.5	8.75	75.5	6.88	79.4	4.86
Nebraska	83.2	2.52	70.5	4.01	81.5	6.60	74.6	8.48
Utah	73.8	.....	72.8	3.69	72.6	.....	73.6	.....
California	66.6	.....	.....	.....	70.2	0.09	67.6	0.00
Montana	.....	.....	.....	.....	66.5	0.25	63.1	0.50

On the southern Atlantic seaboard the heat has been greater this year than in 1868, and the rain-fall less; north and east of New York the heat has been less, as also the rain-fall. In the one case it was too hot, in the other too cold, for corn and other summer crops, which suffered accordingly. While drought has prevailed east of the Alleghanies, the great Mississippi basin has had an unusual amount of rain. West Virginia and Ohio alone of the central area had less rain-fall (in August) than in 1868. The excessive moisture of the summer is sustained to its close, especially in Wisconsin, Minnesota, Iowa, Nebraska, Kansas, and Missouri. Both the early and the latter rains have been somewhat extraordinary west of the Missouri, yet the high temperature and deep thirsty soils of that region have converted the visitation into a blessing.

The drought of the seaboard has not been equalled in many years. "Extracts from correspondence" will show the injurious effects of this excessive drought on corn, cotton, and garden vegetables.

Corn.—The corn crop has been the prey of numerous ills in every section of the country. The only States that now show an average condi-

tion are: Nebraska, Kansas, Florida, Louisiana, Texas, and Arkansas. Excessive rains retarded planting, and necessitated replanting in the spring throughout the west and south; cold, wet weather prevented healthy, vigorous growth in almost every State; and in the season of earing and maturing a serious drought affected it on the Atlantic coast, with injurious heat in the South, and unfavorable reduction of temperature in the North. In deep soils, naturally drained, the extreme moisture of the West did no injury; in heavy or flat lands, with clay subsoil, the damage was great, in some cases resulting in total failure. The loss, as shown in the table, is forty-nine per cent. in Virginia; from thirty to forty in Maine, Vermont, Maryland, North Carolina, South Carolina, Tennessee, Kentucky, Illinois, Michigan, Wisconsin; from twenty to thirty in New Hampshire, Connecticut, New York, New Jersey, Delaware, Georgia, Indiana, Ohio, Iowa, and Minnesota; from ten to twenty in Massachusetts and Pennsylvania, and one to ten per cent. in Rhode Island, Alabama, Mississippi, Missouri, and California. Unless the close of the season is very favorable, there must be one hundred and fifty millions of bushels less than a full crop.

Cotton.—There will be a reduction in the yield of cotton, from the Carolinas to Alabama, and a material increase from Mississippi to Texas. Georgia, Florida, and South Carolina have suffered most, mainly from drought, in a few localities from rust, the caterpillar, and boll worm. Our estimates make the increase in Mississippi, Louisiana, and Texas, respectively, ten, twelve, and fourteen per cent. The probabilities at present favor a yield of two million seven hundred and fifty thousand bales.

Wheat.—This crop, as a whole, is large. The only States showing a decrease are Illinois, Michigan, Iowa, and California. Some of it is inferior in quality, and a small portion has been injured by rains after harvest, but a considerable portion of the western wheat is of good quality, and that of the South is decidedly superior.

Fruit.—Fruits, as a rule, have yielded abundantly; apples in a less degree than other species. New York, Pennsylvania, West Virginia, Michigan, and Illinois, all apple regions, have nearly a full supply; New England a material reduction.

Stock hogs.—There is not only a reduction in the number of stock hogs, but also in condition. Missouri, Kansas, Nebraska, and Minnesota, rapidly growing States, have made an increase in numbers, as have some of the southern States. There is apparently a decrease, as compared with last year, of five to ten per cent.

Table showing the condition of the crops on the 1st day of September, 1869.

STATES.	CORN.—Average condition September 1.	WHEAT.—Average condition when harvested.	RYE.—Average condition when harvested.	OATS.—Average condition when harvested.	BARLEY.—Average condition when harvested.	BUCKWHEAT.—Average condition September 1.	POTATOES, (*Solanum tuberosum.*)—Average condition Sept. 1.	POTATOES, (*Batatas edulis,*) sweet.—Average condition Sept. 1.	COTTON.—Average condition September 1.	BEANS.—Average condition September 1.	SORGHUM.—Average condition September 1.	SUGAR CANE, (not sorghum.)—Average condition September 1.
Maine	6	11.2	10.6	11.6	11	9.6	9	.....	.....	8.8	.....	.....
New Hampshire	8	11.3	10.7	11.4	10.8	10.2	10.5	.....	.....	9.8	.....	.....
Vermont	6.8	11.2	10.1	12	10.7	10.6	10.6	.....	.....	9.4	.....	.....
Massachusetts	8.7	10.3	10.6	12.2	10.6	9.5	9.1	.....	.....	8.5	.....	.....
Rhode Island	9.9	.....	10.6	11	11	.....	12.3	.....	.....	10	.....	.....
Connecticut	8	11.5	11.5	12.5	11.5	9	11.5	.....	.....	10	9.5	.....
New York	7.3	10.6	9.9	11.5	11.2	9.8	10.5	.....	.....	9.5	.....	.....
New Jersey	7.5	11	10.9	11.2	9.5	7.7	11.7	9.4	.....	10.8	9.3	.....
Pennsylvania	8.3	11	10.4	12	9.9	9.1	10.8	10	.....	9.3	8.5	.....
Delaware	8	11	10	9	10	3.5	7	7.5	.....	10	8	.....
Maryland	6.3	11.3	10.1	10.7	9.4	7.2	7.9	7.4	.....	8	7.5	.....
Virginia	7.1	11.5	10.9	10.2	.....	6.4	7.3	7.3	.....	6.2	5.7	.....
North Carolina		11.8	10.7	10.7	8	8	9.1	8	8.8	7.7	7.6	.....
South Carolina		10.8	10.2	11.2	.....	.....	8.2	6.1	7.7	8	7.1	6.3
Georgia		10.2	9.8	9.9	10	.....	9.2	7.8	8	8.4	7.7	9.2
Florida	10.6	.....	9.5	10.6	.....	.....	9.5	9.6	8	9	.....	9
Alabama	9.3	10.4	10	10.2	10.2	.....	9.2	8.6	9.4	9	9.1	9.5
Mississippi	9.3	10.8	10	10.2	10	.....	9.5	9.5	11	10.2	9.3	10.2
Louisiana	11	.....	11	12.3	.....	.....	11	10.2	12	10	12.5	11.3
Texas	11.2	11	10.5	10.6	.....	.....	11.5	10	11.4	11.5	5.8	10.2
Arkansas	10.2	11	10.6	11.5	.....	.....	11.2	10.4	9.8	9.2	9.5	.....
Tennessee	7	10.9	10.2	10.1	10.2	8.1	8.2	7.7	7.9	7.7	7.5	.....
West Virginia	7.7	11	9.2	10.9	10	8.5	9.7	9.6	.....	9.2	8.9	.....
Kentucky	6.8	11.5	9.4	10	9.4	9.1	9.4	8.2	9.6	8.1	8.1	.....
Missouri	9.9	10.1	9.7	11	9.7	9.8	11.7	10.3	9.6	9.9	9.2	.....
Illinois	6.8	8.9	9.7	10.6	8.2	9.6	11	9.9	8	9.8	8.8	.....
Indiana	7.2	10.5	10	10.7	10.5	9.2	11.1	10	.....	10	8.6	.....
Ohio	7.4	11	10.9	11.7	10.6	9.1	11	9.7	.....	9.4	8.3	.....
Michigan	6.8	9.8	10.1	11	10.1	10	10.8	7.7	.....	9.7	8.4	.....
Wisconsin	6.5	10.5	10.1	11.5	10.7	9.8	11	.....	.....	10.2	7.5	.....
Minnesota	7.8	11	10.7	11.1	11	10	11.7	.....	.....	9.8	7.2	.....
Iowa	8	9.2	9.3	10	9.4	9.9	11.7	9.6	.....	9.8	8.5	.....
Kansas	12	11	9.7	11.6	10.5	11.5	11.6	10	.....	9.7	10.6	.....
Nebraska	11.5	10.2	10.1	11.6	10.5	11.5	12	9	.....	9.6	11	.....
California	9 9	9.5	9.6	9.5	10.2	10.4	10.2	10.2	.....	9.9	.....	.....

Table showing the condition of the crops, &c.—Continued.

STATES.	TOBACCO.—Average condition September 1.	HAY.			HOPS.		STOCK HOGS.		WOOL.—Weight of fleece compared with an average clip.	APPLES.—Average condition September 1.	PEACHES.—Product compared with an average.	GRAPES.—Average condition September 1.
		Product of timothy compared with last year.	Average condition of timothy when harvested.	Product of hay of all kinds compared with last year.	Acreage compared with last year.	Average condition September 1.	Number for fattening compared with last year.	Average condition as to weight and size.				
Maine	.....	8.9	11.2	8.7	9	9.5	8.9	10	8.9	6.2	.....	9.3
New Hampshire	.....	9.1	10.8	8.6	9	9	9.5	9.7	9.3	7.4	8.6	9.6
Vermont	.....	10.3	10.1	10	8.5	11	9	10	9.6	9	.....	9
Massachusetts	8.3	9.1	10.3	9.1	.....	.....	9.8	9.8	9.8	6.5	9	8.5
Rhode Island	.....	11.6	12	10.6	.....	.....	9.3	9.6	9.6	7.6	10	10.6
Connecticut	9.5	10.2	12	10.7	.....	.....	9.2	10	10.2	5.2	9	8.5
New York	9.6	11.4	10.3	11.4	9.4	10.1	9.2	10	9.6	8.8	11.6	9.9
New Jersey	.....	9.9	10.2	10.1	.....	.....	9.4	9.9	10.2	10.2	13.5	9.9
Pennsylvania	8.3	11	10.1	11.3	9.3	9.7	10.1	10.1	9.7	10.4	12.6	10
Delaware	.....	7.5	9	10	6	2	8	10	10	9.5	13.5	8.5
Maryland	7	9.8	10.5	9.5	.....	.....	10	9.7	9.7	11.5	11.9	10.5
Virginia	5.9	10.4	10.2	10.5	8.7	7.5	9.5	9.5	9.9	9.8	7.2	10.8
North Carolina	7.8	9.5	9.9	9.2	.....	.....	9.7	9.9	9.8	6.9	3.3	9.8
South Carolina	7	.....	6.5	6.7	.....	.....	10	10.1	9.5	7.6	4.7	9.6
Georgia	7.5	8.6	7.8	9.4	.....	.....	9.6	9.7	9.9	3.9	5.2	9.2
Florida	11	.....	.....	13	9.5	.....	11.4	10.3	10	10	9.8	12
Alabama	9.5	.....	7	8.5	.....	.....	9.4	9.8	10	6.3	4.9	8.9
Mississippi	9.6	.....	.....	10.1	.....	.....	10	9.6	9.6	7.7	5.6	9.6
Louisiana	10	.....	.....	11	.....	.....	11.5	9.3	9.9	10.1	7.2	10
Texas	10.5	.....	.....	11	.....	.....	10	9.8	9.5	8.8	8.9	9.5
Arkansas	10	13	13	12.8	.....	.....	11.6	10.8	10.3	9	5.2	9.2
Tennessee	8.2	10.9	11.1	10.8	.....	.....	9.4	9.7	10.2	7.4	5.5	9.4
West Virginia	8.9	11.5	10.9	12.1	.....	10	9	9.5	9.9	12	11	10
Kentucky	7.7	10.1	10.3	10	.....	.....	9.6	10.2	10.1	10.1	10	8.8
Missouri	9.4	13	10.8	13.6	10.3	10.5	10.3	10.2	10.1	11.3	7.1	9.1
Illinois	9.7	11.8	9.7	11.5	9.5	9.3	9.1	9.6	9.8	9	8.5	7.5
Indiana	9.8	11	10	11.7	9.7	10.3	9.1	9.6	9.7	10	9.5	8.3
Ohio	8.3	10.7	10	11.1	9.6	9.7	9	9.6	9.5	8	11.8	8
Michigan	10	11.3	9.4	11.3	7	9.6	9.8	9.9	9.4	9.9	15.1	9.9
Wisconsin	9.2	12.2	9.3	11.1	6.5	9.2	9.9	9.8	9.8	10	.....	9.5
Minnesota	9.1	12.4	10.5	10.2	7.5	10.8	10.7	10.2	10	11.5	.....	10.5
Iowa	8.8	11.2	9.3	11.2	10	9.5	9.5	9.8	9.8	10.2	4.7	8.7
Kansas	11	12	11.5	12.5	9.3	10	10.7	10.5	10.5	11.3	6.1	10.6
Nebraska	10	11.5	10.3	12	.....	.....	10.6	10.5	10.1	9.2	6.2	8.4
California	10.2	9.4	8.6	10.2	10.1	9.5	9.6	9.9	10.2	10	8.3	8.7

Table showing the condition of the crops on the first day of August, 1869.

STATES.	SPRING WHEAT.—Average condition August 1.	SPRING RYE.—Average condition August 1.	OATS.—Average condition August 1.	BARLEY.—Average condition August 1.	CORN.—Average condition August 1.	BUCKWHEAT.		BEANS.—Average condition August 1.	POTATOES, (*Solanum tuberosum.*)—Average condition August 1.	POTATOES, (*Batatas edulis,*) SWEET.—Average condition August 1.	HAY.—Average condition of timothy, August 1.
						Acreage compared with last year.	Average condition August 1.				
Maine	10	10	10.2	10.2	8.2	10.1	9.6	9.3	10.5	.....	9.9
New Hampshire	10.5	10.4	11	11	9	9.6	9.6	10.9	10.4	.....	9.6
Vermont	10.7	10.5	11	10.6	8.4	10	10.2	10	10.4	.....	10.8
Massachusetts	10.4	10.2	10.5	10.2	9.1	9	9.8	8.6	10.8	.....	10.6
Rhode Island	10	10	10.3	10.3	9.6	10	10	8.5	10.6	.....	10.3
Connecticut	10.5	11	11	11	8.6	8.8	9.6	10.2	11	.....	10.4
New York	10.7	10.2	11	11	8	9.8	10.3	10	11.1	.....	10.9
New Jersey	.....	.....	10.8	10.2	10.1	9.6	10	10.1	10.8	10.6	10
Pennsylvania	10.4	10.1	11.2	10.6	9.7	10	10.2	9.8	11.5	10.5	10.7
Delaware	.....	.....	10	10	10	10	12	10	12	10	10
Maryland	.....	.....	10.5	10	9.7	9.5	10	10	11	9.5	9.6
Virginia	.....	.....	10	.....	8.7	9.8	8.8	8.7	10	9.8	10.1
North Carolina	.....	.....	10.6	8.2	9.2	10.6	9.5	8.6	9.7	9.1	9.6
South Carolina	.....	.....	10.8	.....	6.2	.....	.....	7.2	8	6.6	8.7
Georgia	.....	.....	10.6	10.2	9.6	.....	.....	9.2	9.9	9.5	9.7
Florida	.....	.....	10.2	.....	10.3	.....	.....	9.7	8.3	11.2	.....
Alabama	.....	.....	10	.....	10.3	.....	.....	9.1	9.3	9.5	.....
Mississippi	.....	.....	10.3	.....	9.5	.....	.....	9.5	9.7	10	.....
Louisiana	.....	.....	9.1	.....	10.5	.....	.....	.....	10.7	9.8	.....
Texas	.....	.....	11.3	9.8	12	.....	.....	10.5	12.4	10.6	10.4
Arkansas	.....	.....	11	.....	10.5	.....	.....	11	11.5	10.4	10.7
Tennessee	.....	.....	10.6	10	9.4	10.2	10.1	9	9.9	10	11
West Virginia	10.5	10.3	10.5	10.3	10.6	10.1	10.2	10.4	11.9	10.7	10.8
Kentucky	.....	.....	10.1	10.2	9.2	10.3	9.7	9.5	10.5	9.9	10.5
Missouri	9.1	10.1	11.5	10.8	9.2	9.9	9.9	9.7	12.9	10.1	12.1
Illinois	6.5	9.5	10.4	8.5	6.9	9.9	9.5	9.4	11	9.6	10.9
Indiana	7.3	8.9	10.5	10.3	7.7	9.3	9.7	10	12	9.8	11.3
Ohio	11.1	11.4	11.3	10.3	8.3	9.8	10.3	9.5	11.9	10.2	10.2
Michigan	10.2	10.3	11	10.9	7.2	9.9	9.8	9.2	10.7	9.3	10.4
Wisconsin	7.7	10.4	11.5	11	6.6	10.3	10	9.7	11	.....	11.3
Minnesota	10.5	10.4	11	11.4	7.9	10.5	10.1	9.7	10.2	.....	10.8
Iowa	9.1	9.8	10.2	9.6	7.9	10.3	9.7	9.9	11	10.4	10.2
Kansas	10.8	10.6	12	10.9	11.2	12	10.7	9.5	11.3	10.3	11.4
Nebraska	10	9.2	10.9	9.8	9.5	11.2	10.6	10.5	12.5	8.6	11.5
California	8.6	9.5	9.5	9.9	10	10.6	9.9	10.3	10.4	10.3	8

Table showing the condition of the crops, &c.—Continued.

STATES.	HAY.		PASTURES.—Average condition August 1.	TOBACCO.—Average condition August 1.	COTTON.—Average condition August 1.	SORGHUM.—Average condition August 1.	SUGAR CANE, (not sorghum.)—Average condition August 1.	APPLES.—Average condition August 1.	PEACHES.—Average condition August 1.	GRAPES.—Average condition August 1.	CRANBERRIES, Average condition August 1.
	Product of clover, compared with last year.	Average condition of clover when harvested.									
Maine	8.8	10.4	10.2	.....	.....	.....	.....	6.9	.....	8.4	10.5
New Hampshire	9.5	10	10.4	.....	.....	.....	.....	6.3	8.5	10.3	10
Vermont	10	10.5	11.2	.....	.....	.....	.....	9.5	.....	9	.....
Massachusetts	10.4	10.8	9.8	9.5	.....	.....	.....	5.2	10	10.3	10.5
Rhode Island	10	10	10.6	.....	.....	.....	.....	5.6	7.6	10.3	10
Connecticut	9.8	10	11.2	10	.....	10	.....	6.6	9.8	9.8	11
New York	10.6	9.4	11.9	8.7	.....	.....	.....	9	11.6	9.7	.....
New Jersey	9.4	9.6	10	.....	.....	10	.....	9.8	11.9	10.6	11.1
Pennsylvania	9.7	9.2	11.2	9.5	.....	9.2	.....	9.8	12	10.6	10
Delaware	9	9	10	.....	.....	10	.....	12	15	12	10
Maryland	9.2	10.1	9.8	10	.....	9.6	.....	10.5	11.9	10.9	.....
Virginia	10.7	10.6	9	8.6	9	8.2	.....	10	8.9	10.5	.....
North Carolina	11	10.5	9	9	9.3	8.8	.....	6.8	3.6	9.7	10
South Carolina	9	8.6	6.2	.....	7.3	7.2	.....	5.7	4.3	9.3	.....
Georgia	12.6	9.8	9.3	9	10.1	8.9	8.7	7.2	6.1	9.1	.....
Florida	.....	.....	10.2	10	10.5	.....	8.5	.....	8.6	10.4	.....
Alabama	11.6	11.2	9.6	9.6	9.8	9	10.5	5.8	5	8.8	.....
Mississippi	10	.....	10.5	9.2	10.7	9.3	12.3	8.1	5.9	8.3	.....
Louisiana	.....	.....	10.3	9.3	11.1	10.7	10	8.8	7	9.5	.....
Texas	.....	.....	11	10.2	10.8	10	10.5	9.5	8.8	9.6	.....
Arkansas	11	10.8	11.1	10.2	10.5	10.8	.....	9.9	6.9	9.4	.....
Tennessee	11.2	10.6	9.3	9.6	9.5	9.2	.....	7.9	6.5	9.2	.....
West Virginia	11.5	10.4	12.3	10.3	.....	10	.....	11.5	12	13	.....
Kentucky	10.9	10.5	10.6	9.1	10	9.4	.....	10	10.1	9.2	.....
Missouri	12.1	9.9	12.3	10	9.2	8.8	.....	11.3	6.3	9.2	.....
Illinois	11.9	9.2	11.6	9.6	9.7	7.9	.....	8.9	8.8	8	.....
Indiana	10.9	9.5	11.9	10.1	.....	10.2	.....	10.5	9.3	8.7	10.4
Ohio	10.4	8.5	11.9	9.7	.....	8.9	.....	9.1	12	9.1	.....
Michigan	11	8.8	12.2	9.8	.....	8.1	.....	10.4	12.3	10.1	10
Wisconsin	12.3	9.1	12	8.5	.....	6.9	.....	10.5	.....	10.1	10.9
Minnesota	12.1	10.5	10.3	9.2	.....	8.1	.....	12.1	.....	10.3	11.1
Iowa	11	9.1	11.7	9	.....	8.3	.....	10.3	6	9.8	10
Kansas	12.7	10.1	11.2	10	.....	10.1	.....	11	6.9	9.9	.....
Nebraska	.....	.....	11.5	9.5	.....	9.5	.....	12	10	9.8	.....
California	10.3	9.2	9.8	10.5	.....	.....	.....	10.2	7.8	10.2	.....

EXTRACTS FROM CORRESPONDENCE.

CORN.

Cumberland County, Me.—Weather backward for the season; corn backward, and in danger from frost.

Sagadahoc County, Me.—Corn very light, owing to cold and drought.

Kennebec County, Me.—Hundreds of acres of corn must be cut for fodder, the low temperature of the season preventing it from ripening; heavy frost on low grounds early in August.

Sullivan County, N. H.—Corn at least three weeks later than usual, owing to cold, changeable weather; some damage by frost on low lands on the night of August 8; but little rain during the last two months.

Caledonia County, Vt.—The indications are that the corn crop must be a failure; the season has been very cold.

Grand Isle County, Vt.—A very poor prospect for the corn crop, which has been much injured by cut-worms and by cold and wet weather.

Norfolk County, Mass.—Corn is late, and inferior in condition.

Kent County, R. I.—The severe gale of September 8 prostrated all the corn in the county, seriously damaging the grain of that which was not glazed, and also the fodder.

Jefferson County, N. Y.—Corn is backward, and an early frost would cut it down to less than half a crop.

Monroe County, N. Y.—Corn very backward; much of it scarcely set; nothing but a warm, late fall can save it.

Niagara County, N. Y.—There is a prospect of only half the average crop.

Queens County, N. Y.—The excessive wetness of the early part of the season, followed by the opposite extreme, has much diminished the prospect of the corn crop.

Tioga County, N. Y.—Corn is backward.

Burlington County, N. J.—Corn is much injured by severe drought.

Hunterdon County, N. J.—Corn is suffering from prolonged drought and excessive heat; old citizens say that it has been the dryest season for forty years; with the exception of a slight shower on the 6th of July, the drought has continued sixty-five days.

Ocean County, N. J.—Corn will fall at least twenty-five per cent. below the usual average, owing to drought.

Beaver County, Pa.—Corn is late and full of weeds, owing to wet weather; if frost keeps off till the first of October more than half the usual crop will be obtained.

Berks County, Pa.—No rain for the last six weeks, and the corn crop will be a short one.

Chester County, Pa.—The crop will be a short one.

Franklin County, Pa.—Corn is suffering somewhat from the very dry weather.

Indiana County, Pa.—The summer, taken as a whole, has been the coldest on record; the corn crop is almost a failure; the cold weather made it small and spindling, and now the drought is finishing it up.

Lancaster County, Pa.—The month of August was very dry; everything parched; corn a small crop; grasshoppers assisting drought in the work of destruction.

Luzerne County, Pa.—A cold summer; much of the corn backward in ripening.

York County, Pa.—The very dry weather of August has materially diminished the corn crop.

Baltimore County, Md.—Corn is parched by the drought.

Cecil County, Md.—The northern portion of the county has been favored with showers, and the corn promises an average crop; in the southern portion scarcely any rain has fallen since June, and on many farms corn will be a total failure; at present it is very dry in all parts of the county.

Prince George County, Md.—Corn was very promising until the 1st of August; after that harsh winds and cold weather, followed by weeks of very hot and dry weather, so changed the prospect that not half an average crop will be made; in some portions of the county there will not be a barrel per acre.

Bath County, Va.—The prospect of the corn crop has been much improved by a few days of rain in the last of August.

Clarke County, Va.—The product of corn has been lessened by the protracted drought which has prevailed throughout the valley of Virginia, though less severe in this county than any other.

Highland County, Va.—Corn is almost an entire failure.

Lancaster County, Va.—The corn crop has been cut short at least four-tenths by the excessive drought.

Loudoun County, Va.—Corn will not be half a crop.

Nelson County, Va.—Generally speaking, this is a fine section for corn, but the cold, wet spring, and the dry weather of July and August, have been unusually destructive; on some of the upland farms corn is an utter failure.

Madison County, Va.—Corn on hill lands and sand bars is dried up; grasshoppers, no longer able to subsist on pasture, are attacking corn fields.

Smyth County, Va.—Corn is nearly ruined by the long drought.

Spottsylvania County, Va.—Not a fourth of a crop can be realized.

Brooke County, West Va.—Corn will be nearly an average crop, though somewhat injured by drought.

Harrison County, West Va.—Corn will not be more than an average crop. Owing to wet weather in the early part of the season corn could not be properly worked. Late corn has been seriously injured by several days of very dry weather.

Kanawha County, West Va.—Corn is cut short considerably by drought, especially late planted.

Monongahela County, West Va.—A good crop.

Monroe County, West Va.—In one-half of the county there will be but half a crop, owing to drought. In the rest of the county there will probably be a good crop.

Morgan County, West Va.—Corn will not average half a crop.

Alamance County, N. C.—The corn crop is the worst ever known here.

Burke County, N. C.—Much of the upland corn is past recovery. On bottom lands there is still prospect of a good crop.

Beaufort County, N. C.—Corn is very promising; but that planted late is suffering from want of rain.

Caswell County, N. C.—Corn is much injured by drought.

Currituck County, N. C.—Notwithstanding some injury from the severe drought, corn promises a heavy yield.

Davidson County, N. C.—By reason of the drought there will probably be less than half a crop.

Chester County, S. C.—Corn is cut off by the intense heat.

Chattahoochee County, Ga.—The corn crop is tolerably good.

Jackson County, Ga.—A very poor crop. A continuous drought for three months.

Pulaski County, Ga.—Corn will average one-tenth more than last year.

Greene County, Ala.—Early corn was seriously injured by drought in July.

Coahoma County, Miss.—In many parts of the county corn has been been much injured by drought.

Lee County, Miss.—The corn crop is excellent.

Yalabusha County, Miss.—Notwithstanding early planted corn made but half a crop, the late planted did well, and the total average will exhibit a very good crop.

Winn Parish, La.—Corn is unusually good.

Caldwell Parish, La.—Corn is good; a larger acreage than usual.

Fannin County, Texas.—Corn is now matured; the crop is larger than ever before.

Forsyth County, Tenn.—The long-continued drought has seriously damaged corn, except on bottoms, where there is a fair average.

Greene County, Tenn.—The season throughout has been very unfavorable for corn—too wet until June, and too dry since that time. The crop is ruined beyond hope. There is promise of an abundant mast, which must serve the purpose of fattening hogs.

Knox County, Tenn.—Corn parched nearly dry; not enough for home consumption.

Marion County, Tenn.—Our correspondent writes: "The corn crop is nearly a failure. Within a few days I have been up the Tennessee River one hundred miles. Corn, off the river bottoms, will give ten bushels per acre. I saw thousands of acres that will not return the seed."

Pulaski County, Ky.—On uplands corn has been cut very short by drought.

Scott County, Ky.—Corn has been diminished at least one-tenth by drought.

Trimble County, Ky.—The crop will fall short one-quarter to one-half.

Athens County, Ohio.—Suffering from severe drought; not more than half a crop is anticipated; poor corn, shriveled in the ear.

Medina County, Ohio.—Corn is doing finely, and it is hoped there will be an average yield.

Montgomery County, Ohio.—The crop will be cut short twenty-five per cent.

Montcalm County, Mich.—Corn indicates two-thirds of a crop.

Ottawa County, Mich.—Corn is very late and poor. August has proved as wet as the two previous months. All hoed crops are full of grass and weeds.

Van Buren County, Mich.—Corn has been killed on low grounds by excess of water. There will not be more than two-thirds of a crop of good corn.

Bartholomew County, Ind.—Corn was injured to some extent by dry weather in the first part of August, but will make an average crop.

Elkhart County, Ind.—Corn was never before so nearly a failure. Four-fifths of the crop drowned out and abandoned.

Franklin County, Ind.—The corn crop is very poor, chiefly in consequence of drought following extremely wet weather; partly, as it is believed, to a white grub preying on the roots. There seems to be a singular deficiency of root.

Lee County, Ill.—A poor prospect for corn.

Mercer County, Ill.—Corn is late and injured by wet.

Sangamon County, Ill.—Corn is doing well, and it is hoped that there will be nearly an average crop.

Morgan County, Ill.—It is believed that the crop will considerably exceed that of last year.

Williamson County, Ill.—The wet spring, late planting, and subsequent drought, together with the weeds which had obtained secure footing during the continued rains, will diminish the corn crop at least one-fifth below that of last year.

Green County, Wis.—The prospect for corn has improved. If frost holds off till the first of October there will be an average crop.

Richland County, Wis.—Corn is very backward and small.

Walworth County, Wis.—Corn will not exceed sixty per cent. of last year's yield.

Des Moines County, Iowa.—Corn will not make one-fourth of a crop.

Johnson County, Iowa.—Corn is maturing well.

Harrison County, Iowa.—Corn is more heavily loaded than ever known in this county. Almost every stalk has two ears. If the frost holds off, shall expect a large crop.

Lee County, Iowa.—Thousands of acres of corn are not worth harvesting, in consequence of the wet weather.

Franklin County, Mo.—Corn is twenty-five per cent. better than in 1868.

Johnson County, Mo.—An immense crop, except in low places where it was too wet to be worked in the first part of the season.

St. Louis County, Mo.—Corn is ten days late, but if frost holds off till the last week of September there will be a full crop.

Arkansas County, Ark.—Corn has been seriously damaged by overflow and subsequent drought, but enough will be saved to supply the county.

Columbia County, Ark.—The corn crop is safe, and better than an average.

Independence County, Ark.—Six weeks of drought and extreme heat have reduced the crop fifty per cent. below an average.

Atchison County, Kan.—Corn has done well since the departure of the grasshoppers.

Cuming County, Neb.—Corn is an average crop. The season has been very wet.

Merrick County, Neb.—A wet season. Corn on low grounds is late; some fields have been abandoned to weeds.

COTTON.

Beaufort County, N. C.—Much of the cotton having been planted late, is not well bolled, and is now shedding to some extent.

Duplin County, N. C.—August has been unfavorable for cotton. The cold nights in the early part of the month checked it and caused the plant to shed its forms rapidly, and subsequent drought has also injured the growth. Rust has appeared within a few days and is spreading fast.

Edgecombe County, N. C.—Damaged by drought.

Harnett County, N. C.—A very bad stand of cotton, but showing better condition than expected in the spring.

Sampson County, N. C.—Suffering badly from drought.

Chester County, S. C.—The intense heat has had a most disastrous effect on crops, and has caused cotton to shed the young bolls and forms.

Orangeburg County, S. C.—All crops have suffered from drought. A large amount of commercial fertilizers has been used on cotton, which has done better in consequence.

Richland County, S. C.—The upland cotton has been much injured by

the late drought, but that on the river swamp and low lands is now in splendid condition, and can be injured only by a wet fall.

Union County, S. C.—The drought has damaged cotton very much. August 29th a rain occurred, appearing to be general through this region.

Brooks County, Ga.—Cotton badly damaged and cut off by caterpillars, boll worms, and rust. It has shed its forms to an unusual extent, owing to rains about the first of August.

Butts County, Ga.—The extremes which have characterized the weather of this year have affected cotton unfavorably, and the dry, hot weather which has prevailed of late has caused the young bolls and forms to drop off.

Carroll County, Ga.—Cotton is seriously injured by rust.

Columbia County, Ga.—Since the July report cotton has fallen off at least three-tenths, in consequence of the dry, hot weather.

Glynn County, Ga.—Caterpillars appeared in cotton fields about the 15th of August. On the low lands corn has suffered; but on high, dry lands not much injury has been done.

Taylor County, Ga.—Cotton will not be more than half a crop. The dry and extremely hot weather has caused it to open much faster than usual, and the crop in this county will be ready for market at least a month earlier than usual.

Leon County, Fla.—Cotton is much injured by repeated rains in July, and by rust. Caterpillars have appeared in force on several plantations, and are likely to prove very destructive to cotton throughout the county. Yet the damage from this cause will be less than from those first mentioned.

Bradford County, Fla.—The recent fine prospect of cotton is likely to be ruined by the caterpillar.

Clarke County, Ala.—The weather is very hot and injurious to cotton picking. Fertilized cotton is rusting, though much earlier in maturing, and giving an increase of two hundred per cent. in yield on old lands. Caterpillars, so far, have done little damage.

Macon County, Ala.—The cotton prospect has greatly diminished since August. Caterpillars made their appearance about the middle of July. They have done great damage, and are rapidly increasing.

Dallas County, Ala.—Cotton has deteriorated twenty per cent. during the last half of August. Wide-spread injury from boll worm and shedding of forms.

Greene County, Ala.—Cotton is doing very well. The worm has not yet appeared, and, unless it does so soon, the yield will be very large.

Bolivar County, Miss.—The long drought has caused cotton to shed to a large extent.

Coahoma County, Miss.—Cotton on sandy lands has suffered from drought, but on the stiff, heavy lands promises a splendid yield.

Lee County, Miss.—The cotton crop will be fifty per cent. greater than in 1868. A short drought in August caused some shedding of forms, but the prospect is again encouraging.

Pike County, Miss.—The fields look well, but we are having too much rain; and as cotton is two or three weeks late, it will be badly injured by frost, unless we have a late fall.

Warren County, Miss.—Cotton picking commenced August 20.

Yalabusha County, Miss.—The season is all that could be desired, and the prospect is very favorable.

Caldwell Parish, La.—The cotton crop is much better than in 1868. Though somewhat impaired by recent dry weather, there will be as

much as can be gathered. Laborers have been working better than last year, "but," says the correspondent, "we have not one-fourth the number needed." Fertilizers and improved seed have been used with success. About one bale of cotton per acre will be gathered.

Carroll Parish, La.—The army worm made its first appearance in this county August 9, ten days earlier than last year. It is hoped, however, that, as then, no material injury will result.

St. Helena Parish, La.—It is feared that the hitherto excellent prospect will be seriously injured by the current excess of rain.

Colorado County, Texas.—The yield will considerably exceed that of last year. The recent overflow of the Colorado River destroyed about five thousand bales in this county, and the loss throughout the river valley will probably be in similar proportion. Picking is going on.

Lavaca County, Texas.—Cotton has been hitherto very promising, but the worms, appearing about the middle of August, have stripped the fields, and only one-third of a crop is expected.

Smith County, Texas.—Cotton has suffered greatly of late for want of rain. In some instances lately planting there has been almost an entire failure.

Giles County, Tenn.—There will not be half a crop of cotton in this county.

Arkansas County, Ark.—The cotton crop will be reduced twenty per cent. below that of last year by overflow and subsequent drought.

Independence County, Ark.—Cotton has been greatly damaged by drought and extreme heat.

WHEAT.

Grand Isle County, Vt.—The wheat crop is heavy and of good quality.

Jefferson County, N. Y.—Late sown spring wheat has been injured to some extent by the midge, while winter wheat and early sown spring wheat have entirely escaped the insect.

Sussex County, N. J.—Wheat has been harvested in excellent condition.

Berks County, Pa.—The wheat crop is heavy, and of the best quality.

Franklin County, Pa.—Wheat was harvested in fine condition; the best crop cut for several years.

Baltimore County, Md.—Wheat has been harvested in excellent condition.

Cecil County, Md.—The wheat crop will average low.

Clarke County, Va.—A very good crop and of good quality.

Spottsylvania County, Va.—The yield of wheat far better than last year.

Harrison County, West Va.—Wheat was harvested in tolerable condition and appears to be turning out well.

Monongahela County, West Va.—Best crop for ten years.

Monroe County, West Va.—Wheat has been harvested in better condition than for years.

Putnam County, West Va.—The yield of wheat greatly disappointed expectation, and it was damaged after cutting by continuous wet weather.

Forsyth County, N. C.—The wheat crop is excellent.

Rockingham County, N. C.—The correspondent writes: "The wheat crop is a good one and is all that will save us from extreme suffering. We have not had such a drought since 1845."

Hawkins County, Tenn.—After threshing, the smooth wheats are gene-

rally found shrunken and full of smut. The bearded are generally good and free from smut.

Robertson County, Tenn.—Unusually dry weather since July 10th. Wheat has been housed and stacked in superior condition.

Rutherford County, Tenn.—Wheat has been injured twenty per cent. in condition by smut and bad handling; more smut than for many years. The average yield per acre was about seven and a half bushels.

Lincoln County, Ky.—Wheat generally threshed in good condition.

Trimble County, Ky.—The wheat crop in this county is unusually fine.

Athens County, Ohio.—Wheat is rusted in many places, but there is more than an average yield.

Geauga County, Ohio.—The best crop for many years.

Miami County, Ohio.—A larger amount per acre has been harvested than ever before. The quality is excellent. Price, $1 15 to $1 40.

Logan County, Ohio.—The area sown was thirty per cent. above that of last harvest. The product was of superior quality.

Bartholomew County, Ind.—The crop of wheat is stated at double the amount ever harvested before. The quality excellent.

Kosciusko County, Ind.—The greatest yield known for many years, but the condition when harvested was below an average in consequence of wet weather.

Franklin County, Ind.—Wheat will average twenty bushels per acre, the quality very excellent. A large amount is being sold, generally at $1 10 to $1 20.

Warren County, Ind.—Winter wheat will probably average seventeen bushels per acre, which is considered a good yield in view of the wet season. Spring wheat is worth nothing.

Morgan County, Ill.—Spring wheat is very poor. Taken as a whole the wheat crop will average perhaps about the same as last year.

Mercer County, Ill.—Wheat light and wet.

Sangamon County, Ill.—Spring wheat being almost an entire failure will reduce the average of the entire crop.

Williamson County, Ill.—The wheat crop is better than for several years.

Knox County, Ill.—Much wheat spoiled in the shock.

Green Lake County, Wis.—Wheat was in good condition when harvested, but is going into the stack in quite too moist a state.

Portage County, Wis.—Wheat was harvested in good condition.

Carver County, Minn.—The wheat crop in this county is very abundant; the best for several years.

Stearns County, Minn.—Wheat is not wholly harvested, and the harvest is being retarded by wet weather. But little damage has yet been done.

Wabasha County, Minn.—Wheat is a large crop. Blight, however, has done some injury.

Des Moines County, Iowa.—But little of the spring wheat will be fit for flour. Fall wheat is damaged by sprouting.

Johnson County, Iowa.—Wheat was excellent when harvested, but driving rains have injured it in shock and stack, causing great loss.

Lee County, Iowa.—Large quantities rotted in the stack.

Franklin County, Mo.—The wheat crop is much superior to that of 1868.

Johnson County, Mo.—The acreage of wheat was far greater than last year, but the average per acre was smaller, and the quality not as good.

Montgomery County, Ark.—The best crop of wheat that has been had for fifteen years.

St Francis County, Ark.—The wheat crop is exceedingly light.
Riley County, Kans.—An unusually large acreage and heavy yield.
Dakota County, Neb.—An excellent crop, but injured in stacks by the wet weather.
Kane County, Utah.—Wheat is almost a failure, in consequence of grasshoppers attacking it while in the milk.
Santa Clara County, California.—Half of the wheat crop is shrunken and of inferior quality. Most of the damage was caused by rust.
Marion County, Oregon.—A severe drought. All early sown grain, well planted, is good beyond expectation, while late sown is very poor. "This," says the correspondent, "may teach our people to plow deep, pulverize well, and sow grain at the proper time." Wheat firm at 70 cents per 60 pounds.

OATS.

Coos County, N. H.—A heavy yield.
Grand Isle County, Vt.—A good crop.
Sussex County, N. J.—The crop is excellent in quality.
Indiana County, Pa.—A large crop and of excellent quality.
Baltimore County, Md.—Oats were harvested in excellent condition.
King George County, Va.—Not a full crop, and the grain very light in weight.
Harrison County, Va.—In quantity and quality the crop was never better.
Athens County, O.—The crop is excellent, especially early oats.
Geauga County, O.—An unusually excellent crop.
Montcalm County, Mich.—Oats are in unusually bad condition. About one-half of the crop damaged by being stacked in a wet state.
Lee County, Ill.—A large yield. Large quantities not yet stacked in consequence of wet weather.
Knox County, Ill.—A very heavy yield, but much of it damaged before it was stacked.
Williamson County, Ill.—An excellent crop both in quantity and quality.
Moniteau County, Mo.—The finest crop of oats ever harvested in this county.
Riley County, Kans.—An increased acreage and a heavy yield.
Cuming County, Neb.—Oats have been harvested in excellent condition.

POTATOES.

Norfolk County, Mass.—Potatoes promise well, but there are indications of rot.
Jefferson County, N. Y.—Potatoes look healthy and a large crop may be expected.
Niagara County, N. Y.—A very large yield, but rotting badly.
Ontario County, N. Y.—A good crop. There is some rot in wet grounds.
Burlington County, N. J.—Potatoes are of very superior quality.
Adams County, Pa.—Potatoes much injured by the drought.
Beaver County, Pa.—An average crop.
Berks County, Pa.—Early planted potatoes are large and free from rot.
Cambria County, Pa.—Potatoes are rotting.
Chester County, Pa.—Early potatoes are a good crop and in excellent condition. Late planted potatoes must yield a short crop.

Indiana County, Pa.—The potato crop has been diminished by the drought, but is of excellent quality.

Harford County, Md.—Late potatoes greatly injured by drought.

Montgomery County, Md.—The crop is cut short by drought.

Queen Anne County, Md.—Drought and potato bugs have almost destroyed the Irish potato crop.

Clarke County, Va.—The product has been diminished by drought.

King George County, Va.—Potatoes are very unpromising.

Louisa County, Va.—Potatoes are an utter failure.

Kanawha County, West Va.—Potatoes will be a short crop.

Preston County, West Va.—Potatoes are rotting badly.

Athens County, O.—Early potatoes are good. Late potatoes a very light crop.

Medina County, O.—Potatoes are unusually excellent.

Ottawa County, Mich.—Rot is prevailing among potatoes.

Warren County, Ind.—The prospect is that there will be a large crop of potatoes. The bug, heretofore so destructive, has not yet appeared.

Knox County, Ill.—Potatoes would have given a larger crop than for many years had it not been for rot.

Moultrie County, Ill.—The potato crop is unusually good.

Green Lake County, Wis.—A splendid crop; the best for years.

Wabasha County, Minn.—Complaint is made of potato rot. The weather has been very wet.

Johnson County, Iowa.—A large yield, but showing indications of rot.

Muscatine County, Iowa.—Potatoes are badly injured by rot.

Johnson County, Mo.—Potatoes are very abundant.

Mercer County, Mo.—Potatoes are excellent.

Riley County, Kan.—A large acreage and heavy yield.

Cuming County, Neb.—The best potato crop that has been had for ten years.

HAY.

Sagadahoc County, Me.—An average crop and of unusually good quality.

Orleans County, Vt.—Much of the first crop was light, but the wet weather has caused a large crop of rowen on meadows; on the whole, about the same quantity of hay as last year.

Norfolk County, Mass.—The crop is somewhat below the average in quantity, but is of superior quality.

Burlington County, N. J.—Pastures are very much injured by drought.

Gloucester County, N. J.—Pastures are almost entirely burned up by the drought.

Hunterdon County, N. J.—Pasturage has been wholly ruined by the long drought and hot weather.

Beaver County, Pa.—July being very wet, little grass was cut until August; timothy was put up in very good order; clover was too ripe, or, if cut at the right time, was spoiled by rain.

Berks County, Pa.—Pasture scarce on account of drought and grasshoppers, and many farmers are feeding hay to their cattle.

Indiana County, Pa.—The hay crop has been secured in good order, and is excellent in quality.

Lancaster County, Pa.—Scarcely any clover seed has been made, on account of the ravages of grasshoppers.

Baltimore County, Md.—The hay crop is in amount about one-tenth below the average, and is of excellent quality.

Montgomery County, Md.—Pastures are very short, and many streams dry or very low.

Prince George County, Md.—Pastures are burned up and very bare.

Loudoun County, Va.—The pastures are badly parched, and the young grass burned out or eaten by grasshoppers.

Harrison County, West Va.—The product of hay was probably never so great in this section of the country.

Monongahela County, West Va.—An abundant crop of grass.

Pickens County, Ga.—The hay crop will be short; exceedingly hot and dry weather during August.

Rutherford County, Tenn.—Clover, which usually affords a good fall crop of hay, is already as dry as it would ordinarily be ten days after frost.

Robertson County, Tenn.—Owing to the prolonged dry weather, hay has been put up in extra condition.

Knox County, Ill.—The hay crop was unusually heavy, but much of it was spoiled by rains after being cut.

McLeod County, Minn.—The crop of hay in this county is limited only by the ability of the farmers to cut it; the native grasses are superior to timothy and clover.

Johnson County, Iowa.—Hay and pasture are excellent.

Marshall County, Iowa.—Timothy hay, generally, is spoiled by rains.

Benton County, Mo.—Hay of all kinds except Hungarian is very good, timothy is unusually heavy; a great deal of prairie grass is cut, quite nutritious for stock.

Columbia County, Oregon.—Our hay crop of June grasses falls short at least three-tenths, while the wild or swamp grass yields one-fifth more than usual; this wild grass, consisting of wild red-top and blue-joint, and wild pea-vine, when cut at the proper time, is considered, by some dairymen, equal to timothy; it yields about three tons per acre.

FRUIT.

Kent County, R. I.—The gale of September 8 shook off all the apples, uprooted trees, &c.

Niagara County, N. Y.—Peaches are excellent; a large crop of fruit, ripening well.

Ontario County, N. Y.—The peach trees are heavily loaded.

Hunterdon County, N. J.—The peach crop is nearly a failure.

Allegheny County, Pa.—Apples will not yield a full crop, but are of good quality; grapes are rotting badly.

Berks County, Pa.—A larger number of apples than usual, the fruit being of unusual size and extra quality; peaches are unusually abundant.

Franklin County, Pa.—With the exception of apples, fruit was never so abundant.

Lehigh County, Pa.—There was a fair prospect for a large crop of peaches, but the most of them have been shrivelled by the drought and do not ripen.

Baltimore County, Md.—Fruit of all kinds very abundant.

Louisa County, Va.—Fruit is all falling off; even the forest and yard trees are dying from drought.

Preston County, West Va.—Fruit of all kinds was never more abundant.

Monongahela County, West Va.—A large crop of apples and peaches.

Campbell County, Ga.—Apples and peaches were injured this year by worms to a greater extent than ever before.

Pickens County, Ga.—The fruit crop almost a failure in most parts of the country.

Jefferson County, Miss.—Apples and pears are plentiful; peaches very scarce and wormy.

Putnam County, Fla.—The orange crop of this year will be far above the average, notwithstanding the severe freeze of last Christmas.

Butler County, Ohio.—A plentiful crop of peaches.

Lorain County, Ohio.—Catawba grapes are rotting badly; apples are very wormy and are falling off.

Portage County, Ohio.—Apples nearly all dropped off in July; the balance very wormy.

Calhoun County, Mich.—Grapes set very full, but turned black and dropped off; Catawbas badly, on old vines much more than on new. Delawares and Hartford Prolifics were not affected.

Hancock County, Ill.—The grape crop almost a failure, on account of excessive rains; the Catawba suffers most.

Green Lake County, Wis.—Apples are very fine, and a full crop. Grapes in general are doing well; the Clinton is rotting to some extent.

Goodhue County, Minn.—Many young orchards are bearing well. The prospect for successful apple culture is more encouraging than heretofore.

Benton County, Mo.—The peach crop is a failure in this section.

Franklin County, Mo.—Grapes, apples, and peaches are very fine.

St. Louis County, Mo.—Grapes have rotted badly, in consequence of the unusually wet summer; two-thirds of a crop, and of inferior quality.

Crawford County, Ark.—The apple crop is ruined by the intense heat, and is rotting. Grapes are rotting badly, and the peach crop is very poor.

Jackson County, Kan.—All fruit trees, old enough to bear, are doing well; pears in particular. Grapes have done well.

Douglas County, Col.—Apples, pears, peaches, and grapes are all too young to bear, but are thrifty, and give promise of future success.

Sacramento County, Cal.—A hot north wind on the last Sunday in June burned the fruit crop badly; grapes suffered about one-third.

Tuolumne County, Cal.—Grapes have been much injured by mildew, supposed to be occasioned by late rains. Peaches have been injured by curled leaf and apples by overbearing last year.

HOGS.

Georgetown County, S. C.—Cholera among hogs is very destructive.

Macon County, Ga.—A disease has appeared among hogs, proving fatal in many cases; its nature has not been definitely ascertained.

Newton County, Ga.—A few cases of hog cholera.

Warren County, Miss.—A disease among the hogs in the upper part of the county; it is fatal to nine-tenths of those attacked.

Kenton County, Ky.—Nearly all the stock hogs in this county will be sold this year without feeding.

Lincoln County, Ky.—Hog cholera has prevailed to a considerable extent.

Franklin County, Ind.—The prospect now is that hogs will be sent to market badly fattened, and in less number than had been anticipated. Stock hogs sell for eight cents gross, with little demand.

Lee County, Iowa.—Cholera among hogs; more fatal than usual.

Pike County, Mo.—Only a very few lots of hogs will be fatted in this county. Corn selling at one dollar per bushel.

Cross County, Ark.—Cholera among hogs has reduced the stock considerably.

OTHER CROPS.

Sagadahoc County, Me.—The grain crop, with the exception of corn, is unusually good.

Addison County, Vt.—Crops unusually excellent, with the exception of corn and apples.

Orleans County, Vt.—A very large growth of all kinds of grain, excepting corn.

Erie County, N. Y.—Crops at least ten days later than usual. The season has been cold and wet beyond the experience of many years.

Jefferson County, N. Y.—All grain crops, excepting corn, harvested in good condition.

Morris County, N. J.—Much injury from drought.

Sussex County, N. J.—Buckwheat is much injured by drought. Rye is excellent in quality.

Adams County, Pa.—The late crops are injured considerably by the drought.

Allegheny County, Pa.—Better crops than for twenty years past.

Bucks County, Pa.—Severe drought. The young buckwheat is parched up in many places.

Lehigh County, Pa.—All growing vegetables suffer greatly from the drought.

Indiana County, Pa.—The unusually cold summer has affected some crops quite injuriously. The weather for the past ten days has been hot, and has almost completed the ruin of the buckwheat, which has turned brown and has not yet filled.

Allegany County, Md.—But little rain has fallen during August, and crops have suffered.

Baltimore County, Md.—Rye has been harvested in excellent condition.

Howard County, Md.—Crops in general will average low. The drought has been one of the most afflicting ever known. For months there have been but one or two rains, and these have produced very little effect on vegetation. The ground remains too hard to plow for wheat; seed time is fast approaching, and the prospect for an average acreage is very poor.

Montgomery County, Md.—Tobacco is cut short by drought, and some will never be housed.

Prince George County, Md.—Tobacco is much injured by the hot, dry weather.

Bedford County, Va.—All crops except wheat have been greatly injured by the long drought.

Chesterfield County, Va.—The correspondent writes that "the long continued drought has reduced us to the verge of famine," and that much suffering among the citizens is likely to ensue. The drought commenced the first of June. August 30 a rain wet the land nearly two inches.

Gloucester County, Va.—No stand of turnips nor of late vegetables.

Amelia County, Va.—Our staple crops are entirely destroyed. Throughout this southern portion of the State, so far as heard from, there has been a drought of over nine weeks' duration. Gardens burned up; tobacco, generally speaking, but little larger than when planted. Great suffering must ensue next year for want of food supplies.

King George County, Va.—Rye not a full crop and very light in weight.

Vegetables generally, excepting potatoes, matured before the severity of the drought affected them.

Louisa County, Va.—The prospect a most gloomy one. Tobacco hardly visible at the distance of a hundred yards.

Morgan County, West Va.—The buckwheat crop will be one-third less than an average.

Monongahela County, West Va.—All crops are the most abundant known for fifteen years.

Alamance County, N. C.—Crops have suffered greatly by the drought.

Caswell County, N. C.—Throughout this and the adjoining counties the drought has seriously injured the tobacco crop.

Chatham County, N. C.—Crops are almost entirely destroyed by drought.

Georgetown County, S. C.—The drought still continues. All the smaller water courses perfectly dry, and rivers very low. Gardens are burned up, and all field crops damaged, excepting rice, which has improved and promises an average of twenty-five to twenty-eight bushels per acre. The average before the war was thirty-five to forty bushels.

Heard County, Ga.—Crops are decidedly better in this county than they were last year.

Liberty County, Ga.—There is a good acreage of rice, and its condition is unusually excellent. On the seaboard thousands of watermelons were raised this year, and from them a fine sirup was made.

Glynn County, Ga.—The rice crop is more than an average. Harvest now going on.

Pulaski County, Ga.—Sugar cane is doing well.

White County, Ga.—Crops are suffering severely from drought. Much discouragement exists.

Volusia County, Fla.—The year has been remarkable for drought, especially on the Atlantic side. All crops have suffered severely.

Montgomery County, Tenn.—So far the prospect for tobacco is a poor one.

Robertson County, Tenn.—Tobacco will not average more than half a crop in this county.

Trimble County, Ky.—Tobacco never looked better, notwithstanding the dry weather.

Ottawa County, Mich.—Farm crops and garden vegetables have suffered from long continued wet weather.

Johnson County, Iowa.—An excellent crop of rye and barley, but injured after harvesting by driving rains.

Riley County, Kansas.—An increased acreage of rye and barley and a heavy yield. Seasonable rains in August have been favorable to all growing crops.

Yankton County, Dakota.—Crops of all kinds are better than were ever known before.

Santa Clara County, California.—The barley crop is an average and of excellent quality.

NOTES ON THE AGRICULTURE OF NORTHERN COLORADO.

SIR: Having been attached to Dr. F. V. Hayden's United States Geological Expedition to Colorado and New Mexico, it was made a part of my duty to collect notes in regard to the agriculture of the country through which we should pass.

The mountainous districts being the chief points of attraction to the expedition, necessarily restricted my personal observations to the small portions of arable land we traversed in moving from point to point where entrances to the mountains could be obtained. Yet these slight opportunities have been sufficient to convince me that Colorado is far from being destitute of interest in an agricultural point of view.

All who are to the least extent acquainted with this country are aware that from the summit of the eastern range of mountains there is a continuous descending slope toward the Missouri River. This descent decreases from the precipitous slope of the immediate mountain side until it is lost in the apparent level of the vast plains.

As might readily be imagined from this configuration, the streams which take their rise in the mountains east of the great divide run nearly an east course.

The first debris and also the heavier portions brought down from the mountains are, as a matter of course, deposited near the base. Hence, as we recede from this point eastward, this local drift of boulders, pebbles, and coarse sand decreases in the size of its particles, as well as in thickness of deposit. Over this is deposited the alluvial stratum forming the soil, which, close to the base of the mountain, covers very thinly the boulder deposit, but increases in thickness toward the east. The creeks rushing down more rapidly near the mountains cut deeper furrows through this deposit near the mountain base than at a distance from it. And in consequence of this, the terraces or ridges which lie between the streams are higher above the water near the mountain, and decrease as they recede from it. This fact, in other parts of our country, might have very little bearing upon agriculture, but here it becomes a consideration of vital moment to the farmer, who must irrigate his land, or receive but little return for his labor.

The arable portion of the Territory is naturally divided into three quite distinct and separate districts, which may be more advantageously considered separately.

First. That portion lying east of the Rocky Mountains and north of the divide between the waters of the South Platte and the waters of the Arkansas, embracing a distance north and south of about one hundred and thirty miles—estimating from the north side of Cache à Poudre Valley, as the northern limit.

Second. The second district includes that part watered by the Arkansas and its tributaries; bounded on the north by the divide before mentioned, and on the southwest by the Raton Mountains.

Third. The San Luis Park, a complete system within itself, the waters of which find an outlet through the Rio Grande, or are lost in Sawatch Lake.

The three great districts corresponding to the three streams through which their waters find an outlet to the Gulf of Mexico. As might be supposed from this prominent fact, we cannot investigate the agricultural capacity of this portion of the Territory by such arbitrary lines as those established by the surveyor; but must, if we expect to understand the country, follow the natural arrangement of streams and valleys. This applies not only to the large districts, but is found, also, to be true when we descend to the more minute divisions of the separate districts.

THE DENVER DISTRICT.

The first, which we will denominate the "Denver district," is composed of a series of valleys, each watered by its own stream, and the

ridges which lie between them. This district is naturally divided into two sections: the first including the territory lying north of the South Platte, and between it and the mountains; the other included between the Platte and the divide.*

The first section is divided into some ten or twelve valleys, which run eastward until uniting with each other, or lost in the valley of the Platte. The latter stream, leaving the mountains some twenty miles southwest of Denver, after bowing out a short distance on the plains, runs northeast, slightly diverging from a parallel with the east range, for a distance of about eighty miles, where it is joined by the Cache à Poudre, and then turns eastward.

The portion of country north of the Cache à Poudre valley, although affording good pasturage for cattle and sheep, is not generally in the estimate of arable land, on account of its lack of irrigating facilities. Yet the bottoms which flank Box Elder Creek will afford room for several good farms and ranches, as headquarters for herds and herders.

We begin, then, at the northern limit of our section, with the Cache à Poudre, some seventy or eighty miles north of Denver, and descending south describe the valleys according to the streams which water them. This stream, from the point where it issues from the mountains, near La Porte, to its junction with the Platte, a distance of thirty or thirty-five miles, runs through a fertile valley of moderate width; it is some twenty-five yards in width on an average, affording an abundant supply of water, and sufficient descent to irrigate the bottoms and terraces or ridges which border it.

The next stream is the Big Thompson, which runs eastward nearly thirty miles, and also empties into the South Platte. The valley it waters is similar to that of the Cache à Poudre, and the volume of water about the same as the latter.

The third is the Little Thompson, a tributary of the Big Thompson but, as this creek is liable to fail in its supply of water during the summer, it cannot be relied upon for irrigation, though its valley affords excellent pasturage for stock, and will furnish a good range for cattle and sheep when the neighboring valleys become thickly settled and fenced.

Moving south, the next stream we cross is the St. Vrain, nearly equal in its volume of water to the Big Thompson. This runs through a pretty valley to its junction with the Platte, a distance of twenty-five miles.

Left Hand Creek, a tributary of St. Vrain, affords a small valley about eleven miles long.

Boulder Creek, which is the next, issuing from the mountains at Boulder City, after running somewhat northeast for eighteen miles, unites with the St. Vrain. Some of the finest farming and grazing lands north of Denver are found along this stream. At its debouchure from the mountain gorge are gathered heavy deposits of boulders and pebbles, from which, doubtless, the creek and city have received their names. A narrow growth of willow and cottonwood lines its banks. Its bottom, at points, widens out to considerable extent.

Moving southward, with the snow-clad peaks looming up to our right, we next arrive at South Boulder, which, leaving the mountains near Marshall's coal mine, runs a circuit of about eight miles and unites with the Boulder. Here is found the connecting link which unites the agriculture of the plains with the mining of the mountains.

* The divide is a broad ridge rising two thousand feet above the plain, which starting from the foot of the mountain, extends eastward.

Standing on the grass-covered bluff overlooking this little limpid stream, the eye, as it shoots out its glance north and east over the plains, wearies itself in attempting to mark the boundary of vision. The valleys over which we have passed, like dim lines, are traced across the broad expanse. Rounded ridges, level terraces, straight foot-hills with green escarpments and isolated buttes, fill up the outline. Sinking into the bluff we pass alternate strata of iron ore and coal. Here they quietly rest, rich, thick, and abundant—the fuel and the metal; the one to convert the other into instruments to till the soil, to harvest the grain, to garner it, to convert it into food, to make the highway to carry it to the miners of the mountains and the snow-bound inhabitants of the north. Such a combination is seldom seen.

Descending from our elevated position and continuing our course southward, after passing some minor streams we reach Coal Creek, also a tributary of Boulder. This is not an unfailing stream, and hence its valley cannot be depended upon for farming purposes.

Clear Creek, which passes within four miles of Denver, gives a valley of eighteen miles before it empties into the South Platte. It is already lined with well-cultivated farms and comfortable ranches, from which the Denver market is in part supplied with grain, vegetables, and meat.

Finally we reach Bear Creek, the last of the series, which, after a short run of ten miles from the mountains, pours its waters into the South Platte.

A short distance below this we arrive at the apex of the triangle formed by the mountains on one side, the South Platte on the other, and the Cache à Poudre as the base; containing, including the Platte Valley, about eight hundred thousand acres of land. Of this amount about one-third is bottom land, the remainder forming the ridges and terraces which lie between the valleys. The greater portion of this entire triangular section is susceptible of cultivation, and the remainder is well adapted to grazing purposes.

The bottoms along these creeks vary from one-half a mile to four miles in width, giving perhaps an average width of two or two and a half miles. Between these valleys are the more elevated portions forming sometimes rounded ridges, at others regular terraces or rolling prairies, but seldom rising to abrupt hills. They vary in elevation above the creeks from a few feet out on the plains to from thirty to fifty near the mountains, and are generally in reach of water sufficient for irrigation.

SOIL.

The soil throughout this section presents great uniformity in regard to quality, being chiefly a light loam, in which the silicious and micaceous ingredients predominate. To form a correct idea of this soil it must be remembered that the streams, in passing from the snow-clad crests of the vast range of mountains to the broad prairies of the plains, sweep over the upheaved margins of the entire geological series of this region; and as they vanish down the mountain gorges and along the rocky cañons, they bear away with them the debris from all the water they touch, from the primary granite to the most recent tertiary representative, mingling and scattering it over the plains they cross. The atmospheric currents, driving to and fro the lighter dry particles, assist in the mingling process. This commingling of the various mineral elements adapts the soil to the growth of a large variety of

plants. It varies considerably in depth; near the foot of the mountains, where the water travels more rapidly, often merely covering the boulders and gravel; further down the valleys it gradually increases in depth. While the bottoms contain a greater proportion of decayed vegetable matter, the ridges and terraces are equally rich in the primary elements, and by irrigation will for cereals become equally productive; and as vegetation ripens upon them eight or ten days earlier than in the bottoms have this advantage.

CLIMATE.

This strip of country, lying longitudinally north and south, necessarily varies in temperature as the points recede from each other; and as we descend from the higher portions along the mountain slope to the valleys of the plains, the isothermal lines bend considerably northward. The average temperature may be compared with that along the eastern slope of the Alleghanies in Pennsylvania, with which it very nearly corresponds.

The altitude reaching from three to seven thousand feet above the level of the sea, and the line of perpetual snow not far distant, the atmosphere is salubrious and remarkably free from miasmatic vapors and impurities. There is often a haziness pervading the air along the mountains, but this in no way affects its purity, as it passes off as the cool of the evening sets in.

In the summer the heat is rather intense during the day, especially in the valleys, where the air is somewhat confined; but on the higher grounds the breezes, which are almost constantly descending from the mountains, render it more pleasant. The air rarefied on the plains rises, while another portion, cooled by the snow on the mountains, sweeps down the slopes and brings with it a refreshing coolness. Considerable rain falls in the early part of summer, and often in very copious showers, yet this but seldom supersedes the necessity of irrigating the land under cultivation. Snow generally begins to fall in October, and ceases in April or about the first of May—sometimes, though rarely, reaching a depth of fourteen or fifteen inches; yet it passes off almost as rapidly as it comes, seldom remaining more than twenty-four hours. Even in the valleys which penetrate the first range this is the case. During some winters but little snow falls, and herded cattle are seldom if ever fed during the entire season, yet they appear in the spring in as good order as those of the States which have been housed and fed day by day. In this respect it is the same with the Mexican horses or broncos, many of which are brought to this part of the Territory.

CEREALS.

Colorado is pre-eminently a mining country, its mineral wealth having recently brought within its bounds most of its present population. Eagerly searching for the glittering riches which lie buried in its rugged mountains, but little attention has been given to the cultivation of the soil, and at present not more than one-eighth of the population is engaged in agricultural pursuits. Therefore the data, from which to draw conclusions in regard to the adaptation of its soil and climate to the growth of any particular cereal, are very meager. Enough is known, however, to justify the opinion that at no distant day that section which has been designated in narratives and on maps as the margin of the "Great American Desert" will present broad fields of golden grain. The high anticipations of the most sanguine may not be

fully realized, but the derogatory reports of disappointed fortune-seekers will ere long be disproved by a multitude of facts.

Of the cereals, wheat, oats, and barley grow readily in this soil, and produce abundant crops when properly irrigated and cultivated.

Wheat grows well throughout the length of the Territory, from its northern to its southern limits. In the section under consideration spring wheat is chiefly sown, though on Clear Creek and on the Platte, in the vicinity of Denver, some winter varieties have been tried with success. The reason why more winter wheat is not sown is not because of any failure to yield good crops, but because of the difficulty of preparing the ground in the fall, when it is so dry and hard that it cannot be plowed.

The usual time of sowing spring wheat is during the months of March and April, and sometimes the farmers succeed in getting it in as early as February. Harvest begins in the southern limits of this section, along the Platte, in the latter part of July, closing in the northern portion, on the Cache à Poudre, about the middle of August.

The yield per acre has in some instances reached fifty bushels, very often from thirty-five to forty bushels. Mr. W. R. Thomas,* associate editor of the Rocky Mountain News, who made, during the harvest of 1868, an extended examination of the crops in most of the valleys of Eastern Colorado, estimates the average yield of wheat at twenty-eight bushels per acre. Well-attested cases are known where from sixty-five to seventy-five bushels have been raised on one acre. The estimate is for the actual yield, including all losses, want of care in sowing and harvesting, &c. Where proper care is given to this cereal, and it reaches maturity without injury from the destructive grasshoppers, a yield of thirty-five bushels to the acre may be expected.

From Mr. Thomas's report—which is appended to this article—it appears that the wheat returns from the various valleys of this section, for 1868, foot up two hundred and five thousand bushels (including an estimate for Clear Creek and both sides of the Platte Valley.) At an average of twenty-eight bushels, this shows that about seven thousand three hundred acres were sown in wheat that year. Most if not all of this was grown on the creek bottoms; yet the ridges or uplands, if properly irrigated, would doubtless yield as heavy crops as the bottoms, and it would ripen eight or ten days earlier.

All the varieties which have been tried appear to grow well and bring out fully their several peculiarities, but those chiefly sown are the Chili, Siberian, White Sonora, Blue Stem, Canada Club, and Egyptian or Seven-headed. The White Sonora is most prized, not only on account of its heavy yield, but also because of the beautiful white flour it makes. A new variety, to which, as yet, no name has been given, is now being tested in the vicinity of Denver. If the result equals the present appearance, it will become one of the most popular varieties yet introduced.

The measured bushel of Colorado wheat, if well cleaned, will weigh from sixty-two to sixty-four pounds on an average. In comparing this with the wheat of the States, however, it must be remembered that the grain is perfectly dry, having been raised with scarcely any moisture on the ear from which it is taken—in this respect corresponding with the

* As I shall have occasion to use Mr. Thomas's estimates in regard to the various productions of this section of the Territory, I may say that, from a careful examination of his figures, and of his method of obtaining the data upon which they are founded, as well as from personal inquiries made while passing through the Territory, I am satisfied that he does not exceed the true average, but rather falls below it.

California wheat, requiring to be moistened before grinding. No part of the Union can produce better flour than Colorado, in respect to clear, pearly whiteness, richness in gluten, and ease with which it is converted into bread; and like the flour of the Pacific coast, it will doubtless bear transportation to any part of the world without damage from climate.

Oats are grown with ease and yield abundantly wherever they have been tried in the Territory; in fact, there is no part of the Union where heavier crops of oats can be produced than here. I have ascertained some instances where the amount per acre by actual measurement was from forty-eight to fifty-five bushels, and others are reported as high as one hundred and twenty-five bushels. These were not in little garden patches, which received extra care to report to fairs and societies, but crops taken from extensive farms under ordinary care; in one instance from an aggregate of seven thousand bushels. "Volunteer" crops will come up year after year from the seed scattered during the previous harvest. Mr. Thomas's estimate of thirty-five bushels per acre, and the aggregate of this section for 1868—two hundred and fifty-eight thousand four hundred bushels—shows that something over seven thousand three hundred acres were sown in that cereal.

The soil and climate seem well adapted to the successful growth of barley, which yields a bountiful return for the labor bestowed upon it. Little demand has existed for this grain, however, and not much attention has been given to its cultivation.

In regard to rye my information is deficient, but from what I have ascertained I do not think it yields as good crops as the other cereals named.

That portion of the Territory north of the Platte does not appear to be well adapted to Indian corn, the climate being rather too cold for it. The summer days are warm enough, but the nights are generally cold, and retard its growth. All the corn that I have seen which was raised in this section has been of an inferior quality. It may be that by experimenting with the different varieties, one or more may eventually be found adapted to this climate and soil. The Australian, a white corn, which is said to be the best; the Egyptian, a yellow variety, and the Mexican, mixed. The aggregate return from the valleys heretofore named, for the year 1868, was about thirty-two thousand bushels, averaging, perhaps, twenty bushels to the acre, showing that one thousand six hundred acres were planted. Mr. Thomas gives the average yield per acre over the whole eastern part of the Territory as twenty-five bushels, but the yield in the southern part is much larger than in the northern section.

OTHER PRODUCTIONS.

Irish potatoes seem to be perfectly at home in Colorado, growing readily and abundantly wherever planted, not only in the valleys of the plains, but even far up the narrow defiles of the mountains, ten thousand feet above the level of the sea. Some of the finest patches I saw were along the margin of Clear Creek, between Denver and Golden City, where the stream bursts its way through the lofty *mesas*. In quality they equal the best grown in the States, being large, finely flavored, and mealy. On account of their rapid growth they are sometimes defective in the center. The amount raised in this section last season was probably ninety thousand bushels, and the average yield over one hundred bushels per acre. In one case, in one of the interior mountain valleys, three

thousand two hundred bushels were gathered from eleven acres. In another, on the bottom land of the plains, over seven hundred bushels were taken from one acre. Although I have placed the average at one hundred bushels per acre, yet two hundred bushels may be safely counted upon where the proper care and labor are bestowed upon them.

Turnips, beets, cabbages, tomatoes, peas, beans, onions, &c., are all raised with ease wherever the attempt has been made, some of them occasionally reaching an enormous size; but, on account of the cold nights, which retard growth and delay the maturing season, they come into market later here than in other sections corresponding in latitude.

Wild hops grow in abundance along the creeks, and, when cultivated, thrive in all parts of the Territory.

FRUITS.

So little has been done in the way of raising fruit north of the Platte, that I am almost wholly unadvised on this point. Apple, pear, cherry, and plum trees are being planted out in small quantities, but very few have yet commenced to bear. Some who have attempted it have become discouraged by obstacles they have met with, the grasshoppers in the summer and fall eating off the leaves, and the jack-rabbits gnawing them in the winter. Others, however, are more confident of success, claiming that apples, pears, and cherries can be raised here as well as in the northern States, and I can see no reason why this may not be so. All that is required is proper experimenting with the various varieties to find those best adapted to this climate and soil. The establishment of a good nursery in the vicinity of Denver would not only prove a profitable investment to the proprietor, but would give a great impetus to fruit raising.

Strawberries are being grown successfully around Denver, producing good crops, which are gathered from the 10th to the last of July. There are several native varieties found along the slopes of the mountains, which if cultivated, would probably prove more productive and profitable than any varieties introduced.

The wild raspberries found within the mountain ranges are fine, having an excellent flavor. Two kinds are found here, *Rubus triflorus* and *R. deliciosus*.

The wild plum, *Prunus chicasa*, grows abundantly, the trees often bending under the weight of fruit, which has an excellent taste.

Besides these there are some species of gooseberries and currants, found throughout this section, as the *Ribes lacustre*, *R. aureum*, and *R. floridum*, which, if carefully cultivated, may prove excellent varieties.

There are also two varieties of strawberries common here, one of which, found in the mountains, has a most delicious flavor, surpassing in this respect anything I ever tasted in the States. I would recommend these native varieties to the agriculturists of Colorado as certainly worthy of cultivation, at least until their qualities under culture are thoroughly tested.

STOCK RAISING.

This business, which occupies so important a position among the agriculturists of the plains, requires more than a passing notice. To add any real information to what has already been spread before the public would require a more thorough examination than I have been able to

make, and I will therefore only state the substance of the territorial laws in regard to stock:

SECTION 1. Non-residents may herd stock in this Territory for one year by payment of fifty cents for each animal so herded, in lieu of all other taxes; provided only twenty cents shall be collected on sheep.

SEC. 2. Non-residents desiring to herd cattle or stock in the Territory are required to file with the recorder of the county a certificate of the number and description thereof in the following form:

TERRITORY OF COLORADO,
——— *County.*

The undersigned, owner (or agent of the owner, as the case may be) of the following described animals, proposes to keep and herd the same for grazing purposes, within the county aforesaid, to wit: (describing the number of animals of each kind, respectively, with brands, if any,) from the — day of ———, A. D. 18—, until the — day of ———, A. D. 18—.

This certificate must be acknowledged before the recorder of the county by the person executing the same.

SEC. 5. The penalty for herding without filing such certificate and payment of required tax is two dollars for each animal except sheep, and one dollar each for sheep.

SEC. 10. Forbids importation of Texas cattle.

The butter made here, where proper care is taken, is of most excellent quality, and on account of the demand for it the price of milch cows is kept up to good figures.

IRRIGATION.

The arable portion of the Territory requires irrigation, as the amount of rain is not sufficient in any portion, except, perhaps, a few of the little mountain valleys, to supply the amount of moisture necessary for the crops; but, happily, while nature withholds her rains from these broad plains, she compensates by furnishing ample means for irrigation. As heretofore stated in my description of this section, not only are the bottoms along the creeks within reach of the waters of these streams, but almost every portion of the ridges and terraces which lie between these valleys, by an extension of the ditches or acequias, can be irrigated. While the ridges near the mountains have a greater altitude above the water of the creek, at the same time the descent of the creek is more rapid. Through the section we have been considering the fall of the creeks varies from fifty feet to the mile down to a few feet as they recede from the mountains, and, as but few of the ridges exceed fifty or sixty feet on their average level, it requires the extension of but a few miles to irrigate any portion. By combining together and cutting a large ditch the farmers are enabled to lessen the expense of irrigation. An association on the Platte, above Denver, have spent $14,000 in forming a main ditch five and a half miles long, which supplies fourteen farms with water, and may be made to supply other lands along its course. A descent of one-fourth of an inch to the rod carries the water through the ditch with sufficient rapidity to prevent its being absorbed.

It is necessary, as a matter of course, in digging these ditches to carry them to the highest point of the farm, that all portions of it may be supplied. From the main ditch smaller ones can easily be made wherever desired, by means of a plow.

The rights of parties owning lands along streams to water and of

way for ditching is regulated by law, an abstract of which I give from the Revised Statutes, published in 1868:

SECTION 1. Claim owners on the bank, margin, or neighborhood of any stream, are entitled to use the water thereof for the purpose of irrigation to the full extent of their land.

SEC. 2. Those not having sufficient extent of land to obtain the requisite fall, are entitled to the right of way through the tracts which lie between them and the stream at the point necessary to tap it.

SEC. 3. Such right of way extends on to the ditch, dike, or cutting, sufficient for the required purpose.

SEC. 4. When the water in the stream is not sufficient to supply all, the probate judge shall appoint three commissioners to apportion it.

SEC. 5. When the owner of lands through which it is desirable to take a ditch refuses, then the right of way is to be condemned according to the provisions of the chapter concerning corporations—(the usual law in such cases.)

SEC. 7. Requires ditch owners to preserve the banks of their ditches, so as not to flood or injure the property of other persons.

SEC. 10. Requires the owners of ditches crossing highways to make bridges at these points.

FENCING.

With the Colorado farmer, as with all those of the prairie lands of the West, fencing is an important item. The plains being timberless, except the occasional strips of timber along the creeks, the procuring it from the mountains, the nearest point where it is to be found, necessarily makes it expensive. Hence, ingenuity has been taxed to find plans to inclose land with the least expense. The kind generally in use is the post and plank or pole fence. As swine are almost unknown in this part of the Territory, a two or three-board fence is sufficient protection against the stock, which has such ample outside range. I made an effort to find the cost per acre of irrigation and fencing, but found it entirely impossible from the data obtained to make an average with any degree of certainty. I will give but one estimate, made by a gentleman on Clear Creek, in respect to the difference in cost between the board and wire fences. The wire fence, according to this estimate, would cost one dollar and six cents per rod, while the board fence could not be made for less than two dollars per rod. It will require a large accumulation of facts before a reliable average can be made in regard to these two items; and as they have an important bearing upon the agricultural interests of this country, it would be well to obtain these facts as rapidly as possible.

OBSTACLES AND DRAWBACKS.

Notwithstanding Colorado has so many advantages in an agricultural point of view, yet the Territory has also its drawbacks. The first of these is the dry weather, which makes irrigation necessary, if this can be considered a drawback, which is somewhat doubtful; for although it involves considerable expense, yet, when for a series of years balanced against the loss in non-irrigating sections by drought, the difference would not be as great as at first supposed.

The second drawback is the expense of fencing; but this is not peculiar to Colorado, being common to all prairie countries; and, as no attempt is made here to raise swine, small farmers often combine and inclose two, three, or four farms in one fence, thus materially lessening the cost.

A third and serious drawback arises from the depredations of the grasshoppers, the great enemy of the farmer west of the Missouri River. I had felt some doubts in regard to the reports concerning the cosmopolite character, and the depredations of the *Caloptenum spretum*, (the "hateful grasshopper of Colorado,") but a visit to the plains and mountains of the West has dispelled these doubts. Having for several years past carefully studied the habits of the grasshoppers of the State of Illinois, I entertained a hope that some remedy might be found to mitigate the evil. Although I have not entirely abandoned all hope of ultimate relief, yet I must confess that for certain districts I can at present conceive of no remedy.

On the 17th of June of the present year I met with them at St. Joseph, Missouri, where they literally darkened the lower parts of the walls of the hotel at which I stopped. They were at this time in their complete state, and had been for nearly two weeks previous. At Omaha the next day I saw none. At Cheyenne City, Wyoming Territory, from June 20th to the 29th, although I made careful search on the plains, I saw but one or two in the perfect state, but myriads of young larvæ. At Big Thompson Creek, Colorado, the perfect insects were abundant, while at Cache-a-la-Poudre, twenty miles above, very few could be found. Around Denver, July 7 to 15, a few in the perfect state were found, most of which seemed to have but very recently entered it; the larvæ and pupæ were abundant. Proceeding into the mountains directly west from Denver, toward Middle Park, I saw myriads along the narrow mountain valleys and cañons, often making the air look as though it were filled with snow-flakes. I traced them in this perfect state up the mountain heights to the perennial snows; even on top of those cold, glittering masses I caught perfect insects. And here, too, the bears were seen feeding on this ubiquitous pest. Even along the bare crests of the highest peaks of Snowy Range I found both the perfect insect and the pupæ as active as in the valley beneath. This convinced me that but little hope could be entertained of freezing them out by fall plowing, even were this entirely practicable here. And again, in the uncultivated valleys and slopes of the mountains, year by year, myriads are produced, which, when they reach their perfect state, are borne by the wind around or over the ranges to the plains. They do their flying when the wind is blowing; rising up in the air they turn their heads against it, and are thus borne backwards in the direction it is blowing. How far a large number can or do move during the perfect state, I am unable to say, but am strongly of the opinion that any one brood moves but a few miles; perhaps under some circumstances and in some localities, as on the plains, it may reach from thirty to fifty miles. Hence their progress eastward must be by successive waves.

They often sweep almost clean the crops which are green when they appear in such vast numbers. In this section of Colorado their time of greatest abundance and destructiveness is the last of August and September. Hence, farmers who are acquainted with their movements strive to have their crops gathered, if possible, before that time. But some seasons these vandals make their irruptions from their mountain fastnesses earlier in the season; then woe to the luckless farmer whose pride is his broad acres of waving oats. They revel in these when sufficiently abundant; but not being over nice in regard to diet, when the richer repast fails they enter with avidity upon the destruction of whatever comes in their way—vegetables, trees, weeds, even eating into the bulb of the onion. Tomato plants are said to escape their ravages; but whether this is true or not I am unable to say.

The planting of trees on and around farms, the increase of agricultural

population, and a more general cultivation of the soil, will doubtless have a tendency to increase the amount of rain, and also to disturb their egg deposits, and thus decrease their numbers. The introduction of swine and fowl in considerable numbers would also assist in their destruction, and by this means those points more distant from the mountains will eventually be freed from their depredations. Fortunately they do not appear in such immense numbers every year; in two out of every three seasons comparatively little damage is done.

The Colorado potato bug, *(Doryphora decemlineata,)* another insect enemy of this country, has already been noticed in the agricultural reports.

Before closing, I will add the answers to some inquiries I made, which were handed in by Mr. A. H. Miles, of Vineland Farm, near Denver:

1. "I commenced farming in Colorado in the spring of 1860, and sowed the first wheat sown in this section, (one hundred pounds,) from which I harvested four thousand six hundred pounds. I have continued to sow the same ground in wheat every year since, gathering an average crop of forty bushels per acre. I have known as much as seventy-five bushels of wheat per acre raised in this part of the Territory. I have had forty-five pounds of good flour made from one bushel of Colorado wheat."

2. "Oats yield a fair crop, reaching seventy-five bushels per acre; but I have known black oats to reach one hundred and twenty-five bushels to the acre."

3. "In 1868 I planted forty acres of Egyptian and Australian corn, and in September I called in five farmers, who measured off an acre, and cut it and put it in stook. Taking an average stook, they husked it and found the weight of the ears to be one hundred and fifty-four pounds; there were one hundred and fifty stooks on the acre."

4. "Fruit trees have not proved successful with me. The Lawton blackberry has not done well, but is improving. The Red Antwerp raspberry fruits finely, but not as well as our native berry taken from the mountains. The gooseberry grows and produces finely, being wholly free from mildew. Grapes, as yet, have not been fairly tried. Strawberries are a complete success, the scarlet proving the best variety for table use; the Wilson's Albany the heaviest yielder. The native varieties, taken from the mountains and planted in the valleys, do not appear to succeed as fruit-bearers."

REMARKS BY MR. MILES.

"Alkali in our ground keeps drawing up from the subsoil, and will doubtless prevent our surface soil from deteriorating for a long time.

"Siberian spring wheat weighs sixty-two pounds to the measured bushel, and turns out flour equal to any of the winter varieties.

"Black oats weigh thirty-eight pounds, and English barley oats forty-five pounds, to the bushel.

"The corn measured was the Australian white variety, which stools like wheat. I have taken fifteen large ears from one hill of this variety.

"Mr. Perrin tried the mountain strawberry three years, failing in the end."

NOTE.—1. I have used the word "plains" in the western sense, meaning all that portion of the country east of the mountains, embracing valleys, terraces, and prairies.

2. At the Territorial fair of 1867 Mr. J. W. Wier, of Platte Valley,

Arapahoe County, showed a yield of sixty-eight bushels of wheat to the acre without irrigation. Messrs. Younker, Crawford, and McClellan, of Frazer Ranch, forty-one and a half bushels, irrigated but once. Messrs. Laughlin and Wilson, one hundred and thirty bushels of corn per acre. A. F. Middaugh, five hundred bushels of potatoes per acre.

CYRUS THOMAS,
of U. S. Geological Survey of Colorado and New Mexico.

Hon. H. CAPRON, *Commissioner of Agriculture.*

AGRICULTURAL STATISTICS OF COLORADO.

The following agricultural statistics of Colorado, for the year 1868, were prepared by W. R. Thomas, associate editor of the Rocky Mountain News:

The agricultural statistics which have been collected divide themselves into two classes: first, the number of acres cultivated in certain valleys, with an estimate regarding the crop in those valleys; and second, the actual crop of other valleys, as gathered from reliable sources.

Number of acres cultivated.

Valleys.	Wheat.	Corn.	Oats, barley, &c.	Potatoes, &c.
Platte, above Denver	1,212	395	800	542
Bear Creek	695	40	421	158
Cherry Creek	108	78	256	363
Fontaine qui Bouille	1,735	3,105	1,381	94
Huerfano	1,160	2,950	232	546
St. Charles	485	742	135	87
Arkansas	2,075	3,524	484	176
Totals	7,410	10,894	3,709	1,966

NOTES.—1. Two or three small valleys are included in the Arkansas. 2. Rye and buckwheat are included in "oats, barley, &c."

Taking the following averages—for wheat, twenty-eight bushels per acre; for corn, twenty-five bushels per acre; for oats and barley, thirty-five bushels per acre; and for potatoes and miscellaneous vegetables, one hundred bushels per acre—and the estimated crop of these valleys would be as follows:

	Bushels.
Wheat	207,480
Corn	270,850
Oats, barley, &c	129,815
Potatoes, &c	196,600

The remaining valleys were visited after the crop was threshed, and the number of bushels raised were collected as far as possible:

Bushels of grain.

Valleys.	Wheat.	Corn.	Oats, barley, &c.	Potatoes, &c.
Platte, below Denver	17,564	3,013	33,024	6,875
Cache à Poudre	5,258	2,125	25,000	5,217
Big Thompson	8,206	3,297	27,441	32,375
St. Vrain	21,673	2,075	31,023	2,800
Left Hand	10,350	875	13,707	2,580
Boulders	46,530	.....	42,001	.....
Las Animas	19,542	22,385	6,058	.....
Totals	129,123	33,770	178,254	49,847

NOTES.—1. The figures on corn and potatoes are far below the real facts. 2. Coal Creek is included in Boulder, and several small valleys in the Las Animas. 3. The corn and potato crop was not collected in the Boulder Valley.

Recapitulation.

	Wheat.	Corn.	Oats, barley, &c.	Potatoes, &c.
Bushels estimated from the number of acres	207,480	270,850	129,815	196,600
Bushels collected after the threshing season	129,123	32,770	178,254	49,847
Totals	336,603	303,620	308,069	246,447

These figures, as now given, comprise the mining and agricultural statistics which have appeared in the series of editorial letters referred to. The public must not think that they represent the whole agricultural product of the Territory. Several valleys have not been visited, among which are Clear Creek, Bijou, Kiowa, Running, Plum, and Monument Creeks, the Upper Arkansas Valley, the different valleys lying between the St. Charles and the Las Animas, including the Greenhorn, Upper Huerfano, Apishapa, and Las Cucharas, and the country beyond the Sangre de Christo range in the San Luis Valley. The crops in these various sections have been large, especially in small grains; and had it been possible to collect the figures concerning them, there is no doubt that those now given would have been increased at least one-half.

VALUE OF THE CROP REPORTED.—The value of the crop for the sections given above at government prices would be as follows:

Products.	Number of bushels.	Price per bushel.	Value.
Wheat	336,603	$1 80	$605,885 40
Corn	303,620	1 10	333,982 00
Oats and barley	308,069	1 20	369,682 80
Potatoes, &c.	246,447	75	184,835 25
Grand total			1,494,385 45

AN ESTIMATE ONLY.—We conclude this summary by submitting an *estimate* of the agricultural products of the whole Territory in 1868, which we consider nearly correct. We arrive at the result by increasing the figures on wheat, corn, oats, barley, &c., one-half, and by doubling the potatoes and miscellaneous crop. The table will stand thus:

Products.	Bushels.	Value.
Wheat	504,904	$1,008,667 20
Corn	455,430	500,973 00
Oats, barley, &c	462,103	554,523 60
Potatoes and miscellaneous	492,894	369,670 50
Hay and dairy products		250,000 00
Total		2,683,840 30

STOCK RAISING IN MISSISSIPPI.

Marion County, Miss.—The southern counties of our State are particularly adapted by nature to the raising of large herds of cattle and sheep. With a soil totally unfit for the production of the cereals, save where some water course has deposited the rich loam washed from upland counties, it produces grass, and formerly reed and cane, in abundance. The ruinous practice of burning off the woods in early spring has destroyed nearly all the reed and cane, but I have little doubt that it would spring up again if some stringent local law could be passed to prevent the woods from being burned at all. The district known as the "piney woods" was formed by nature for the rearing of flocks and herds. Little or no winter feeding is required to keep cattle in good condition through the whole year, and sheep are never taken up except

at shearing time. Most of the farmers have come to the conclusion, especially in this (Marion) county, that raising stock is the most profitable business that can be followed here. There is one thing that grows to perfection in these pine barrens. Incredible quantities of the sweet potato can be grown, and there is no more nourishing food for stock. It is true they are very liable to rot, but it is generally in the spring after the young grass begins to shoot up.

A small statement will show how profitable sheep may be made with a very little care and expense. Five hundred head of sheep may be bought for $750, and placed in a good range in the piney woods, several miles from any thickly settled locality, away from the vicinity of dogs, &c. The returns for the first year will be as follows:

2,000 pounds of wool, at twenty-five cents per pound	$500
375 head of sheep increase, at $1	375
Total	875

Expenses.

Hire of hand to look after sheep, at $10 per month	$120
Hire of hand to shear sheep	25
Total	145

Leaving $730 clear profit the first year. This may, perhaps, appear a large estimate, but I know of a good many who are, in a small way, realizing a larger per cent. profit on sheep, and give them no care at all. A little attention will prevent them from straying off. Sheep running loose in the woods in this section are subject to no epidemics, and if not troubled by dogs will nearly double every year.

Some of the citizens of our county have been thinking the matter over and have concluded to buy up a large number of sheep and try the experiment of raising them on an extensive scale. Our native sheep, however, though very hardy, are small and poor in quality of wool. We have thought that if we could import some other varieties of sheep from older States and cross them with our native breed, with the view of combining the various good qualities of length and fineness of wool, size, and mutton qualities, with the hardiness and vigor of our home stock, the profits of the business might be largely increased. There is no better situation than this location for making money by raising stock. The pastures are all public lands, and will, in all probability, not be entered for years to come. How the finer grades of sheep will flourish here remains to be seen, but I have no doubt that, by repeated crossings, a breed combining all the good qualities consistent with vigor and hardiness might be easily obtained.

FRUITS ON THE EASTERN SHORE OF LAKE MICHIGAN.

Jacob Ganzhorn, corresponding secretary of the Western Michigan Lake Shore Horticultural Association, reports the following statistics of the fruit crop of last year in the vicinity of Spring Lake:

717 bushels apples, at $1 50	$1,075 50
55 bushels pears, at $8	440 00
10,323 bushels peaches, at $3 25	33,550 00

23 bushels English cherries, at $5	$115 00
15 bushels plums, at $5	75 00
11½ bushels quinces, at $5	57 50
5,815 pounds grapes, at 15c	872 25
182 bushels currants, at $2 56	465 92
26 bushels gooseberries, at $3 20	83 20
16½ bushels raspberries, at $8	129 00
48¼ bushels strawberries, at $4 80	231 60
4 bushels blackberries, at $4 80	19 20
5 bushels crab apples, at $4	20 00
	37,134 17

The extent of fruit culture on the east shore of Lake Michigan has not been fully ascertained. Some idea can be formed from the following figures. In an address delivered before the Western Michigan Lake Shore Horticultural Association, October 1, 1867, by Henry S. Clubb, it was stated that in the vicinity of Spring Lake the

Total number of fruit farms was	48
Total number of vineyards	33
Total number of acres purchased for fruit	1,564
Total number of acres in grapes	71⅞
Total number of acres in fruit trees	486¾
Total number of acres in preparation	597⅜
Total number of vines planted out	29,907
Total number of raspberry canes planted out	12,625
Total number of fruit trees planted out	68,144
Total number of peach trees in nursery	151,500
Total number of apple trees in nursery	200,000
Total number of vines in nursery	17,000

Had the fruit farms and vineyards on the other side of the river, adjacent to the city of Grand Haven, been included, it would have increased the figures about one-third. In the two years since these statistics were collected, the number of trees and vines planted has been increased at least one hundred per cent., and the number of new fruit farms and acres of land cleared for fruit purposes has increased in a still greater ratio.

This is but the instance of one neighborhood of the lake shore region, and may be regarded as about one-twelfth of the whole lake shore region.

ABORTION IN COWS.

The second report of the commission appointed by the New York State Agricultural Society for the investigation of abortion in cows, just issued by the society, concludes with the statement of the following affirmative results reached by the commission:

First. That cows which have first calved at under three years of age are more liable to abort during their subsequent pregnancies than those which first calved at three years of age or over, in the proportion of five to three; and that eighty-three per cent. of the cows raised on the farms reporting them do first calve at under three years of age.

Second. That cows subjected to removals at any time are liable to abort, over those raised on the farms, in the proportion of seven to four and one-half, and that sixty-three per cent. are thus removed.

Third. That cows subjected to removals during pregnancy are liable to abort, over those moved while not pregnant, in the proportion of nine to two, and that seventy per cent. of those moved yearly are pregnant, and seventeen per cent. are moved yearly.

Fourth. That arrest of development is the condition immediately preceding the abortion; that an excessive drain upon the secretion of milk, during pregnancy, has a tendency to produce arrest of development in the fœtus from inanition; and that an excess of seventy per cent. of milk is demanded from the cows in this district where abortions prevail.

LIVE STOCK AT CHICAGO.

A statement furnished by George T. Williams, assistant secretary, of the receipts and shipments of live stock at the Union Stock Yards, Chicago, for each month of the second quarter of 1869, presents the following totals:

RECEIPTS.

Source of supply.	Cattle.	Hogs.	Sheep.	Horses.
Illinois Central railroad	19,034	85,627	27,356	12
Chicago and Rock Island railroad	22,851	56,932	7,740	16
Michigan Central railroad	218	861	623	.....
Pittsburg, Fort Wayne and Chicago railroad	314	1,303	364	21
Chicago and Alton railroad	20,117	67,417	17,568	514
Chicago, Burlington and Quincy railroad	41,372	134,540	24,757	42
Chicago and Northwestern railroad	19,482	55,176	7,992	28
Michigan Southern railroad	186	2,414	1,792	1
Pittsburg, Cincinnati, and St. Louis railroad	280	1,132	808	1
Driven into yards	962	23	.....	.....
Total	124,716	405,844	89,000	175

SHIPMENTS.

Source of supply.	Cattle.	Hogs.	Sheep.	Horses.
Illinois Central railroad	957	.....	.....	16
Chicago and Rock Island railroad	1,947	435	300	30
Michigan Central railroad	28,33..	41,946	17,403	13
Pittsburg, Fort Wayne, and Chicago railroad	40,508	150,701	12,920	32
Pittsburg, Cincinnati, and St. Louis railroad	6,067	715	385	12
Chicago and Alton railroad	168	.....	.....	.....
Chicago, Burlington, and Quincy railroad	241	.....	100	3
Chicago and Northwestern railroad	783	1,327	961	91
Michigan Southern railroad	27,620	164,714	7,991	14
Total	112,653	359,148	30,060	211

LAW CONCERNING THE CANADA THISTLE.

The following law, to prevent the introduction and spread of the Canada thistle, is upon the statute-book of Pennsylvania, but its operation is limited to the counties named in the enactment:

SECTION 1. *Be it enacted, &c.*, That every owner, possessor, or occupier of land in the counties of Lancaster, Washington, Fayette, Delaware, and Erie, shall cut or mow all the Canada thistles growing thereon, or in the highways adjoining the same, so often as to prevent their going to seed; and if any owner, possessor, or occupier of land knowingly shall suffer any such thistles to grow thereon, or in any highway adjoining the same, and the seed to ripen, so as to cause or endanger the spreading thereof, he shall forfeit and pay the sum of ten dollars; and any person may enter on the land of another who shall neglect or refuse to cut or mow down such thistles, for the purpose of cutting or mowing the same down, and shall not be liable to be sued in any action of trespass thereto.

SEC. 2. That if any person in said counties shall knowingly vend any grass or other seed in which there is any seed of the Canada thistle, such person shall, for every such offense, be fined the sum of twenty dollars.

SEC. 3. That all fines accruing under the provisions of this act shall be collected before a justice of the peace, in the name of the school directors of the proper district, and be for the benefit of the schools in the district in which the fine is incurred.

SEC. 4. That the provisions of this act shall extend to the county of Washington, not only for the Canada, but for all other species of thistle.

MONROE COUNTY, IOWA.

Our correspondent sends the official State census of the crops of 1868 for this county. Some of the figures are compared with the census of 1860, to show the progress of the county:

	Census 1860.	Census 1869.
Population	8,612	11,990
Acres under cultivation	51,120	72,976
Wheat, bushels	38,538	213,042
Corn, bushels	730,856	1,041,961
Oats, bushels	29,699	195,518
Rye, bushels	4,179	13,169
Buckwheat, bushels	8,666	2,382
Potatoes, bushels	21,455	31,013
Hay, tons	8,625	18,741
Sirup from sorghum, gallons	29,832	57,534
Cattle, all ages	3,796	14,404
Horses	2,283	5,576
Asses and mules	96	418
Sheep	6,499	29,596
Hogs	16,163	23,187

The census for the year 1869 shows the following: Number of rods of hedging planted, 54,092; acres planted for timber, 42; fruit trees in bearing, 20,704; fruit trees not in bearing, 32,439; grapevines in bearing, 10,808; grapevines not in bearing, 14,823; pounds of honey, 19,550; pounds of butter, 234,768; pounds of cheese made, 6,332; pounds of wool shorn in 1868, 82,727; number of dogs, 2,026.

THE TEA PLANT IN MISSISSIPPI.

Wayne County, Miss.—In the spring of 1859 a number of Chinese tea plants were sent to me from the Department of Agriculture. They are now from four to six feet in height, and three to four feet across the heads. The heads, formed by the branches and leaves, are very compact. As an ornament in the flower garden the plant is desirable; its dark, evergreen leaves, when interspersed with its white flowers, present an appearance truly beautiful. It commences to bloom in September; flowers white, with yellowish anthers, resembling the single camellia, and continues to bloom until checked by the severe frosts of December. During the late war, when our luxuries were cut off by the blockade, I made many experiments in drying the leaves of the plant in the shade, in the sun, and by the fire, but failed to secure the delicate taste and fragrance of the imported tea. I drank of the tea made of the leaves in each of these forms, and also of green leaves, and the effect, physically and mentally, was to some extent the same as that caused by the imported article. I am told that successful experiments were made in South Carolina before the war in preparing the leaves as it is done in China, but the expense was found to be too great to make the business profitable. I reside in the long-leaf pine region, sixty miles north of Mobile, Alabama, and my land is, of course, thin and poor.

SALE OF POULTRY IN NEW YORK.

Three hundred and sixty-eight imported fowls were sold in New York, August 18, for a total of $3,070; averaging $8 25 each. The highest price paid was for three partridge cochins, $80. Three houdans brought $55. Three dark brahmas, $52. The highest price paid for buff cochins was $46. Three gray dorkings brought $38. The lowest price paid was for a pair of white bantams, $3. A fine pair of Toulouse geese sold for $26. A fine pair of Embden geese, $17 50—being less than the amount of freight and duties would have been if imported alone.

With regard to this sale it is remarked that the time of shipment was unfavorable, being at the close of the breeding season. Also, that the fowls, taken as a whole, were inferior stock, and were in poor condition, owing to effects of confinement during the voyage, aggravated by a week's detention at the wharf after landing. A number had died previous to the sale.

GUERNSEY CATTLE.

Answers returned to a series of inquiries relative to this breed of cattle, by breeders of the island of Guernsey, have been collected by Thomas L. Harrison, secretary of the New York society, and the substance officially presented, is as follows:

"The cattle of the islands of Jersey, Alderney, and Guernsey are, it is claimed, not of common origin, and the breeds, though similar, entirely distinct. The Alderney breed, which was smaller than the others, has been to such an extent crossed with the Guernseys that it no longer exists as a distinct breed; and although formerly cattle were occasionally brought to and from the islands of Jersey and Guernsey for breeding purposes, the interchange has, for the past twenty years or thereabouts, been prohibited, the people of each island thinking their cattle better than the others. The Guernseymen assert that their cattle are larger and better feeders, and yield cream and butter of better quality than those of Jersey. The cows are very profitable; the quantity of milk varying from twelve quarts per day (given as an average) for six months after calving to twenty-four quarts, (stated as a maximum yield for that period.) The yield of butter is said to reach in some instances eighteen pounds per week, and four hundred pounds in a year. The cows continue long in profit, and are in their prime from four years of age to eleven. The cattle exported from Guernsey go mostly to England; the numbers sent over in 1866, 1867, and 1868, being as follows:

	1866.	1867.	1868.
Males	6	4	4
Females	356	655	663

"The small number exported in 1866 is accounted for by the prevalence of the rinderpest in England during that year. The prices obtained are, for good cows, about twenty pounds sterling; heifers, sixteen pounds sterling; yearlings, eight pounds sterling.

"As in Jersey, the importation of foreign cattle (except for slaughter) is strictly prohibited, and the government and the agricultural society

of the island each employ an official to prevent infraction or evasion of the law."

The report for 1868 of the Royal Agricultural Society of Guernsey gives some interesting statistics, and some of these are brought down one year later by adding the returns for that year, which will show the following figures:

The total number of horned cattle in the island is 6,787, a prodigious number for its size, which is not much more than twenty square miles, the island being nearly in the shape of a right-angled triangle, with sides of six, six and a half, and nine miles in length. Of the cattle, 3,142 are cows in milk or heifers in calf; of the rest, 1,027 are over and 2,618 under two years old. The number of sheep is under 1,000, but the swinish population is very large, amounting in 1867 to 5,815. The area in cultivation was, in 1867, 3,561 English acres, of which there were in wheat 759¾; barley, 448¾; oats, 379½; potatoes, 667; parsnips, 930; carrots, 181¾; beets, 194¼. The large area given to root crops, 1,306 acres, helps to explain how it is possible to keep so many cattle, although, when we consider that the climate is very mild and peculiarly adapted to grazing, the number is less surprising than it seems at first. It is to be taken into account, however, that the published accounts of Guernsey state that there was a good deal of waste land in the island, notwithstanding its maintaining nearly three hundred and fifty head of horned cattle to the square mile.

The report of the Guernsey Agricultural Society before mentioned contains also its regulations or by-laws, and from it a few items of interest may be taken. The society seems to be a very active and useful one, and numbers three hundred and thirty-three members, paying from five shillings to one pound sterling each. Subscribers of five shillings are members; subscribers of one pound sterling per annum have the right to be present and vote at the meetings of the committee of directors. The society holds three meetings in the year: at Whitsuntide, for the exhibition of all live stock, prizes from five shillings to five pounds sterling; at Michaelmas, for young bulls (first prize ten shillings) and boars, (first prize one pound sterling;) and at Christmas, for fat stock, grain, &c. There is also a show of flowers, fruits, butter, cider, and poultry, held in June; and prizes are offered for farms, in two classes, the small farms of twelve acres and under, and the *large*, of over twelve acres in extent; and also for liquid manure reservoirs, which seem to be held of great importance. The revenue of the society in 1867 was from subscriptions £110; from the estates (legislature) of the island £60; from investments £8 10*s.* 7*d.*; and from the shows £37 17*s.* 9*s.*; total, £216 8*s.* 4*d.*; and it expended in prizes £131 10*s.* 10*d.*, and upon its library £14 14*s.* 6*d.*

Some of the by-laws of the society are worthy of notice. Every member who retires from the society and afterwards desires to rejoin it must pay up his subscription during the intervening period, and one pound sterling as a fee of readmission. It also provided that prize bulls and prize boars must be kept for use in the island for stated periods after winning their prizes, and if kept longer than the time required they receive additional payments. Prize cows and heifers must each produce a calf in the island, and the sows a litter, after the award; and the first-prize cows and heifers receive one pound sterling each in addition upon the birth of each of their next two calves afterwards, if by approved bulls.

The following regulation seems particularly wise in conception, though perhaps difficult to carry out in practice: "If any member, after the

prizes shall have been declared, shall call in question the decision of the judges or managers, he shall be liable to a fine of one pound sterling; and in default of payment he shall be expelled the society."

The scales of points for Guernsey cattle differ somewhat from those used in Jersey. They are as follows:

SCALE OF POINTS FOR GUERNSEY COWS.

	Points.
I. If sired by an approved bull*	
II. Head small, throat fine, eye lively and large, muzzle small and encircled with white, (or yellow if the beast be black;) horns shiny and slightly curved inward, tipped with black; ears small, and orange-colored inside	2
III. Back straight, and at a right angle with the hind quarters; brisket broad, and in a line with the belly	7
IV. Skin fine and loose, well covered with soft short hair of a good color	4
V. Ribs well rounded; flank light; short space between the ribs and hips; tail fine	2
VI. Fore legs straight and well shaped; hind legs long and well shaped—large down to the knee and hock and fine below; hoofs small; the legs not crossing in walking	3
VII. Udder large, well filled up behind; teats large and well spread; milk-veins large and well defined	2
VIII. Development, (size and growth)	4
IX. General appearance	2
	4
Perfection	30

No prize to be awarded to a cow or heifer having less than twenty-one points.

Two points to be deducted from those stated in the scale, for heifers, on account of their milk-veins not being so well developed; so that a heifer of twenty-eight points shall be considered perfect.

SCALE OF POINTS FOR BULLS.

	Points.
I. If sired by an approved bull	
II. Head handsome and fine, cheek small, throat fine, muzzle small and encircled with white, nostrils large and open; horns shiny, slightly curved, the points black, not too large at the base; ears small, orange colored inside; eye lively and large	2
III. Neck fine and well set on; brisket broad; carcase round and deep, with ribs well rounded out	7
IV. Back from the shoulders to the tail in a straight line, forming a right angle with the tail; tail fine	3
V. Skin fine and loose, well covered with soft fine hair of an approved color	3
VI. The fore-legs straight, short, handsome, and strong; large down to the knee, and fine below	3
VII. The hind quarters from the hock to the back large and well filled in with flesh, the legs not crossing each other in walking	2
VIII. The development	2
IX. General appearance	2
	4
Perfection	28

No prize shall be awarded to a bull having less than twenty points.

*In the original it is "Race de père approuvé," but it is believed that the meaning is as given above.

CURRENT PRICES OF ENGLISH SHORT-HORNS.

Thornton's "Record of Short-horn Transactions" in England, published in July, 1869, gives details of prices received at the sales of the present season, averages of which, for each herd, are presented as follows:

Mr. Bowly's short-horns, sold April 22, 1869, near Cirencester—

	£	s.	d.
25 cows and heifers, at an average of £93 19s. 1d.	2,348	17	0
14 bulls and calves, at an average of £35 0s. 6d.	490	7	0
39 averaged £72 16s. 0d. Total	2,839	4	0

Three Siddingtons averaged £360 10s.; twenty-one Musicals averaged £55 15s.; ten Violets averaged £37 13s.

Messrs. F Leney & Sons' short-horn yearlings and calves, sold at Wateringbury, Kent, May 6—

	£	s.	d.
23 heifers, at an average of £70 5s. 2d.	1,615	19	0
20 bulls, at an average of £56 19s. 3d.	1,139	5	0
43 averaged £64 1s. 6d. Total	2,755	4	0

Lord Penrhyn's short-horns, sold at Wicker Park, Bucks, May 7—

	£	s.	d.
34 cows and heifers, at an average of £67 9s. 9d.	2,282	14	0
18 bulls and calves, at an average of £47 19s. 0d.	863	2	0
52 averaged £60 10s. 0d. Total	3,145	16	0

Eight Wild-eyes averaged £90 19s.; and eleven Darlingtons averaged £75 10s.

The herd of Mr. Wortley, of Ridlington, Uppingham, Rutland, sold May 13—

	£	s.	d.
48 cows and heifers, at an average of £32 7s. 1d.	1,552	19	0
14 bulls and calves, at an average of £30 12s. 0d.	428	8	0
62 averaged £31 19s. 1d. Total	1,981	7	0

The herd of D. Ainsle, esq., Edinburgh, sold May 18—

	£	s.	d.
19 cows and heifers, at an average of £39 1s. 4d.	742	7	0
8 bulls and calves, at an average of £26 2s. 4d.	208	19	0
27 averaged £35 4s. 8d. Total	951	6	0

The herd of Mr. G. W. Roberts, King's Walden, Herts, sold May 25—

	£	s.	d.
35 cows and heifers, at an average of £28 12s. 5d.	1,001	14	0
2 bulls, at an average of £42 0s. 0d.	84	0	0
37 averaged £29 6s. 10d. Total	1,085	14	0

Mr. W. A. Wooler's short-horns sold, June 8, at Sadberge, Darlington—

	£	s.	d.
10 cows and heifers, at an average of £26 17s. 7d.	268	16	0
4 bulls and calves, at an average of £17 3s. 10d.	68	15	6
14 averaged £24 2s. 3d. Total	337	11	6

The herd of Charles Leney, esq., sold at West Peckham, Kent, June 23—

	£	s.	d.
17 cows and heifers, at an average of £42 12s. 4d.	724	10	0
7 bulls and calves, at an average of £23 17s. 0d.	166	19	0
24 averaged £37 3s. 0d. Total	891	9	0

RECAPITULATION.

Mr. Bowley, cows and heifers, averaged $469 75; bulls and calves, averaged $175.
F. Leney & Son, heifers, averaged $351 25; bulls, averaged $284 75.
Lord Penrhyn, cows and heifers, averaged $335 50; bulls and calves, averaged $239 75.
Mr. Wortley, cows and heifers, averaged $161 75; bulls and calves, averaged $153.
D. Ainsle, cows and heifers, averaged $195 25; bulls and calves, averaged $130 50.
G. W. Roberts, cows and heifers, averaged $143; bulls and calves, averaged $210.
W. A. Wooler, cows and heifers, averaged $134 25; bulls and calves, averaged $85 75.
Charles Leney, cows and heifers, averaged $213; bulls and calves, averaged $119 25.

The stock of the late Thomas Crisp was sold at Butley, Suffolk, in July. The short-horns were in low condition, the effect of last year's drought on the root and hay crop, which this year's grass had failed to remove. The average price, therefore, was not a high one. Sales were as follows:

	£.	s.
65 Cows and heifers, at an average of £19 13*s.* 8*d*.....	1,279	8
26 Bulls and calves, at an average of £15 14*s.* 6*d*.....	408	19
91 Averaged £18 11*s*.....	1,688	7

At a sale of pigs at the same time, the large breed went off slowly, the best sows commanding fifteen and a half, eleven and a half, and ten and a half guineas. The highest prices for the middle breed were twelve and a half and ten guineas. There was some competition for the small breed whites. A two-year-old sow and nine pigs brought twenty-six guineas, although the pigs were not of much promise. Lady Suffolk was sold for twenty guineas. Prices for other lots ranged from ten to four guineas. The black pigs, descended from the somewhat noted Black Diamond, commanded good prices; the highest-priced sow, with pigs, being twenty-three guineas. One sow and six pigs were sold at thirty guineas. A boar brought thirty-five guineas. Other prices ranged from sixteen to five guineas, one small pig of considerable promise selling for twenty-seven guineas.

Mr. Charles Howard's Oxfordshire Downs, fifty-two shearling rams and one old sheep, sold at Biddenham, Bedford, for £710 6*s.* 6*d.*, being an average of £13 8*s.*

ITEMS FROM VARIOUS SOURCES.

In McHenry County, Illinois, there are eleven cheese factories, which use the milk of about 3,400 cows, and the past season have made about 1,600,000 pounds of cheese. In addition there are a number of private dairies.

Mr. C. Needham, of Tulare, California, raised last year, from seed sent from this Department, fifty-four bushels of white Mediterranean wheat to the acre. This year the yield was not quite so large, yet more was produced to the acre than of any other variety.

An immense crop of grapes is reported in Nevada County, California. On the 1st of August two-thirds of a crop had been taken from the Black Hamburgs, and they still seemed full. The Isabellas were loaded to their utmost capacity.

By the assessor's returns for 1869, in Ohio, it appears that, as com-

pared with the returns for 1868, there has been a decrease of over 20,000 in the number of cattle in the State, 356,000 hogs, and 1,416,000 sheep. There has been a decrease in number of sheep in every county, and of hogs in all but one county. There is an increase of 4,200 horses reported.

At the Northern District Fair, at Marysville, California, recently held, Mr. J. R. Nickerson, of Placer County, exhibited one hundred and fifty varieties of grapes, one hundred and seventy-five varieties of apples, thirty of pears, sixteen of peaches, six of plums, five of quinces, and two of nectarines, besides almonds and pomegranates, with thirteen kinds of wine and two of brandy made on his place. Mr. Nickerson is a pioneer, and has several hunded acres in fruits, vegetables, and grains.

A correspondent, writing from Marion County, Florida, says: "On the 30th of July, planted one hundred and fifty orange trees cut down to within three feet of the root. The period referred to is, strange as it may seem to people north, the time for planting all kinds of trees. Anything will germinate here in the rainy season. It is astonishing how the grass grows. I mow every day, between the showers, a variety of fine grasses to cure for the winter use of my cattle. They mow grass here with a *hoe*. It's a fact. A well-known physician told me the other day that he believed there was not a scythe in the city except mine Those who don't mow with the hoe do so with the reaping hook. But I see signs of improvement."

METEOROLOGY.

COMPILED IN THE DEPARTMENT OF AGRICULTURE FROM REPORTS MADE BY OBSERVERS FOR THE SMITHSONIAN INSTITUTION.

Table showing the highest and lowest range of the thermometer, (with dates prefixed,) the mean temperature, and amount of rain (in inches and tenths,) for July and August, 1869, at the stations named. Daily observations at 7 a. m., and 2 and 9 p. m.

States and stations.	JULY, 1869.						AUGUST, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MAINE.		°		°	°	*In.*		°		°	°	*In.*
Houlton	3	92	1, 5	52	69. 5	2. 30	1	86	31	51	62. 2	.....
Steuben	2	80	19	51	61. 6	1. 40	11	80	28	49	61. 7	2. 00
Williamsburg	4, 11	83	1	52	66. 1	1. 48	11	80	31	46	61. 8	2. 88
West Waterville	11	87	1, 5	57	69. 6	0. 93	10	86	31	53	65. 7	2. 40
Gardiner	11	86	1, 5, 19	59	67. 9	1. 51	3, 11	79	31	52	64. 4	1. 16
Standish	11	88	1	54	70. 1	3. 54	3, 10	85	31	50	65. 5	1. 92
Norway	4, 11	88	1	55	68. 9	2. 10	11	87	7	48	64. 5	0. 57
Cornish	4	90	1	52	68. 5	4. 03	11	83	31	47	64. 4	2. 29
Cornishville	11	88	1, 5	56	71. 3	3. 27	11	85	7, 31	54	67. 4	2. 23
Averages	.....	.....	.....	.....	68. 2	2. 28	.....	.....	.....	.....	64. 2	1. 93
NEW HAMPSHIRE.												
Stratford	28	86	1	48	66. 3	2. 36	10	84	31	46	61. 0	3. 17
Whitefield	2	88	1, 5	49	65. 6	0. 86	10	81	23	44	61. 3	2. 90
North Barnstead	11, 28	88	1	56	70. 6	1. 11	.....	.....	.....	.....	.....	.....
Goffstown Center	11, 25	88	1	49	68 9	1. 60	11, 20	86	6, 7	50	65. 8	2. 88
Averages	.....	.....	.....	.....	67. 9	1. 48	.....	.....	.....	.....	62. 7	2. 98
VERMONT.												
Lunenburg	11	84	1	52	68. 2	2. 75	25	78	31	48	63. 9	2. 50
North Craftsbury	3	84	1	47	65. 0	3. 45	24	82	7	44	60. 1	4. 42
Randolph	11	89	1	48	69. 0	2. 47	10	86	8	46	66. 7	1. 87
Woodstock	25	83	6	44	65. 2	1. 76	10, 11	79	7	44	61. 6	2. 24
Near St. Albans	26	84	1, 5	52	67. 9	.....	20	84	31	47	64. 1	.....
West Charlotte	23	91	1	53	71. 8	2. 75	10	90	8	52	68. 3	4. 53
Middlebury	4	82	1	54	67. 7	2. 56	{1, 10, 20, 25, 29	75	7, 31	51	64. 3	2. 85
Panton	25	85	1	55	69. 9	3. 61	10, 29	82	31	52	66. 7	3. 50
Averages	.....	.....	.....	.....	68. 1	2. 76	.....	.....	.....	.....	64. 5	3. 13
MASSACHUSETTS.												
Kingston	4	90	2	54	70. 2	1. 75	11	87	7, 31	52	66. 0	1. 24
Topsfield	11	89	1	55	69. 8	1. 31	11	86	31	50	66. 3	2. 16
Georgetown	27	91	1	54	69. 8	1. 40	11	91	31	47	66. 7	1. 95
Milton	16	93	2	56	67. 6	2. 43	20	90	31	51	68. 7	1. 95

Table showing the range of the thermometer, &c., for July and August—Continued.

States and stations.	JULY, 1869.						AUGUST, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MASS.—Continued.		°		°	°	*In.*		°		°	°	*In.*
Cambridge	4	87	1, 2	58	70.6	.....	20	88	31	54	68.0	.....
North Billerica	16	90	2	58	71.2	.....	11, 20	88	7, 8	52	65.7	.....
West Newton	11, 16, 27	96	6	56	74.9	3.77	20	96	30, 31	50	70.6	1.78
New Bedford	16	89	1	57	70.9	1.60	21	81	31	52	65.3	2.70
Worcester	16	87	1	53	70.1	1.40	20	85	31	52	67.2	2.21
Mendon	11, 16	86	1	50	69.6	2.25	20	84	7	54	66.5	2.20
Lunenburg	16	90	1	54	70.2	1.95	20	89	31	50	67.1	3.30
Amherst	16	90	1, 2	54	69.1	2.98	20	87	8	49	66.9	1.04
Richmond	10	84	2	47	68.3	7.25	.....	.....	.....	.....	.....	.....
Williams College	25	86	2	54	68.2	5.17	.....	.....	.....	.....	.....	.....
Hinsdale	8	82	1	50	66.3	2.60	20	86	31	44	65.3	1.85
Averages	.....	.....	.....	.....	69.8	2.76	.....	.....	.....	.....	66.9	2.03
RHODE ISLAND.												
Newport	4, 16, 17	81	1	58	69.6	0.76	21	82	6, 7, 31	58	67.4	3.21
CONNECTICUT.												
Columbia	16	92	1	56	70.9	.....	.....	.....	.....	.....	.....	.....
Middletown	16	93	1, 2	55	70.3	3.02	21	89	1, 7, 8	53	68.4	2.81
Waterbury	16	87	2	49	69.1	3.66	.....	.....	.....	.....	.....	.....
Colebrook	11, 16	86	1	53	68.3	3.60	20	90	31	47	66.5	1.84
Brookfield	9	98	7	54	71.7	4.50	20, 21	86	8	50	68.1	3.30
Averages.	.....	.....	.....	.....	70.1	3.70	.....	.....	.....	.....	67.7	2.65
NEW YORK.												
Moriches	17	92	1, 6	61	74.4	2.99	21	98	7	55	72.8	2.15
South Hartford	4, 11, 12, 13, 25	84	1	54	72.5	3.12	.....	.....	.....	.....	.....	.....
Hudson	16, 25	90	1, 2	59	71.8	3.67	20	93	8	53	67.9	2.40
Garrison's	11, 16	93	5, 6	52	72.4	1.70	20	95	7	52	72.0	1.33
Throg's Neck	16	95	1	60	72.6	.....	21	94	31	56	71.0	.....
White Plains	16, 17	87	1, 5, 30	60	70.9	.....	.....	.....	.....	.....	.....	.....
Deaf and Dumb Ins.	16	90	1	61	72.3	4.45	20	93	31	58	73.2	1.35
Columbia College	16	91	14	65	75.0	3.13	21	95	31	56	71.5	1.71
Flatbush	16	93	6	57	73.9	2.23	20	92	23	55	71.9	2.11
Glasco	16	97	1	54	73.0	1.46	20	100	9	54	72.5	1.54
Newburgh	11	94	1	60	73.8	2.60	.....	.....	.....	.....	.....	.....
Minaville	16, 25	88	1	52	70.5	5.05	10, 19	96	6	54	69.3	2.15
Gouverneur	26	82	1, 5	53	67.1	3.13	20	81	6	46	63.6	1.74
North Hammond	26	90	1, 5, 6, 11, 12, 22	60	70.4	1.54	23	90	31	50	67.7	1.74
Houseville	25	85	6	49	67.0	7.96	.....	.....	.....	.....	.....	.....
Leyden	25	80	1	48	63.8	6.04	20	81	31	44	60.1	4.84
South Trenton	25	92	5	50	69.1	10.72	20	88	6, 7, 8, 9	48	64.5	5.22
Cazenovia	25	89	1	51	67.0	.....	20	86	31	47	65.4	.....
Oneida	25	89	5	52	69.7	12.14	20	90	31	50	68.3	5.95
Depauville	26	84	1	52	66.2	3.65	20	83	31	48	64.7	2.75
Oswego	10, 25	82	1	51	66.0	6.67	20	82	27, 31	52	68.8	4.20
Palermo	25	91	1	40	66.4	4.70	20	93	6, 31	49	65.7	2.60
North Volney	25	89	5	53	69.1	.....	20	88	31	52	67.5	.....
Ludlowville	15	95	2	53	69.7	.....	20	96	8	51	70.3	.....
Waterburg	11, 26	90	5	50	68.5	.....	20	96	7	42	66.1	.....

Table showing the range of the thermometer, &c., for July and August—Continued.

States and stations.	JULY, 1869.						AUGUST, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
NEW YORK—Con.		°		°	°	*In.*		°		°	°	*In.*
Nichols	15	96	5	49	69.4	.....	20	96	7, 8	48	67.3	.....
Newark Valley	16, 25, 26	88	5, 6	50	68.0	4.20	.....	.....	.....	.....	.....	.....
Himrods	15	85	5	54	65.7	4.06	20	90	31	49	66.1	3.31
Rochester	25	84	1, 21	57	68.9	4.90	20	86	31	52	63.4	4.60
Little Genesee	16	85	6	50	67.8	6.13	20	92	8, 31	42	66.2	2.46
Suspension Bridge	15	89	1, 12	51	68.9	.....	20	92	7	45	66.2	.....
Buffalo	19	87	1, 21	57	70.0	4.57	23	89	5	48	68.7	3.98
Averages	.....	.....	.....	.....	69.6	4.61	.....	.....	.....	.....	67.9	2.93
NEW JERSEY.												
Paterson	16	95	1	59	73.0	4.95	21	98	6	54	71.8	2.89
Newark	16	92	2	57	72.1	3.69	21	91	9	51	70.3	1.56
Trenton	16	95	6, 22	62	76.4	3.04	21	96	6	56	75.7	0.92
Rio Grande	15, 16	100	1, 5	59	77.0	1.63	21	102	6	50	73.9	0.38
Moorestown	16	94	6	60	73.3	1.98	21	98	31	54	72.2	1.26
Newton	5, 6	92	31	57	70.3	1.92	.....	.....	.....	.....	.....	.....
New Germantown	16	93	2, 6	59	71.7	3.02	21	96	31	54	71.2	1.57
Haddonfield	16	94	6	62	73.6	1.77	20	95	6	56	73.8	0.55
Newfield	16	99	1, 6	61	75.4	.....	21	101	8	55	74.4	.....
Greenwich	16	93	1, 6, 31	63	75.1	2.82	21	93	6	55	72.9	1.56
Vineland	16	102	6	58	78.3	2.81	21	102	7	54	75.9	1.23
Averages	.....	.....	.....	.....	74.2	2.76	.....	.....	.....	.....	73.1	1.36
PENNSYLVANIA.												
Nyces	11	92	5, 23	49	67.7	5.20	21	90	7	38	65.6	1.20
Hamilton	25	88	31	53	67.5	3.25	20, 21	88	31	47	64.7	1.92
Fallsington	16	92	6	62	73.0	2.50	21	95	31	56	74.0	1.00
Philadelphia	16	96	1	64	76.3	2.78	21	97	6	58	75.3	1.11
Germantown	16	96	4, 5, 8, 22	62	82.9	.....	21	97	7	55	73.7	.....
Horsham	16	92	6	60	72.0	2.42	20, 21	94	6	55	71.9	1.30
Plymouth Meeting	16	92	2	59	73.1	2.33	20	95	6, 7	55	72.2	1.33
Dyberry	11	89	1	50	66.7	2.71	20	90	8	40	63.7	2.26
Whitehall	16	90	7	54	72.7	.....	21	94	8	45	71.0	.....
Factoryville	11	90	2	50	68.6	2.46	20	93	8	44	66.3	2.10
Reading	16	94	2	57	73.0	2.20	21	96	7, 9	55	73.5	1.02
Parkerville	16	93	24	61	74.9	1.51	21	99	8, 9	55	74.7	0.82
West Chester	16	93	1, 6	60	73.5	1.49	21	94	6	54	72.0	0.77
Ephrata	11, 16	96	1	63	78.4	2.29	20, 21	98	8, 31	60	76.8	1.44
Mount Joy	17	95	1	60	73.9	.....	21	105	27	53	74.3	.....
Harrisburg	16	94	6	64	76.0	3.77	.....	.....	.....	.....	.....	.....
Carlisle	16	94	2, 6, 23, 24	60	70.2	3.40	20	95	8	52	73.6	1.10
Fountain Dale	16	93	6, 21	60	73.8	3.76	21	94	7	53	71.7	1.89
Tioga	16	85	30, 31	46	67.3	4.55	19, 20	86	6, 8	38	64.3	3.35
Lewisburg	16	92	2, 21	56	70.5	4.11	20	94	7	50	70.2	2.19
Grampian Hills	15	89	6, 21	50	66.8	5.68	20, 25, 28	90	6, 7	46	67.3	2.22
Johnstown	16	90	6	50	69.5	5.59	21	89	7	47	69.4	1.66
Franklin	3, 14, 15	89	4, 5	55	.....	.....	24, 25	92	31	46	69.6	2.88
Connellsville	14, 15, 16	90	30	54	72.3	.....	20, 21, 22	91	31	48	71.6	.....

Table showing the range of the thermometer, &c., for July and August—Continued.

States and stations.	July, 1869.						August, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
PENN'A—Con'd.		°		°	°	*In.*		°		°	°	*In.*
New Castle	16	89	6	49	72.2	.....	20, 21	89	7, 8	45	72.2	.....
Beaver	15	88	23	57	71.5	.....	20, 25	88	7, 9	53	70.4	.....
Canonsburg	15	90	22, 30, 31	55	71.5	4.21	21, 24	93	8	47	71.2	1.43
Averages	.....	.....	.....	.....	72.1	3.31	.....	.....	.....	.....	70.8	1.65
DELAWARE.												
Milford	15	100	22	62	78.4	1.65	21	103	6, 7, 8, 31	58	70.9	0.30
MARYLAND.												
Woodlawn	16	94	6	53	74.5	5.70	20	94	31	57	72.9	1.13
Annapolis	16	97	23	63	78.4	5.60	21	95	7, 8, 9	59	77.0	1.60
St. Inigoes	16	96	22	66	78.2	2.55	.....	.....	.....	.....	.....	.....
Mt. St. Mary's	16	92	21	58	72.0	2.22	20, 21	94	7	53	72.4	1.22
Averages	.....	.....	.....	.....	75.8	4.02	.....	.....	.....	.....	74.1	1.32
DIST. COLUMBIA.												
Washington	16	94	23	63	76.8	2.65	22	98	7, 8, 9	59	76.0	0.70
VIRGINIA.												
Johnsontown	11, 16	94	2, 31	64	76.9	3.85	21	95	7	59	75.2	0.20
Hampton	16	99	6	65	80.0	6.30	21, 29	98	6, 9	62	77.5	3.50
Zuni Station	11, 14, 15, 17, 18	98	7	60	80.8	2.37	29	98	7, 9	56	78.7	0.40
Bacon's Castle	11	104	1, 2	66	82.9	.....	15, 16, 21	100	31	64	81.0	.....
Comorn	11	94	6, 23	63	77.8	2.44	21	95	7, 9	60	77.9	0.61
Vienna	.....	.....	.....	.....	.....	.....	2_1	95	5, 7, 8	60	76.7	1.40
Staunton	11, 17	93	31	60	75.8	1.70	2_0	92	8, 9	58	75.0	0.65
Lexington	16	101	31	62	79.0	1.02	2_0	104	7	56	78.4	1.53
Lynchburg	15, 16, 17	92	6, 7, 31	63	77.6	.....	2_2	95	8	56	77.5	.....
Sunnyville	14, 15	93	23	50	71.9	4.60	2_1	98	10	46	71.4	0.70
Wytheville	14	92	21, 23	54	72.5	1.38	2_3	95	9	49	73.1	1.94
Near Wytheville	14, 15	88	23	52	72.0	2.80	21	92	9	47	71.7	2.55
Averages	.....	.....	.....	.....	77.0	2.94	.....	.....	.....	.....	76.2	1.35
WEST VIRGINIA.												
Romney	15, 16	102	31	60	73.9	.....	21	102	7, 31	56	78.9	.....
Weston	17	94	23	52	76.6	.....	22, 25	91	7	49	71.8	.....
Cabell C. H.	11	96	28	40	70.8	3.40	21	96	31	46	77.2	1.30
Averages	.....	.....	.....	.....	73.8	3.40	.....	.....	.....	.....	76.0	1.30
NORTH CAROLINA.												
Goldsboro'	17	107	22, 23	69	84.4	4.42	22	104	8, 9	64	82.2	3.75
Mt. Olive	14, 17, 18	98	24	63	81.8	10.45	22	98	9	62	80.5	7.25
Oxford	15	102	6	66	83.0	0.75	22	96	8, 9	56	78.5	2.45
Albemarle	11, 14, 15	104	23	59	79.1	0.68	21	99	8, 10	50	77.8	5.95
Statesville	15	100	23, 24	60	77.1	1.06	17	98	9, 10	48	76.7	2.56
Asheville	14	84	23	60	71.7	1.50	22	86	9	51	72.0	0.22
Do	15	84	23	54	70.8	.....	22	86	9	46	71.4	.....
Chapel Hill	15	103	23	68	82.5	.....	21	103	31	69	80.4	.....
Averages	.....	.....	.....	.....	78.8	3.14	.....	.....	.....	.....	77.4	3.70

Table showing the range of the thermometer, &c., for July and August—Continued.

States and stations.	JULY, 1869.						AUGUST, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
SOUTH CAROLINA.		°		°	°	*In.*		°		°	°	*In.*
Aiken	14	101	7	68	81.4	5.56	15	96	9	61	79.0	5.11
Do							18	96	8, 9	62	79.8	6.00
Gowdysville	11, 13, 15	99	23	69	82.7	2.05	21, 22	99	1, 11	66	83.4	2.40
Averages					82.1	3.81					80.7	4.50
GEORGIA.												
Atlanta							22	98	9	50	75.7	2.12
Macon	11	103	25	70	78.1	3.34	21	103	8	64	80.8	2.85
Berno	10, 13	93	7	70	79.5	9.17	22	92	8	64	77.5	3.90
Penfield	14	99	23	68	81.0	2.17	22	99	8, 9	62	79.7	1.40
Averages					79.5	4.89					78.4	2.57
ALABAMA.												
Opelika	14	102	21, 25	71	82.8	5.13	22	105	7	65	83.0	2.68
Carlowville	11	98	7, 19, 20, 22, 25	74	80.2	5.67	14, 15, 16	98	9	68	82.6	6.63
Moulton	15	90	23	61	76.1	3.76	16	91	9	59	78.9	0.46
Greene Springs	12	97	23	66	81.2	1.38	16, 20	98	10	59	74.1	2.32
Havana	11, 14	94	24	60	79.8	1.60	16	98	10	62	80.3	3.00
Fish River	10, 12, 13	89	8	74		6.15						
Mobile							23	95	10	74	83.0	
Averages					80.0	3.95					80.3	3.10
FLORIDA.												
Port Orange	13	92	25	71	81.0		30	92	8	74	82.6	
Jacksonville	16, 17, 18, 19, 21	95	25	72	83.3	5.46	22	100	8	73	84.5	5.50
Pilatka	4, 13	102	4, 5, 8, 22, 23, 24, 31	72	82.5	8.23	19	101	7, 8, 9, 26, 27, 30, 31	72	82.2	3.60
Ocala	1, 14, 15, 16	98	26, 27, 31	70	88.8		18, 22, 23, 24, 30	98	4, 5, 10	72	83.3	
Manatie		94	25, 31	76	84.0	7.80						
Chattahoochie	5	99	25	63		8.80	22	99	10	68		
Averages					83.9	7.57					83.2	4.55
TEXAS.												
Gilmer	15, 16, 17, 18	95	20	71	82.3	4.32						
Blue Branch	30	93	24	71	80.0	8.80	8	96	19, 28, 30	75	82.8	1.80
Lavacca	20	95	4	74	82.9	11.30	7	96	3, 4	76	82.0	5.10
Austin	30	93	5, 6	71	80.5	9.20	8	97	12, 17, 24, 31	75	83.2	1.14
Clinton	21, 28, 29, 30	94	5	74	82.4	9.35	9, 10, 26	94	17	74	84.1	4.90
Lockhart	1	94	25	71	81.5	12.00						
Averages					81.6	9.16					83.0	3.24
MISSISSIPPI.												
Grenada							23	100	9, 10	64	82.0	3.30
Paulding												
Brookhaven							16	95	8, 10	70	81.3	10.61
Near Brookhaven	3	94	23	70	82.0	4.90	6, 14	96	9	70	82.0	7.70
Natchez	11, 12, 14, 15	89	23, 25	70	82.8	2.38	23	90	10	71	78.1	4.78

Table showing the range of the thermometer, &c., for July and August—Continued.

States and stations.	July, 1869.						August, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MISSISSIPPI—Con'd												
Marion C. H	13	° 102	24, 25	° 66	° 80.5	*In.* 1.30	22, 23	° 102	1	° 68	° 82.7	*In.* 5.90
Averages					81.8	2.86					81.2	6.46
ARKANSAS.												
Helena							22, 23, 24	97	9	70	83.5	
TENNESSEE.												
Elizabethton	14, 15, 16	97	23	53	74.9	3.80	23	100	9	52	76.8	3.89
Tusculum College	15	94	23	62	77.9	1.00	23	95	10	60	79.4	1.00
Lookout Mountain	14, 15	93	23	64	79.0		23	97	7	65	82.5	
Austin	12, 13	94	22	56	78.3	1.95	23	102	9	56	81.1	3.47
Clarksville	15	91	22, 23	60	75.2	2.13	23	97	8	60	77.7	1.00
Trenton	5	95	23	59	78.5	7.00	23	101	10	60	81.3	5.70
Memphis	12, 14, 16	98	31	64	80.2	2.35	16, 23	98	8	65	81.8	3.26
Averages					77.7	3.04					80.1	3.05
KENTUCKY.												
Pine Grove	16	92	6, 31	60	75.4	5.63	22, 24, 27	96	7, 8	56	76.5	4.29
Lexington	13, 14, 15, 16	90	21, 22	60	75.8	4.55						
Louisville	15	96	22	53	76.6	3.39	24	99	9	53	78.3	2.73
Averages					75.9	4.52					77.4	3.51
OHIO.												
Steubenville	15, 16	91	6, 30, 31	59	75.4	5.78	21	93	7	52	76.0	1.45
Painesville	3, 10, 15	84	21, 30	55	68.5	6.49	20	87	6, 7	54	69.0	3.50
Gilmore	16	101	21	58	74.3	7.20	20, 21	98	1, 4	54	73.4	1.60
Milnersville	16	93	31	52	72.2	4.35	20, 23	90	7, 9	52	72.2	0.42
Cleveland	10	88	5, 21, 22	53	69.5	3.82	19	91	7	49	70.1	1.12
Wooster	14, 15	94	1, 23, 30, 31	58	74.4	4.60						
Smithville	15	95	29	51	73.0		20	98	31	53	73.9	
Gallipolis	15	94	6, 22	54	72.7	4.94						
Kelley's Island	10	87	21	60	73.4	1.39	19	90	7, 31	57	74.2	1.50
Sandusky	10, 15	88	21	58	71.9	5.52	20, 25	90	8	53	73.3	1.71
North Fairfield	3, 10, 14, 15	88	21, 22	56	71.6	4.17	19	88	7	54	72.6	3.50
Carson	14, 15	90	1, 5, 21, 31	60	72.7	3.63						
Gambier	15	86	21	59	71.8	9.37						
Westerville	14, 16	91	5	55	71.9	6.18	20, 25	91	31	50	71.9	2.22
North Bass Island	3	90	5	54	72.6	2.54	19	96	6, 7, 31	57	73.5	1.58
Marion	3, 10, 14, 15	89	21	56	70.7	7.53	21	91	18	40	71.8	3.08
Hillsboro	16	88	21, 29	57	74.0	3.34	19	91	7	53	74.1	0.82
Bowling Green	14	96	21	58	74.1	6.41	15, 19	98	6, 7, 31	54	75.5	0.93
Kenton	16	97	23	65	77.7	8.50	25	100	31	60	79.8	1.13
Urbana University	14	93	30, 31	56	72.8	6.53	25	92	7	55	73.9	1.01
Bethel	16	94	31	56	75.6	1.38	19, 24	95	31	54	79.5	0.50
Edgerton	10	91	21	52	73.5	4.97						
Jacksonburg	15, 16	92	21	56	74.2	2.85	24	96	9	56	77.4	2.52
Mt. Auburn Inst	17	96	5	64	80.0	4.52	26	99	7	59	80.3	1.46
Cincinnati	14, 16	95	22	64	80.9	5.36	21	95	9	63	81.8	1.20

Table showing the range of the thermometer, &c., for July and August—Continued.

States and stations.	July, 1869.						August, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall
OHIO—Continued.		°		°	°	*In.*		°		°	°	*In.*
College Hill	11,12,13 14,15,16	93	5, 30, 31	60	79.3	3.44	20, 21 22, 24	96	6, 9, 31	60	78.3	4.06
Averages					73.8	4.99					71.5	1.68
MICHIGAN.												
Monroe City	10	90	21	59	73.1	5.30	20	90	30	42	70.1	1.75
Alpena	10	71	1, 14	53	.....	5.84	19, 24	72	5	54	62.6	2.46
State Ag. College	10	91	22	54	70.4	5.77	19, 21	92	31	46	70.6	4.85
Litchfield	10	88	30	55	69.4	6.26	19	88	31	51	70.1	4.55
Coldwater	14, 25	86	30	50	68.8	3.69	24	90	7	44	69.7	3.75
Old Mission	2	88	11, 20	52	68.4	2.50	.....	.....	.....	.....	.....	.....
Grand Rapids	10	90	20	54	72.1	.....	.....	.....	.....	.....	.....	.....
Northport	10	83	5	48	65.4	3.13	24	92	6, 7, 31	50	64.8	3.39
Pleasanton	2	85	22	50	65.4	4.20	19, 24	90	7	46	64.3	3.55
Muskegon	9	90	22	58	73.4	2.50	.....	.....	.....	.....	.....	.....
Otsego	10	90	18, 29	54	69.8	.....	10	98	6, 8	54	67.4	.....
Copper Falls	1	79	4	38	60.6	1.47	19	80	7	37	65.4	1.78
Ontonagon	9, 15	86	10	52	66.6	.....	24	80	31	50	62.6	.....
Averages					68.6	4.07					66.8	3.26
INDIANA.												
Aurora	13, 14 15, 16	98	31	56	76.3	2.42	.....	.....	.....	.....	.....	.....
Vevay	16	93	30	59	75.8	0.90	23	95	8, 9	57	76.6	2.10
Mount Carmel	15	95	21	61	76.7	0.60	13, 23, 25	96	9	60	78.7	2.32
Muncie	15	92	30, 31	57	72.8	11.15	14	98	7	56	75.2	3.20
Spiceland	16	93	21	59	69.0	5.74	.....	.....	.....	.....	.....	.....
Laconia	15, 16	95	22, 30	62	77.2	2.32	23, 24	99	7	59	75.7	4.23
Columbia City	14	92	22	57	71.7	8.81	19, 24, 25	90	8	56	73.1	2.31
Knightstown	16	92	5	59	73.0	6.99	25	94	7, 8	58	74.5	4.17
Indianapolis	16	91	30	56	73.7	3.44	.....	.....	.....	.....	.....	.....
Bloomington	15, 16	89	30	60	74.0	5.12	23, 24	90	7	58	75.5	3.05
Near La Porte	3, 14	89	29	58	73.0	12, 10	20, 24, 27	91	7, 31	57	73.6	3.85
Rensselaer	14, 15	90	4, 20	60	73.8	10.60	24	93	31	55	74.6	3.15
Merom	13	94	5	60	75.7	3.20	24	96	7	58	77.2	1.90
Kentland	10	88	5	56	71.1	20.50	23	95	7	52	73.5	4.75
New Harmony	16	93	30	63	77.9	2.59	24	95	8	60	80.1	4.67
Harveysburg	15	94	21, 29, 31	60	76.6	4.55	23	96	31	58	77.6	2.70
Averages					74.3	6.32					75.8	3.26
ILLINOIS.												
Chicago	3	90	20, 21	60	73.4	3.26	24	95	8	62	73.1	1.32
Near Chicago	10	92	20, 29	57	72.9	.....	20	95	16	61	74.3	.....
Evanston	3, 10	87	20	58	70.4	3.15	19	89	5, 6	61	70.7	3.94
Marengo	3	86	21	50	68.4	2.28	24	91	30	51	69.4	4.60
Effingham	12	98	5	62	78.1	4.50	3	98	30, 31	62	80.2	2.75
King's Mills	10	86	4	57	70.6	2.88	24, 27	89	7	51	70.2	3.82
Louisville	16	95	5	60	77.7	6.10	23	100	7, 31	60	77.9	2.70
Golconda	2, 17	98	21	44	77.6	2.00	26	105	1	72	85.9	1.00
Belvidere	10, 24	85	21, 30	56	68.2	5.39	19	92	7	53	69.8	4.96
Sandwich	24	90	4, 20, 30	58	70.6	3.25	.....	.....	.....	.....	.....	.....

Table showing the range of the thermometer, &c., for July and August—Continued.

States and stations.	JULY, 1869.						AUGUST, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
ILLINOIS—Cont'd.		°		°	°	*In.*		°		°	°	*In.*
Ottawa	10	92	29	58	71.8	4.44	24	98	31	54	75.3	4.24
Pana	16	95	5	61	76.5	3.50	.....	.....	.....	.....	.....	.....
Winnebago	10	87	4, 21	56	67.5	2.91	24	91	7, 30, 31	52	70.5	4.22
Rochelle	10	90	20	58	71.2	.....	27	96	7	50	74.0	.....
Wyanet	3	89	21	53	71.1	6.86	24	93	8	50	72.8	3.37
Tiskilwa	10	92	29	54	71.1	.....	13, 23, 27	94	7	52	75.8	.....
Hennepin	24	88	5, 21	.....	71.0	.....	27	95	31	50	74.0	.....
Elmira	10	90	30	58	71.3	3.73	24	92	7, 31	57	73.5	7.01
Peoria	10	92	21	57	73.4	7.35	24	95	7, 30	61	76.4	3.39
Springfield	15, 16	92	4	56	76.6	.....	25	98	31	61	78.1	.....
Loami	16	92	5	61	75.9	6.50	25	96	7	58	77.8	0.50
Dubois	13	93	21, 29	58	80.8	4.42	22	98	7	62	80.7	3.57
South Pass	1, 16	94	21	62	78.0	.....	18	100	8, 31	62	80.5	.....
Galesburg	10	87	5, 20, 29	60	72.0	9.00	24	95	31	55	70.6	6.85
Manchester	13, 16	96	20	56	75.8	6.99	27	97	7, 8	58	78.7	1.86
Mount Sterling	10, 16	90	21	61	73.4	.....	20	96	8, 31	57	76.8	.....
Andalusia	3	88	5, 21, 22	58	72.1	.....	24	89	7	55	74.0	.....
Augusta	10	87	5, 21	63	74.4	7.77	24	92	31	55	76.3	6.60
Warsaw	10	90	5, 20, 21	62	74.6	8.42	24	95	31	60	77.6	6.71
Averages	.....	.....	.....	.....	69.4	499	.....	.....	.....	.....	75.3	3.86
WISCONSIN.												
Manitowoc	24	89	11, 21	56	66.9	3.54	19	92	31	50	66.6	4.77
Plymouth	10	88	20	52	69.0	2.30	19, 24	92	6, 31	47	67.0	3.70
Hingham	24	94	12, 20	55	69.7	.....	24	92	7	44	67.3	.....
Milwaukee	24	90	1, 21	51	68.8	2.76	24	93	7	48	67.0	3.70
Geneva	10	89	5, 12, 30	59	71.0	3.53	23	91	8	52	70.1	4.38
Waupaca	24	91	21	55	69.3	.....	19, 24	92	31	50	64.5	.....
Embarrass	10, 24	88	29	50	64.2	3.73	19	90	31	48	65.5	6.03
Rocky Run	10, 24	86	29	56	69.1	2.94	24	90	30, 31	52	73.5	5.06
Madison	10, 24	84	20	58	69.1	3.63	24	89	5	54	66.9	5.92
Edgerton	7	88	29	54	69.3	.....	19, 23, 24	92	8	55	70.5	5.90
Baraboo	10	90	29	52	68.9	2.50	24	94	7	48	69.3	4.13
New Lisbon	24	95	30	52	72.2	.....	19, 24	94	30, 31	50	68.8	.....
Bayfield	1, 9, 25	86	28	50	65.9	.....	.....	.....	.....	.....	.....	.....
Averages	.....	.....	.....	.....	68.7	3.12	.....	.....	.....	.....	68.0	4.84
MINNESOTA.												
Afton	2, 24	91	29	52	68.7	1.60	3, 18	87	31	52	67.7	7.30
St. Paul	24	90	4	56	69.7	1.67	12	84	17, 30	56	68.5	7.62
Minneapolis	2	92	19	52	68.5	2.95	3, 11	85	30	52	68.1	11.64
Sibley	24	91	29	47	66.3	3.19	4	87	30, 31	51	68.8	5.42
Koniska	21	90	4	50	65.7	1.40	4	81	17, 28, 29, 31,	50	64.9	5.75
New Ulm	24	92	4	55	71.3	2.90	.....	.....	.....	.....	.....	.....
Madelia	24	91	28	56	72.6	3.25	4, 18	94	16, 28	58	75.1	7.04
Averages	.....	.....	.....	.....	69.1	2.42	.....	.....	.....	.....	69.8	7.46
IOWA.												
Clinton	10	88	21, 29	55	70.7	6.50	24	95	8	54	72.6	8.45
Davenport	10, 24	84	21	59	70.4	11.46	.....	.....	.....	.....	.....	.....

Table showing the range of the thermometer, &c., for July and August—Continued.

States and stations.	July, 1869.						August, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
IOWA—Continued.		°		°	°	*In.*		°		°	°	*In.*
Waukon	9, 24	87	4, 20	56	68.6	.....	4, 23	91	6	52	69.1	.....
Dubuque	24	91	29	58	72.1	3.54	24	95	6	53	72.3	7.76
Monticello	10	88	30	50	71.8	8.31	19	90	7, 31	54	71.6	6.41
Bowen's Prairie	24	88	5	54	68.2	5.60	23	91	7	50	68.7	5.55
Fort Madison	9, 10	90	29	60	74.3	7.05	20, 23	93	31	52	76.0	5.91
Guttenberg	10, 24	90	21, 29, 30	50	68.1	.....	4, 24	92	8	48	69.2	.....
Mount Vernon	23, 24	88	4, 29	60	71.6	.....	27	92	31	51	71.8	.....
Iowa City	10	86	21, 29	52	70.9	7.42	24	93	8, 17	57	74.3	11.43
Independence	24	91	4, 20	58	71.1	7.95	19, 23, 24	92	31	55	72.6	8.15
Near Independence	14	95	21, 28	55	72.3	9.40	27	97	7	53	72.8	6.80
Waterloo	10	87	6	54	71.0	7.40	4	94	28	50	71.0	7.10
Vinton	24	92	20	60	72.0	4.70	4, 13, 24	93	6, 31	50	72.3	7.40
Rockford	2	86	4	54	71.1	.....	4	88	8	52	69.3	.....
Newton	.....	.....	.....	.....	.....	.....	23, 24, 27	92	7	54	72.4	8.95
Iowa Falls	24	92	4, 30	58	71.2	7.70	.....	.....	.....	.....	.....	.....
Algona	24	84	29	56	68.1	.....	4, 22, 23	88	31	52	69.0	.....
Mineral Ridge	24	87	5, 28	58	72.1	11.30	17, 23	99	20	54	72.7	7.90
Fontanelle	2, 23, 24	89	28	57	73.7	14.50	.....	.....	.....	.....	.....	.....
Rolfe	2, 8, 24	90	29	55	72.5	4.85	4	98	30	56	72.8	4.97
Grant City	23	95	28	56	73.8	6.00	3	98	30	56	75.1	8.52
Logan	10	87	29	51	68.8	8.90	5, 26	88	5	51	71.6	7.90
Woodbine	2	91	4, 5, 25, 28,	54	70.1	.....	4	94	30	54	73.6	.....
Averages	.....	.....	.....	.....	71.1	7.80	.....	.....	.....	.....	71.9	7.55
MISSOURI.												
St. Louis University	17	93	5, 21	63	77.5	2.26	23	95	31	61	79.6	4.79
Allenton	13, 15, 16	95	30	54	74.6	1.82	23	101	8	55	77.1	2.75
Hematite	16	94	22	61	77.8	4.55	23	96	9	63	79.7	7.10
Rolla	14, 16	90	21	61	74.8	4.00	27	93	7	62	78.0	1.97
Jefferson City	14	92	21	60	76.0	.....	24	96	31	60	76.0	.....
Keytesville	9	94	20, 21	62	75.4	7.55	.....	.....	.....	.....	.....	.....
Hermitage	6	92	20	58	74.0	5.25	27	96	8	59	77.3	1.04
Bolivar	16	93	21	65	78.6	3.10	23	95	8	66	81.8	2.81
Warrensburg	3, 16	92	5	62	80.8	3.01	26	100	7	62	80.4	4.35
Harrisonville	16	92	20	62	75.4	2.03	6, 24, 25, 26, 27	94	8, 29	62	77.1	3.85
St. Joseph	10, 13, 23	89	20	65	79.7	8.40	27	95	31	63	79.3	5.41
Oregon	2, 9	91	30	58	74.8	5.74	27	97	30	61	77.7	6.90
Averages	.....	.....	.....	.....	76.6	4.34	.....	.....	.....	.....	78.5	4.10
KANSAS.												
Atchison	1, 13	91	30	61	76.1	2.85	6, 26, 27	96	7, 30, 31	65	80.1	4.25
Leavenworth	16	100	26	55	75.5	9.00	6	103	30	63	78.9	3.41
Olatha	12	98	20	59	67.5	17.70	25	97	29	61	78.1	4.90
Paola	3, 9, 13, 15, 16	90	20	62	75.9	8.86	26, 27	96	29	63	78.2	7.90
Baxter Spring	17, 26	92	18, 29	72	81.4	4.60	24, 26	93	30	74	84.8	1.85
Lawrence	16	90	29, 30	55	72.2	5.05	6	94	30	58	75.3	6.46
Holton	13	96	20	63	78.3	.....	2, 6	98	31	62	80.7	.....
Le Roy	16	100	30	60	77.5	2.40	25	104	29	66	82.2	2.95
State Agr'l College	13	93	25	56	73.5	6.27	27	91	30	62	76.0	2.42

Table showing the range of the thermometer, &c., for July and August—Continued.

States and stations.	JULY, 1869.						AUGUST, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
KANSAS—Contin'd.		°		°	°	*In.*		°		°	°	*In.*
Council Grove	9, 13, 16, 24, 27	90	30	62	77.8	4.50	6	95	29	62	80.0	9.60
Crawfordville	12, 14	90	21	55	74.3	1.55						
Averages					75.5	6.98					79.4	4.86
NEBRASKA.												
Dakota	23, 24	94	5, 23	60	73.3		4	99	29	54	74.8	
Omaha Mission	2	93	28	60	[illegible]	4.27						
Elkhorn	2	90	28	57	72.0		5	93	17, 20	53	73.7	
De Soto	2, 23	91	28	56	71.3	8.60	5	95	20	56	73.6	6.25
Fontanelle	2	92	4, 28	60	62.2	9.40	5	97	7	61		
Bellevue	2	89	29	60	74.1	5.60	5	92	30	57	75.9	11.20
Glendale	2	92	25, 28, 29	56	73.3	7.50	5	94	29	53	75.2	8.00
Decatur	1	92	28	56	72.0	4.23						
Averages					81.5	6.60					74.6	8.48
UTAH TERRITORY.												
Coalville	25, 27	91	11	60	72.1		17	91	10	54	70.5	
G't Salt Lake City	22	93	18	62	73.0		2, 14	88	13, 17, 25, 26	65	76.7	
Averages					72.6						73.6	
CALIFORNIA.												
Monterey	13	80	9	50	65.7	0.01	5	80	24	45	61.8	0.00
Watsonville	12	84	8	58	70.0							
Vacaville	19, 25	98	8	59	75.8	0.05	9	98	12	56	73.4	0.00
Stony Point	14	97	6, 7	55	69.4	0.20						
Averages					70.2	0.09					67.6	0.00
MONTANA TERR'Y.												
Deer Lodge City	20, 29	92	6, 7	45	66.5	0.25	6	95	16, 13, 28	40	63.1	0.[illegible]
WASHINGTON TER.												
Port Angelos	31	69	7	55	60.2							

NOTES OF THE WEATHER FOR JULY, 1869.

Houlton, Me.—Very hazy 2d, 4th; slight frost 6th.

Williamsburg, Me.—Strawberries 8th; raspberries 25th; blueberries 29th.

West Waterville, Me.—Smoky 25th to 31st; one entirely clear day.

Gardiner, Me.—Month cold and dry; so little moisture in two years only—1844, 1.47 inches, and 1864, 0.59 inches; fair days, 24.

Standish, Me.—Most terrific thunder storm since 1818 on 8th.

Norway, Me.—Smoky 1st to 4th, and 25th to 31st; auroras 3d, 18th; very few thunder showers in July.

Cornish, Me.—Terrific thunder and hail-storm 8th. Struck seventeen times in both chimneys in one house, entering every room and killing two persons. One other person was killed and some cattle; and buildings, trees, rocks, &c., were hit.

Stratford, N. H.—July 7 degrees colder than last year; but few drying days.

Whitefield, N. H.—Auroras 3d, 17th; very smoky 3d, 31st; haying began 12th; "catching weather."

North Barnstead, N. H.—July ends with drouth, low wells, &c.

Goffstown Center, N. H.—July rather dry; showers light.

North Craftsbury, Vt.—A cool July, 8 degrees colder than in 1868.

Randolph, Vt.—Much smoky and cool weather; rain well distributed through the month.

West Charlotte, Vt.—Auroras, red, 2d, 20th; crimson 11th, 12th a. m. and p. m., 14th, 19th, 29th; ripe cherries 21st; cut winter wheat 31st.

Panton, Vt.—Aurora 13th; very heavy dew 28th.

New Bedford, Mass.—Chestnut blossoms 15th; catalpa 18th; altheas 27th.

Lunenburg, Mass.—July average mean temperature for thirty years, 70.86 degrees; for 1868, 75.07 degrees; for 1869, 70.19 degrees; ground dry at close.

Amherst, Mass.—Much smokiness through July.

Newport, R. I.—Month dry; good hay weather, well improved.

Waterbury, Ct.—Smoky or hazy 2d, 23d, 24th, 31st.

Colebrook, Ct.—A slight frost on low grounds 5th.

Moriches, N. Y.—Many and severe electric displays, doing much damage, and killing one woman in bed.

South Hartford, N. Y.—Month much cooler than average; no really hot day; not much rain, but cloudy and damp.

North Hammond, N. Y.—Cool, cloudy; many light showers.

Houseville, N. Y.—Auroras 3d, 18th; thunder showers on six days.

Leyden, N. Y.—Faint aurora 15th; rain-fall of 1868 to August 1st, 11.67 inches; this year, 21.57 inches; July, 1868, 2.20; 1869, 6.04 inches; mean temperature 9.75 degrees colder than in 1868.

Depauville, N. Y.—Auroras 3d, 13th, 18th; harvesting winter wheat 25th; July temperature 10.30 degrees below last year.

North Volney, N. Y.—Auroras 3d, 5th; July temperature 8.13 degrees below July, 1868.

Palermo, N Y.—Wettest and coldest summer in twenty years. They come in cycles of seven years, (1851, 1858, 1865;) so this is an exception.

Waterburg, N. Y.—Aurora 18th; a rainy, foggy month.

Himrods, N. Y.—Thunder showers frequent 13th to 17th, with high wind 17th, uprooting trees near Penn Yan, with hail 25th, destroying gardens in Dundee; all southwest to northeast.

Little Genesee, N. Y.—Very wet month, but no great flood.

Suspension Bridge, N. Y.—Most terrific thunder-storm 16th. For two hours intense lightning flashed on the wires across the bridge, and thundered immense masses of rock from the banks into the river below; no damage done.

Buffalo, N. Y.—Isabella grape bloomed 8th; two heavy thunder-storms 16th. Except a few days July was cool, dark, stormy; temperature 1.6 degrees lower than average of eleven years, and rain-fall 1.7 inches above July average of eleven years.

Newark, N. J.—A pleasant month; many hazy days; no storms; temperature only 1 degree below average of twenty-five Julys, (hottest, 1849, 76.84 degrees; coolest, 1859, 70.23 degrees;) rain about average.

Newton, N. J.—Many slight showers and hazy days in July.

New Germantown, N. J.—Thunder-storm and tornado 16th, prostrating peach orchards, forest trees, &c.

Newfield, N. J.—Wheat harvest 5th; oats 17th; dewberries ripe 10th; katydids 31st. First half of July dry, last half, copious rains.

Greenwich, N. J.—Peaches ripe 8th. Very little rain till 26th; greatest drought since 1864.

Vineland, N. J.—Violent thunder-storm 27th. Early in July dry, crops suffered, but at its close rain plenty.

Fallsington, Pa.—A cool July with many smoky days.

Plymouth Meeting, Pa.—Wheat harvest 7th; oats 22d.

Dyberry, Pa.—Mostly good weather for hay and rye harvest; streams low and some springs dry.

White Hall, Pa.—Severe gale 16th, scattered sheaves of grain, uprooted trees, damaged bridges and buildings, and blew down more than half the pears, apples, &c.

Factoryville, Pa.—Much haze or smoke and fog during July; temperature 3 degrees colder than in 1868, and 2 degrees colder than average of five years.

Reading, Pa.—Month hazy, showers light, air cool.

Carlisle, Pa.—Wheat cut on slate land 2d; oats 22d; chestnut blossoms 6th; corn tasselling 26th.

Fountain Dale, Pa.—July 4 degrees below that of 1868—neither heat, rain, nor humidity in excess.

Tioga, Pa.—Coldest July in thirteen years—much clover hay damaged.

Grampian Hills, Pa.—Chestnut blossoms 14th. Most of the month too wet to cultivate corn and make hay; clover injured.

Franklin, Pa.—Month cool and wet, with heavy thunder showers.

New Castle, Pa.—Wettest July since 1855; no severe storms, many days resembling Indian summer.

Milford, Del.—Locust heard 25th; katydid 31st. Very dry to 27th, but heavy dews saved vegetation.

Woodlawn, Md.—Smoky or vapory throughout July.

Hampton, Va.—Violent storm, with hail, 29th, tore a dwelling to pieces. The four weeks' ending 29th the hottest in twenty-two years; vegetation suffered from heat and drought, but recent rains revived it.

Zuni Station, Va.—Much smoky, hot weather throughout July, with drought and oppressive air.

Bacon's Castle, Va.—Aurora 15th and 16th. Till 21st very hot and dry, (seven days 100 degrees and more,) then mild and showery.

Lexington, Va.—Indian summer air up to 5th; blankets needed 21st; drought terrible 31st; fields look as in November, corn gone.

Lynchburg, Va.—Weather very dry; corn, &c., dried up.

Snowville, Va.—Hail-storm 2d. Very dry month; corn wilting.

Wytheville, Va.—Smoky 5th, 6th, 7th; fogs dense 8th, light 30th, 31st; violent thunder-storm 19th. Month generally dry.

Weston, W. Va.—Month extremely wet; corn could not be cultivated, and was abandoned to weeds.

Goldsboro', N. C.—Severe drought till 20th injured crops on uplands.

Mt. Olive, N. C.—First cotton bloom and green corn 1st. Drought killing oaks and lessening crops one-third. Cotton promising.

Oxford, N. C.—More cloudiness and less rain than ever had; corn injured.

Albemarle, N. C.—Slight rains have revived crops in the vicinity, but crops here still suffering.

Statesville, N. C.—On 14th, at 8 to 9 a. m., two or three reports, then a racket like wagons on stony ground. Probably an aerolite exploded. No jarring of the ground was felt.

Gowdysville, S. C.—Smoke or dry haze 4th to 10th; warmest weather in several years, 11th to 16th. Very little thunder this year.

Anderson C. H., S. C.—Very hot 26th ultimo to 16th instant; katydids heard 4th; cotton worm seen 14th.

Carlowville, Ala.—Thunder-storm with some hail 27th.

Moulton, Ala.—Warm and cloudy month; not one fair day; no storms or high winds; crops good.

Havana, Ala.—Lightning and thunder nearly every day, but very little rain; some fogs.

Jacksonville, Fla.—Lightning and thunder this month very severe; humid atmosphere made it seem hotter than usual, but temperature was two degrees below July average, and two inches less rain than usual.

Ocala, Fla.—Lightning and thunder every day in July.

Bellona Falls, Tex.—Rains and sudden changes of thermometer all July caused disease in men and animals and cotton plant.

Gilmer, Tex.—Month favorable for corn and cotton.

Blue Branch, Tex.—Continuous rain 4th, 5th, 6th. Colorado River seventy-five feet above low-water mark and nine and a half feet higher than ever known; damage in Bastrop county alone estimated at $1,500,000; thermometer stationary at 73 degrees and 74 degrees during the storm.

Lavacca, Tex.—Ripe figs 10th. Heavy rains and floods.

Austin, Tex.—Remarkable rain 4th, 5th, 6th, 7th, 9.1 inches; flood in Colorado river swept away crops, buildings, and people; here, none swept away. At San Antonio 14.5 inches of rain fell.

Lockhart, Tex.—Continuous rain 4th, 5th, 6th, and heavy showers 7th, with wind squalls from south and southwest, and lightning and thunder; floods unprecedented.

Memphis, Miss.—At 2 a. m. 1st, three distinct shocks earthquake; at 2.15 a. m. 26th, another shock.

Grenada, Miss.—From middle of June to middle of July severe drought; July hot till 16th; since then cool and showery.

Brookhaven, Miss.—Heavy rain; storm from northwest 8th; prostrated corn and timber; whippoorwill ceased its cry 28th.

Elizabethton, Tenn.—From 4th to 9th like Indian summer. July rains mostly showers with little electric display.

Clarksville, Tenn.—At 2.19 a. m. 2d, earthquake for a few seconds; another at 2:36 a. m. 26th of two or three seconds, both shaking windows; whitish haze in upper atmosphere 30th, 31st.

Trenton, Tenn.—Earthquakes, [date not understood.] From 21st to close, very dry, no dews, nights cool.

Austin, Tenn.—Very smoky 5th, 6th, 7th, 8th; heavy thunder 4th, 12th, 16th, 26th.

Pine Grove, Ky.—Very smoky 6th, 7th; fine farming weather at the close of the month.

Clinton, Ky.—Earthquake 2 a. m. 2d, rattled dishes and glasses; another 2 a. m. 22d, quite severe for five seconds, from southwest to northeast; yet another 2 a. m. 26th, ten seconds, slight rain with distant thunder at the time.

Gilmore, O.—Grasshoppers plenty, and potato-bugs, doing little damage, 19th; smoky upper air 30th, 31st.

No. Fairfield, O.—Showers, not ten minutes all day without thunder, 16th; incessant thunder and sheets of rain 28th. July very wet, drowned crops, muddy harvesting.

Westerville, O.—On 1st two large spots on the sun, one on each side of the equator; and two small ones, one on each hemisphere.

North Bass, O.—Hail size of peas 20th; injured grapes much.

Bowling Green, O.—From 1st to 11th very smoky. Many July showers but no long rains.

Kenton, O.—Three violent thunder-storms 16th, 19th, and 20th, 28th. A spring and summer of heavy rains and severe storms.

Urbana, O.—Average July temperature for 17 years 74.5 degrees; this year 1.75 degrees lower, and 7.73 degrees below July, 1868. Rain-fall greater than in any July in 17 years; nearly twice the average, and nearly four times that of July, 1868.

Jacksonburg, O.—Faint auroras 10th, 25th; incessant lightnings on evenings 13th, 15th, 16th. Miami river rose eight feet in 6 hours 19th; thunder-storm with large hail 28th.

Alpena, Mich.—Up to 10th weather uniform; air smoky.

Old Mission, Mich.—Red clover ready to cut 9th, wheat 31st.

Grand Rapids, Mich.—Growing weather, but too wet for harvesting.

Northport, Mich.—Smoky; the wettest and coldest season in twenty years—exactly the reverse of last year.

Otsego, Mich.—A rainy harvest, but wheat secured in good order by 31st.

Aurora, Ind.—Month remarkable for smoky atmosphere.

Vevay, Ind.—Linden blossoms 1st; smoke, with odor of burnt wood, changing to that of burnt straw, 4th to 8th; vegetation suffering from drought 24th; bowel complaints, many fatal, 26th; thunder and hail-storm 28th.

Mt. Carmel, Ind.—Five days of smokiness ended 8th.

Muncie, Ind—Greatest rain-fall in July since September, 1866, (when we had 11.72 inches,) but no damage except retarding corn.

Valparaiso, Ind.—Like Indian summer for several days up to 9th, also 22d, 23d, 30th, 31st. Rain-fall for July 11.25 inches.

Merom, Ind.—Wabash river twice over banks in July, destroying much corn on low lands.

Kentland, Ind.—More rain than in any month ever known here—generally thunder showers.

Marengo, Ill.—First eight days smoky; mean temperature 2.18 degrees colder than average of eight years, and 11.78 degrees colder than in 1868.

Belvidere, Ill.—Auroras 16th, 26th, 28th. Month wet and cool with an unusual amount of smoky weather.

Ottawa, Ill.—Rain, thunder-storms, and freshets.

Winnebago, Ill.—Temperature 4.52 degrees below average of twelve Julys, and 11.65 degrees below last July.

Tiskilwa, Ill.—A showery, thundery month, except last week.

Hennepin, Ill.—Smoky and considerably rainy month.

Springfield, Ill.—First part very smoky and very wet, last part good haying and harvesting.

Dubois, Ill.—Smoky 4th to 7th; katydids 17th. This July 3.176 degrees warmer than average of five Julys preceding.

South Pass, Ill.—Earthquake at 2.10 a. m. of 2d; rapid vibration for one second. Grapes rotted badly this month; general drought at close.

Galesburg, Ill.—Heavy rain 13th, causing greatest flood known here.

Mt. Sterling, Ill.—Thunder-storms on ten days; month 14.6 degrees colder than July, 1868.

Plymouth, Wis.—Average July temperature for five years 72 degrees.

Hingham, Wis.—Spring wheat heading 11th; oats 14th; cutting timothy and clover 15th; good haying 23d to 30th.

Embarrass, Wis.—Very light frost 29th. Month cold, wet, with much thunder and lightning.

Rocky Run, Wis.—Month of uniform low temperature and hazy atmosphere; sun, when visible, looked like burnished copper.

Baraboo, Wis.—A cool month; fruits plenty.

New Lisbon, Wis.—One clear and [illegible] rainy days in July.

St. Paul, Minn.—Of ten preceding [illegible] five have been cooler and only one had less rain, yet this month [illegible]ed wet and cool; on only one or two days was the air free from ha[illegible] smokiness.

Minneapolis, Minn.—Cutting barley 19th; hay gathered and spring wheat ripe 31st.

Sibley, Minn.—Dense smoke 3d to 7th; odor like illuminating gas.

Koniska, Minn.—Frost 28th, killing vines in some places. Coolest July in many years.

New Ulm, Minn.—Aurora 15th; new barley threshed the 30th.

Madelia, Minn.—From 3d to 9th very smoky atmosphere.

Clinton, Iowa.—An excessively wet month; think the gauge does not indicate it fully.

Waukon, Iowa.—Heaviest thunder-storm this year 24th. Coolest summer and largest rain-fall thus far in many years.

Monticello, Iowa.—A very wet month; eight days' rain in succession.

Iowa City, Iowa.—July like June, frequent rains.

Independence, Iowa.—Not a clear day, but some hazy sunshine.

Mineral Ridge, Iowa.—Dense smoke or fog 3d to 6th; thunder-storm with hail 19th.

Rolfe, Iowa.—Air very smoky 3d to 8th.

Fontanelle, Iowa.—Very smoky 3d to 10th and 25th to 31st, with eleven days of lightning and thunder.

Woodbine, Iowa.—Harvest began 19th; rainy until 20th.

Hematite, Mo.—Thunder-storm 3d; over 1.25 inches of rain fell in ten minutes; very hazy 4th to 7th; katydids 24th. Month cool, equable, pleasant, not one wholly clear day.

Rolla, Mo.—Nights cool with drenching dews; month 10 degrees colder than in 1868.

Jefferson City, Mo.—The river falling after a high, long rise 26th; grape rot disappearing; rotted grapes dry up and no new rot 31st.

Hermitage, Mo.—No hail or hard winds this month; temperature below that of July, 1868; maximum sixteen degrees, minimum ten degrees, and mean 9.8 lower.

Oregon, Mo.—Grasshoppers infested with parasites and leaving in great numbers 2d to 10th; thunder-storm succeeded by auroral light 12th; faint aurora 17th.

Burlington, Kansas.—No excessive heat; rains to mature early corn, and fine crop of hay; rain-fall 2.55 inches.

Olatha, Kansas.—Great rain 10th, 11th—overflowed gauge.

Paola, Kansas.—Great rain from north 10th; greatest freshet ever known in Paola creek.

Lawrence, Kansas.—Beautiful, comfortable month, 13.68 degrees colder than in 1868, and dampest month, thus far, in 1869.

Holton, Kansas.—Many showers, few heavy rains, good growing but bad harvesting weather.

Council Grove, Kansas.—Smoke like a shower of fog from northwest at 6 p. m. 3d, till p. m. 5th.

Crawfordville, Kansas.—Frequent heavy thunder-storms; on 25th one flooded the country.

Elkhorn, Neb.—Coldest July but one in twelve years; rains heavy and frequent, but cloudiness moderate.

De Soto, Neb.—Myriads of grasshoppers flying north 2d.

Bellevue, Neb.—More rain fell from 12th to 18th than ever known in same time.

Glendale, Neb.—Dense smoke from north 3d, 4th, 5th, 6th, 7th; rain every day 6th, 7th, 12th to 19th, (ten days.) A cold, wet month; harvest ten to fifteen days late; mean temperature ten degrees lower than July, 1868.

Coalville, Utah.—Locusts flying southeast 16th, southwest 20th, 23d, 24th; in immense swarms 30th, 31st.

Harrisburg, Utah.—Hottest month this year, 3 degrees warmer than ever known here; crops suffering from heat and drought.

Watsonville, Cal.—Summer cooler than usual, and consequently less sickness.

Stoney Point, Cal.—Barley harvest 1st; wheat began 6th; rain 8th, very unusual here.

Deer Lodge City, Mon. Ter.—Drought; streams never known as low; crops suffering; mining almost stopped.

Winnipeg, British N. A.—Smoky from 1st to 9th, also 23d, 24th, as from burning prairies.

NOTES OF THE WEATHER FOR AUGUST, 1869.

NOTE.—All the notices of the eclipse on 7th are omitted in these notes for lack of room, and transferred to the Smithsonian Institution for use there.

Lisbon, Me.—Fine aurora 6th; light frosts 6th, 7th, 8th, 22d, 31st.

Houlton, Me.—Frost cut some cucumber vines 27th. Month cold with frequent showers; no lightning.

Steuben, Me.—Frost and aurora 27th. Drought great.

Gardiner, Me.—Auroras 5th, 6th, 16th, 27th. Month very cold and very dry—3 degrees colder than average of thirty-three years, (66.98 degrees;) 1866 was one degree colder; in 1837, 63.43 degrees; in 1844, 63.81 degrees. But two Augusts of so little rain; in 1841, 1.08 inches, in 1868, 1.06.

Norway, Me.—Frost killing corn in some places 8th; harvesting wheat and rye 11th. Frost night of 31st killing some corn and potatoes. Much smoke and dry weather in August.

Cornishville, Me.—Aurora 6th. Average temperature of August for forty years 64.15 degrees.

Stratford, N. H.—August cloudy and 5 degrees colder than in 1868.

Whitefield, N. H.—Aurora 10th; cutting rye and oats 15th.

Goffstown Center, N. H.—Sharp frosts 6th, 7th, destroyed cranberries; Month dry, and springs low.

Craftsbury, Vt.—Light frost 6th; aurora 24th. August five degrees colder than in 1868, and seven degrees than in 1867.

Randolph, Vt.—Slight frost 6th. A cool month and summer.

Woodstock, Vt.—Slight frost 6th, 7th; flakes of snow seen on high lands 31st.

Near St. Albans, Vt.—A deluge with heavy thunder and incessant lightning 19th, 20th; stormed from Montreal to Richmond.

West Charlotte, Vt.—Crimson auroras 1st, 7th, 14th, 22d, 27th; early harvest apple ripe 16th; field corn roasting ears 30th.

Georgetown, Mass.—Mills stopping for want of water 8th; many meteors seen 9th, 10th; crickets 12th; aurora 24th.

West Newton, Mass.—The driest August in many years.

Mendon, Mass.—Ground dry; sandy soils suffering; wells low.

Lunenburg, Mass.—Month dry, and 1.47 degrees colder than average of thirty years.

Hinsdale, Mass.—Sharp frost 8th, and night of 31st.

Newport, R. I.—Mean temperature of three summer months—for 1864, 69.9 degrees; 1865, 70.2 degrees; 1866, 66.2 degrees; 1867, 65.6 degrees; 1868, 64.1 degrees; 1869, 67.5 degrees.

North Fairfield, Ct.—Slight frost on low ground 7th, 8th; streams and springs lower than for several years.

Moriches, N. Y.—Auroral displays 6th and 27th.

Hudson, N. Y.—Red aurora 10th; auroral clouds 27th.

Garrisons, N. Y.—Very dry; pastures and many streams dried up.

North Hammond, N. Y.—Auroras 28th, 39th; very bright 30th.

Leyden, N. Y.—At 9.30 p. m. 25th, a singular appearance followed the sun's pathway, somewhat resembling a rainbow, and was seen from Philadelphia to Canada, and from Massachusetts to Michigan—perhaps further. What was it?

Depauville, N. Y.—Auroras 5th, 6th, 10th, 15th; August 1.70 degrees colder than average of five years, and rather dry.

Palermo, N. Y.—Coldest August, except in 1862, in sixteen years. The summer 66.1 degrees; only 0.9 degrees below the average of sixteen years.

Waterburg, N. Y.—Auroras 6th, 24th, 27th.

Himrods, N. Y.—Auroras 5th, 10th, 24th.

Buffalo, N. Y.—Month one degree colder than average for eleven Augusts past.

Newark, N. J.—Month but 0.6 degrees below the average temperature of twenty-five Augusts, (70.92 degrees;) but drought was unusual, only three in twenty-six Augusts having less rain. The mean temperature of twenty-five summers is 70.80 degrees; this 70.30 degrees; the warmest, 1350, 72.96 degrees, and the coldest of the twenty-five, 1859, 68.12 degrees.

Rio Grande, N. J.—Very bright meteor west 24th; train remained visible about fifteen minutes; everything drying up.

New Germantown, N. J.—Auroras 6th, 24th, 27th; a meteor in northwest 24th; it descended vertically from height of 40 degrees and exploded at 10 degrees, leaving a column of smoke at its explosion about three diameters of the moon in length, which remained fifteen minutes.

Haddonfield, N. J.—Concord grapes ripe 16th; meteor 24th.

Newfield, N. J.—Meteor at 7.15 p. m. 24th—size of a star of the first magnitude; train, zigzag, remained about fifteen minutes. Auroras 24th, 27th. A dry month; temperature above average.

Greenwich, N. J.—Auroras 6th, 27th; bright red and blue meteor 24th, leaving luminous vapor—in all eight minutes in sight. Mean temperature only about 0.6 degrees below average, but a dry month.

Vineland, N. J.—Meteors 7th, 8th, and 24th; month very dry.

Hamlinton, Pa.—Frost 6th, 7th, and severe 8th; auroras 5th, 6th.

Philadelphia, Pa.—On 24th, at 7.25 p. m., a brilliant meteor shot from near *Ursa major* towards west, and when 30 degrees from horizon exploded, with brilliant coruscations from nucleus, leaving a cloud of vapor—in all, visible about ten minutes. Dryest August since 1854, when 0.918 inches of rain fell; average for last nineteen Augusts, 4.237 inches.

Plymouth Meeting, Pa.—From 5th to 28th very dry; brilliant meteor 24th.

Dyberry, Pa.—Slight frosts 6th, 8th—last killed buckwheat in some places; streams still very low.

White Hall, Pa.—Dryest August in fifteen years.

Factoryville, Pa.—Frosts 6th, 8th, and night of 31st; aurora 6th.

Ephrata, Pa.—Bright meteor 24th, burst like a rocket, scattering jets of light, and leaving a luminous train for about twelve minutes.

Carlisle, Pa.—Oats cut 1st; August dry, cool, and sunshiny.

Tioga, Pa.—Frosts 6th and 8th; coldest August day known here 6th.

Grampian Hills, Pa.—Frost 6th; first half of August dry and cool; last half showers.

Johnstown, Pa.—Conemaugh River lower than for many years.

Connellsville, Pa.—Bright meteor 24th, went northeast from Great Bear, disappeared half way to horizon, leaving a pale, cloudlike appearance behind for about two minutes; faint aurora 27th.

Woodlawn, Md.—Meteor 24th, from zenith in a northwest direction, exploded about 30 degrees above horizon, leaving a streak of light which remained twelve or fifteen minutes.

Emmittsburg, Md.—Meteor 24th, direction west-northwest, elevation 60 degrees or 70 degrees, moved slowly, and was very brilliant.

Bacon's Castle, Va.—Faint aurora 6th; mills stop grinding 12th; heavy, reviving rain 17th; large meteor 24th; summer very hot and dry; mean temperature 81.2 degrees.

Lexington, Va.—Frost 8th; drought excessive.

Wytheville, Va.—Frost 9th; katydids 13th; grapes shrivelled, and corn dried by drought 22d; reviving rain 28th.

Near Wytheville, Va.—Frost 9th and 10th; no rain of any consequence from July 19th to August 17th.

Albemarle N. C.—Streams low; springs drying up 22d; copious rain, but too late for crops 30th.

Asheville, N. C.—September 4th, no rain for six weeks.

Atlanta, Ga.—Very warm; crops suffer by drought.

Marietta, Ga.—On 10th counted thirty-six splendid meteors between 9.30 p. m. and 10.30 p. m. in about a quarter of the visible heavens—generally starting near the pole-star, passing near *Corona borealis*, and on toward *antares* in *Scorpio*.

Moulton, Ala.—Corn ripe 30th. Month hot and dry; but little wind.

Lavacca, Texas.—Northeast by north gale 16th, strong enough to lift a man off his feet; blew all night; hardest storm ever known here; the "Matagorda storm" of 1856 only excelled it in duration, lasting three days.

Brookhaven, Miss.—Cotton picking 23d; heaviest rain ever known here 27th; health of people never better.

Clarksville, Tenn.—Drought severe; pastures burned up; ponds and streams failing; few showers, and all very light.

Memphis, Tenn.—Brilliant meteor and many "shooting stars" 8th; first cotton in the city 11th; drought 20th; rain 24th, 28th.

Austin, Tenn.—The warmest day in many years 23d. The most destructive drought since 1854.

Pine Grove, Ky.—Grasshoppers and blister-flies numerous, and swamp blackbirds in great flocks feeding on them 26th; vegetables drying up 28th; copious rain 29th.

North Bass Island, O.—Aurora, beams, arch, and corona 6th.

Hillsboro, O.—No copious rain since July 8th; vegetation injured.

Bowling Green, O.—Auroras 6th, 24th. Too dry to sow grain.

Kenton, O.—Aurora 6th; many meteors; one very large 10th.

Urbana, O.—Fine aurora 27th. This month's mean temperature higher than any August in eighteen years; over two degrees above the mean of that period. August average of rain-fall for eighteen years, 3.73 inches; this month less than any August of the eighteen.

Jacksonburg, O.—Faint auroras 6th, 27th.

Alpena, Mich.—Cloudy or smoky all this summer 17th; excelsior oats just headed out 27th.

Northport, Mich.—Light frosts reported 29th, 30th, and fears of more.

Copper Falls, Mich.—Splendid aurora 6th, arches, streamers, clouds, and belts; terrific thunder-storm 18th and 19th.

Ontonagon, Mich.—Thunder-storm, deluge 18th; harmless frost 31st. A wet summer; Lake Superior fifteen inches higher than in several years.

Vevay, Ind.—Meteor of first magnitude 13th; drought to 16th.

Kentland, Ind.—Some harmless frost in places 31st.

Valparaiso, Ind.—Auroras 6th, 24th; very hazy early in month; brilliant meteor 24th, apparent diameter 8 inches.

Marengo, Ill.—Thunder-storm and hail 4th; diffuse aurora 6th.

Belvidere, Ill.—A diffuse bright aurora all night of 3d; Indian summer to 8th; a wet summer.

Winnebago, Ill.—This August, 0.89 degrees above mean of twelve years; summer 2.52 degrees below mean of twelve summers.

Rochelle, Ill.—Thunder-storm 20th; greatest fall of rain in many years; from 9 to 11.75 inches fell.

Dubois, Ill.—This month is 8.73 degrees above the August average of five years.

Plymouth, Wis.—Aurora, pale, arch 6th, all evening.

Hingham, Wis.—Wheat cutting 23d; oats 25th.

Geneva, Wis.—Wheat and oats harvest 6th; stacking 27th.

Embarrass, Wis.—Slight frost 5th; bright aurora 6th.

Rocky Run, Wis.—Diffuse aurora 6th. Much wet weather.

Baraboo, Wis.—Very bright aurora 6th; almost frost 31st.

New Lisbon, Wis.—Light frost 6th; severe, and ice 7th.

Afton, Minn.—Aurora 24th, and a broad, band-like trail of light for five minutes, not connected with the aurora.

Minneapolis, Minn.—Very heavy rains 6th, 26th; more rain this month than in any other single month.

Guttenberg, Iowa.—Fine weather for harvesting grain.

Rockford, Iowa.—Beautiful harvest weather, and stacking nearly done.

Algona, Iowa.—Brilliant aurora, 24th. Month closes cool and dry.

Oregon, Mo.—Great storm 21st, streams never higher; faint auroras 24th, 28th.

Paola, Kansas.—On 14th fearful lightning, thunder, rain, high water.

Council Grove, Kansas.—Showery 9th to 15th; promise of dry fall.

Dakota, Neb.—End of wheat harvest 4th; fine aurora 24th. A wet August; potato bugs plenty.

Elkhorn, Neb.—Frequent and heavy dews and rains. Summer the coldest and wettest in twelve years.

Fontanelle, Neb.—Last fortnight very wet; the season wet and cold, yet on 24th the heat in places was over 100 degrees.

Bellevue, Neb.—Thunder-storm 28th; rain poured down and overflowed gauge; six to seven inches must have fallen.

Glendale, Neb.—Heavy rains 19th, 20th, 21st, 24th.

Coalville, Utah Ter.—Immense flocks of locusts procreating 11th to 15th; flying north 22d, 23d; slight frost at Weber River 16th, 17th.

Deer Lodge City, Mont. Ter.—First snow fell on Powell's Peak (13,800 feet high) 20th. Severe frosts this month; the dryest August in twelve years; averaged 4.1 degrees warmer than last year.

MONTHLY REPORT

OF

THE DEPARTMENT OF AGRICULTURE,

FOR

OCTOBER, 1869.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1869.

MONTHLY REPORT.

DEPARTMENT OF AGRICULTURE, STATISTICAL DIVISION,
Washington, D. C., October 20, 1869.

SIR: I herewith report for publication a statement of the condition of the crops on the 1st instant, with tables of averages, and notes on the respective crops, together with extracts from the correspondence of the Department detailing experiments with seeds, &c.; letters from Idaho and Washington Territories; an announcement of the Cordova Exposition, Argentine Republic; tables of live stock receipts and shipments at Chicago; meteorological tables for the month of September; notes on the weather, &c.

J. R. DODGE,
Statistician.

Hon. HORACE CAPRON,
Commissioner.

CONDITION OF THE CROPS.

The great agricultural lesson of the season inculcates the necessity of draining and thorough culture. It is not an exaggeration to estimate the reduction this season, from the alternate drowning and scorching of farm crops, at two hundred millions of dollars. Reports from drought-parched regions declare the crops "in fair condition on lands well worked," and that the effect of the heat was "aggravated by want of cultivation as dry weather set in;" that on drained soils, properly cultivated, fine crops were obtained, while on wet or undrained lands, and fields neglected or half cultivated, a failure was imminent. The crop returns of Great Britain (where the early season was similar to ours) enforce the same lesson, though a far smaller proportion of British lands are undrained or poorly cultivated.

CORN.

The general apprehension of serious failure in the corn crop of the more northern States has been materially modified by the sunny weather in September, and exemption from killing frosts up to October 1st. Early frosts in some portions of the eastern and middle States checked ripening and left the frosted fields in an immature and damaged condition; but the injury is comparatively slight in extent and limited in area. As a whole, the crop has had an unusually favorable maturing season, resulting in a very gratifying amelioration of the prospect for a supply of this important staple; yet a full crop—which should not be less than 1,150,000 bushels—can by no means be expected. When the harvest is

over, and local estimates are completed, the aggregate will attest a moderate yield, yet an ample sufficiency for all the wants of the country.

West of the Missouri the corn crop is unusually large, the estimated increase in Kansas being 38 per cent.; in Nebraska, 33; Missouri, 7. These, with California, Texas, and Florida, are the only States in which the crop is in average condition. Aside from the difference in area cultivated, which is naturally increasing year by year, the comparison with an average crop is made as follows: Illinois, 87 per cent.; Indiana, 81; Ohio, 86; Michigan, 76; Wisconsin, 75; Minnesota, 90; Iowa, 94; Arkansas, 92; Tennessee, 68; Kentucky, 80; West Virginia, 85. In parts of the South the condition of this crop is worse than in the West; in Virginia, 64; North Carolina, 74; South Carolina, 54; Georgia, 80; Alabama, 90; Mississippi, 88; Louisiana, 90. In the eastern States the figures range from 64 in Maine to 96 in Massachusetts; in New York, 82; New Jersey, 77; Pennsylvania, 86; Delaware, 76.

WHEAT.

Had the spring wheat been equal to the winter, the whole crop would have been enormous. Throughout the South the yield is unusually large, and the quality excellent. Texas and Mississippi are somewhat less conspicuous sharers in this improvement than other States in that section. In Illinois, the counties reporting an increase equivalent to ten per cent. or more are almost without exception in the southern part of the State, below the fortieth parallel—the winter wheat region; those claiming eight-tenths of a crop or less are, with one or two exceptions, spring wheat counties. Indiana grows a larger proportion of winter wheat, and consequently has this year produced a much better average yield than Illinois. Many of the counties return high figures. Among those giving not less than eleven "tenths," are Owen, Johnson, Fayette, Franklin, Bartholomew, Brown, Daviess, Lawrence, Jennings, Ripley, Ohio, Jefferson, Washington, Dubois, Pike, Gibson, Spencer, and Harrison, compactly located in the south; Fountain, Warren, White, Cass, Clinton, Madison, Delaware, Blackford, Adams, and Wabash, in the central belt; and Lake, Porter, Kosciusco, Whitley, Noble, Lagrange, and Steuben, in the north.

Ohio, another winter wheat State, exhibits a remarkable increase in nearly all the wheat-growing counties, conspicuously in a belt of about two tiers of counties near the Ohio River, from Monroe and Washington in the east to Warren and Hamilton in the west, and in the central and northern sections, between Fairfield and Loraine, and Logan and Mahoning, while in the extreme northwest equally favorable results are shown in Ottawa, Lucas, Henry, Wood, and Putnam.

Wheat is quite variable in quality, much of the winter variety being superior, and some of it in the west injured by wet weather or lodging. Spring wheat did not generally mature so perfectly, and much of it in the northwest was injured in the shock or destroyed by floods. Complaints are made in some localities of disappointment in the yield in threshing.

COTTON.

The area of cotton cultivation was increased last spring fully sixteen per cent. More than a million of acres were added to the cultivated area. Fertilizers were liberally used in the Atlantic States, and improved implements were to some extent employed. These facts were

taken as sure indications of a large crop. As the season progressed, serious drawbacks appeared. It cannot be denied that the loss by drought has been severe in the Carolinas and Georgia, greatly reducing the yield on all upland soils of medium depth and quality, causing the blooms and young bolls to fall, stopping the growth of the plant, and forcing into too early maturity the more advanced bolls. In Arkansas and other portions of the southwest the plant was also injured by very hot weather in August. The caterpillar and boll-worm committed depredations in some sections, destroying here and there half the crop of a county; but their ravages were by no means general. Almost universally the later pickings will be greatly reduced in quantity, and the picking season will be over unusually early, except on plantations short of labor.

Detailed and complete estimates of the aggregate yield have not yet been calculated. There is no reason to believe, from an examination of the October reports, that the preliminary and conditional estimate heretofore made, of 2,750,000 bales—the only one made this season, newspaper reports to the contrary notwithstanding—can be exceeded. In the next report will be given a detailed summary of the yield, after final reports are received and carefully examined.

OATS.

Rarely has there been a better season for oats than the present, very few of the States returning a less increase than ten per cent., and some giving thirty or thirty-five per cent. The quality is generally superior. The Excelsior oats sent out by the Department have everywhere succeeded admirably, and have usually maintained their character as the heaviest grown in the United States. The grain distributed weighed fifty-one pounds to the bushel, and in its product the weight is maintained in a remarkable degree. The cool wet weather of the spring and early summer were favorable to this crop.

RYE.

This minor grain crop has scarcely held its own in Illinois, Iowa, Missouri, and some of the southern States, but has yielded abundantly upon an increased area in most of the States, particularly those upon the Atlantic slope.

BARLEY.

An attempt has been made, with a fair show of success, to enlarge the production of this grain, and terminate the scandal of its importation. The increase is estimated at 14 per cent. in Indiana, 11 in Ohio, 9 in Michigan, 10 in Wisconsin, 26 in Minnesota, 7 in Iowa, 20 in Nebraska, 28 in Kansas, 22 in Missouri, 37 in Kentucky, 7 in Pennsylvania, 20 in New York, and 14 in New England. The quality is generally good.

BUCKWHEAT.

This crop is less than an average, except in the New England States and in the northwestern.

POTATOES.

The season has been too dry for either kind of potatoes in the South and on the Atlantic coast to New York. New England generally has a good crop, and it is unusually good in the West, with the exception of Minnesota. The product of sweet potatoes is manifestly decreased.

TOBACCO.

The condition of this crop is not favorable to a large production. About two-thirds of a crop is expected in Maryland and Virginia, and not exceeding nine-tenths in Kentucky and other portions of the West.

SORGHUM.

The condition of sorghum is comparatively low in most of the States. The moisture and coolness of the early part of the season were unfavorable to growth and to the development of the saccharine element in the plant.

FATTENING CATTLE.

A slight increase is reported in the aggregate numbers of fattening cattle, as well as in their average condition. Some of the States fail to maintain a full average, among which are New York, New Jersey, Kentucky, and Illinois.

Table showing the condition of the crops, &c., on the 1st day of October, 1869.

STATES.	WHEAT		OATS.		RYE.		BARLEY.		PEAS.		BEANS.—Average condition October 1.
	Product compared with last year.	Average quality compared with last year.	Product compared with last year.	Average quality compared with last year.	Product compared with last year.	Average quality compared with last year.	Product compared with last year.	Average quality compared with last year.	Acreage compared with last year.	Average condition October 1.	
Maine	13	11.2	13	11.3	11.3	11	12	11.2	10.6	11	10.6
New Hampshire	12.5	10.6	13.5	11.5	11.1	10.1	12	11	10.2	10.2	10.6
Vermont	11.3	10.4	12.5	10.4	11	10.7	11.2	10.8	10.4	10.1	8.8
Massachusetts	11.3	11	12.1	11.2	10.5	10.6	10.5	10.3	10	9.2	9.7
Rhode Island	.....	.....	10.5	10.5	10	10	11	11	10	10	10
Connecticut	10.3	11	13	12	10.6	12	11	11	11	10	9.6
New York	11.5	10.8	12.5	11	9.8	10.1	12	10.4	10.5	10.1	9.6
New Jersey	11.5	10.6	12	11	11.1	11	.....	.....	.....	.....	8.9
Pennsylvania	11.6	10.5	12.5	11	10	10.3	10.7	10.2	9.4	9.8	8.8
Delaware	12	10.8	12	11.5	11	11	12	11	10	10	9.3
Maryland	11.8	11	12	10.8	9.6	9.9	10.5	10.5	9.5	9	8.1
Virginia	12.5	10.9	10.4	10.6	10.8	10.2	10	10	9.5	8	7.3
North Carolina	13	11	10.7	10.3	10.3	10.2	9	10.1	8.9	6.5	6.4
South Carolina	12	10.8	11.2	10.9	10	10.1	.....	.....	8.3	4.8	3.6
Georgia	11.8	10.7	10.6	10.4	10.5	10.2	10.5	10.3	7.7	6	6.6
Florida	.....	.....	10.3	10	9	9.5	.....	.....	9.2	8.5	9
Alabama	11.2	10.7	10	10.2	10.2	9.8	11.2	10	9.1	7.6	9.2
Mississippi	9.8	10.4	11	10.5	10	10	10	10	9.3	9	10.2
Louisiana	.....	.....	.....	.....	.....	.....	.....	.....	10.3	9.8	.....
Texas	9.8	9.5	10.7	10	10.3	10.1	10	10	11.6	10.1	10.6
Arkansas	11.7	11.6	11.5	10.9	.....	.....	.....	.....	9.1	7.9	9.8
Tennessee	11	10.5	10.2	10.3	10.1	10.4	10.3	10.5	9.1	8.8	7.5
West Virginia	11.5	10.7	12	10.3	11.1	10.4	.....	.....	10.2	10	10.2
Kentucky	12	12.1	9.7	9.8	11.4	10.3	13.7	10.1	10	9.8	9.5
Missouri	12	10.5	13	10.4	10.1	9.6	12.2	9.9	9.7	9.7	10
Illinois	10.2	9.5	11	10.6	9.7	9.6	9.8	8.6	9.5	9.6	9.9
Indiana	11.5	10.6	11	10.8	10.7	10	11.4	10.2	9.8	10.2	10.4
Ohio	12	10.5	12	10.5	10.5	10.1	11.1	10.2	10.2	10	10.6
Michigan	10.5	9.2	11.5	11	10.4	10.1	10.9	10.6	10.8	10.5	10.4
Wisconsin	10.6	10.3	12.5	11	10	10	11	10.2	10.6	9.8	10.2
Minnesota	12.5	11.1	12.5	10.2	10.7	10.5	12.6	10.3	10	9.7	10.8
Iowa	10.5	7.7	11	10.1	9.7	9	10.7	9	10	9.4	9.5
Kansas	13.7	11.3	14.9	11.2	12.2	10.5	12.8	10.8	11.8	10.3	10.8
Nebraska	11.6	9.2	12.5	10.1	10.7	10.5	12	8.8	10.2	9.6	9.8
California	10.2	8.5	9.7	9	10.6	9.8	11.7	9.4	9.7	9.8	9.8

Table showing the condition of the crops, &c.—Continued.

STATES.	BUCKWHEAT.—Average condition October 1.	CORN.—Average condition October 1.	POTATOES, (*Solanum tuberosum.*)—Average condition October 1.	POTATOES, (*Batatus edulis,*) sweet.—Average condition October 1.	TOBACCO.—Average condition October 1.	SORGHUM.—Average condition October 1.	SUGAR CANE, (not sorghum.)—Average condition October 1.	COTTON.—Average condition October 1.	OLD WHEAT.—Average amount of old wheat on hand compared with last year.	FATTENING CATTLE. Average number of fattening cattle compared with last year.	FATTENING CATTLE. Average condition October 1, compared with last year.
Maine	10.1	6.4	10.2	.....	.....	.....	.....	.....	9.8	10	9.6
New Hampshire	11	8.3	10	.....	.....	.....	.....	.....	9.7	11	9.6
Vermont	11.1	7.3	11.1	.....	.....	.....	.....	.....	10.1	10.5	11.4
Massachusetts	8.5	9.2	9.6	.....	10.3	.....	.....	.....	10.5	10.1	10.1
Rhode Island	.....	9	11	.....	.....	.....	.....	.....	.....	10	10
Connecticut	10.3	8.6	11.6	.....	11	9.5	.....	.....	9	9.6	9.6
New York	9.5	8.2	9.5	.....	9.5	.....	.....	.....	10.6	9.8	10.6
New Jersey	7.1	7.7	11.4	9.1	.....	8.7	.....	.....	10.1	9.8	9.5
Pennsylvania	9.1	8.6	10.6	9.8	9.8	9.4	.....	.....	9.7	10	10.3
Delaware	6.6	7.6	7	7.3	.....	6.5	.....	.....	10.6	9.3	10
Maryland	7.4	6.5	8	7.6	6.8	7	.....	.....	10.1	10	9.1
Virginia	5.4	6.4	7.3	7.1	6.3	6.4	.....	8.2	9.5	10	9.1
North Carolina	7.3	7.4	8.4	7	8.7	7.7	.....	7.5	9.2	10.1	10.1
South Carolina	.....	5.4	7.2	5.5	.....	7	8	7.1	9.3	9	8.8
Georgia	.....	8	7.6	5.7	8.5	7.5	7.1	7.8	10.3	10.1	9.2
Florida	.....	12.1	10.5	9 5	10	.....	7.2	7.9	.....	9.4	10.5
Alabama	.....	9	9.2	8	9	8.6	9.2	9	10.2	9.8	8.8
Mississippi	.....	8.8	9.2	8.9	9	8.8	10	9.4	10	10.1	10.1
Louisiana	.....	9	.....	9.5	9	.....	9.7	8.5	.....	11.3	10
Texas	.....	11.6	11	9.9	10	10	10	8.6	6.4	9.8	10.5
Arkansas	.....	9.4	10.2	9.3	10.5	10.7	.....	8.7	11.3	11	9.8
Tennessee	6.6	6.8	7.2	7.2	8.4	7.8	.....	7.2	9.2	10	9.2
West Virginia	8.7	8.5	9.4	9.6	9.6	9.6	.....	.....	10.1	11.1	10.4
Kentucky	9	8	9.5	9.2	9.1	9.5	.....	8.5	9.3	9.5	9.8
Missouri	9.9	10.7	12.3	9.9	10	9.2	.....	8.7	8.9	10.4	10.9
Illinois	9.6	8.7	11.9	9.2	9.5	9	.....	.....	8.8	9.4	10.4
Indiana	9.4	8.1	11.7	10	9.7	9	.....	.....	9.5	9.9	10.3
Ohio	9.7	8.2	11.5	9.7	9.1	9	.....	.....	8.6	10	10.7
Michigan	10.3	7.6	11.6	10.1	9.5	9	.....	.....	10.2	10.5	10.9
Wisconsin	10.6	7.5	10.6	9	9.7	7.7	.....	.....	8.2	10.2	11.2
Minnesota	10.1	9	9	.....	11.5	8.2	.....	.....	9.2	10.5	10.8
Iowa	10	9.4	11.4	10	8.6	9	.....	.....	9.4	10.6	10.7
Kansas	11.8	13.8	13.8	11.2	10.3	11.6	.....	.....	9	12.4	10.5
Nebraska	10.4	13.3	11.4	7.5	10	10.6	.....	.....	9.1	12	10.4
California	10.6	10.2	10.4	10.3	10	10	.....	.....	10	9.6	10.1

NOTES ON THE CROPS.

CORN.

Androscoggin County, Me.—Corn will not average half a crop.

Oxford County, Me.—Corn about one-half an average crop.

York County, Me.—Corn is ripening well.

Coos County, N. H.—Corn rather light.

Belknap County N. H.—There was a prospect of a total failure of the corn crop, but the warm weather of the month has improved it some.

Merrimac County, N. H.—Corn was not much damaged by the frosts of the latter part of September.

Addison County, Vt.—Corn double the crop expected in August.

Caledonia County, Vt.—Not more than two-thirds of a crop of corn.

Grand Isle County, Vt.—Corn much injured by the cold and wet weather of May and June, and by the ravages of cut-worms.

Orleans County, Vt.—If the weather continues favorable we shall have more than half an average crop of good corn.

Alleghany County, N. Y.—A very fine September; corn has ripened much better than was expected.

Chautauqua County, N. Y.—Corn is about half a crop.

Erie County N. Y.—Corn a fair crop except on low lands.

Monroe County, N. Y.—If the weather continues fine, as at present, corn may be marked ten instead of eight.

Niagara County, N. Y.—A very warm September has had a magic effect on the corn crop; I think we shall harvest about three-fourths of a crop, of very good quality.

Onondaga County, N. Y.—The fall is very favorable for corn, which is now about out of danger from frosts.

Ontario County, N. Y.—The first frost, October 6, injured standing corn.

Suffolk County, N. Y.—The dry weather of August and the early part of September very materially affected the corn crop.

Tompkins County, N. Y.—Corn nearly an average crop.

Westchester County, N. Y.—The corn crop fully as good as it was last year.

Yates County, N. Y.—Corn is ripe and being harvested—a full crop.

Essex County, N. J.—The long-continued drought of August and September has cut short the corn crop.

Gloucester County, N. J.—Corn greatly injured by the drought.

Ocean County, N. J.—The crop has been lessened by the drought nearly fifteen per cent.—a better result than was anticipated. The low, moist lands have increased the average product.

Sussex County, N. J.—The corn crop has been very materially affected by the drought.

Alleghany County, Pa.—We have a corn crop unparalleled in this part of the State.

Beaver County, Pa.—Corn on the hills an average crop; that on flat lands was drowned by the summer rains. In some parts of the county a good crop.

Clearfield County, Pa.—Corn is a failure on account of the drought.

Cumberland County, Pa.—Will average about three-fourths of a crop.

Delaware County, Pa.—Long-continued dry weather has shortened what early in the season was a very promising crop of corn.

Elk County, Pa.—Severe frosts early in September did great damage to corn.

Indiana County, Pa.—The county has never before produced so small a crop of corn; not half a crop compared with last year.

Luzerne County, Pa.—Much soft corn, but more good than was expected.

Montgomery County, Pa.—The corn crop exceeds that of last year by about two-tenths

Perry County, Pa.—The dry weather has lessened the anticipated yield of corn.

Baltimore County, Md.—The crop will fall short, compared with an average, about thirty per cent.

Kent County, Md.—Crop short on account of drought.

Prince George County, Md.—The drought from July 27 to August 28 ruined the corn crop.

St. Mary's County, Md.—Corn is irreparably ruined by the drought on light lands, except where planted early; in all cases cut short to some extent.

Washington County, Md.—Corn crop much better than was expected in this county.

Middlesex County, Va.—There will not be more than a fourth of a crop of corn.

Nelson County, Va.—The protracted and unprecedented drought has told heavily upon the corn crop. The effect of the drought has been aggravated by the badly tilled condition of the crop when the drought set in as early as June 20.

Northumberland County, Va.—The corn crop is much more affected by the drought than was anticipated last month. There will be less than half a crop.

Rockbridge County, Va.—The rains early in September somewhat improved corn. Another correspondent says, the corn crop will be one-tenth to one-fifth of an average.

Smyth County, Va.—In many fields corn is an entire failure; others will yield from five tenths to eight-tenths of the usual crop.

Surry County, Va.—Corn can hardly reach three-fourths of a crop.

Wythe County, Va.—Corn about half a crop; somewhat injured by frosts.

Camden County, N. C.—The corn crop is good.

Chowan County, N. C.—About half a crop of corn.

Jackson County, N. C.—Corn injured by drought.

Franklin County, N. C.—All crops have suffered from the drought, but corn most; there will be about one-half of an average crop.

Mecklenburg County, N. C.—Corn will prove a fair crop on lands well worked.

Pasquotank County, N. C.—Notwithstanding the drought corn will yield two-thirds of the average crop.

Rockingham County, N. C.—We expect about half an average crop of corn.

Wayne County, N. C.—Corn cut off by drought about fifty per cent.

Abbeville County, S. C.—The corn crop will be under one-half an average crop.

Georgetown County, S. C.—Corn less than a half crop.

Union County, S. C.—Upland corn very short, owing to a very dry summer.

York County, S. C.—No corn except on bottom lands, where it is very fair.

Duval County, Fla.—Corn crop very good.

Yalabusha County, Miss.—Corn crop will fall one-fourth to one-third below the average.

Burleson County, Texas.—Corn harvest ended well.

Lavaca County, Texas.—Corn crop badly damaged by the incessant rains.

Craighead County, Ark.—Corn much injured by the drought, which lasted eight weeks.

Phillips County, Ark.—The corn crop will be considerably less than that of 1868, on account of the protracted drought.

Pulaski County, Ark.—Corn is not quite up to the average.

Campbell County, Tenn.—Corn crop never so short in this county.

Carter County, Tenn.—Corn crop not injured by drought except on light soils.

Fayette County, Tenn.—The early corn is a fair average, but the excessive drought has caused almost a total failure in that sown later.

Gibson County, Tenn.—Corn planted late on account of a wet and backward spring; a falling off of about one-tenth in amount planted.

Sevier County, Tenn.—Corn light.

Smith County, Tenn.—Scarcely a half crop of corn in this county; the quality, however, is good.

Berkley County, West Va.—In some parts of the county the corn crop will be reduced about one-fourth on account of drought.

Kanawha County, West Va.—Crop short on account of drought.

Monongalia County, West Va.—Corn crop considerably over an average.

Monroe County, West Va.—Crop cut short by the dry weather.

Scott County, Ky.—Corn crop shorter than in any season in the last seven or eight years.

Atchison County, Mo.—Corn crop above an average.

Trimble County, Mo.—Corn crop rather inferior.

De Kalb County, Mo.—Corn is ripening well, but will not be an average crop; on bottom lands scarcely worth harvesting.

Macon County, Mo.—Corn crop doing well; it will fall short of the average about one-fourth.

Boone County, Ill.—Corn planted early will be of fair quality, but the yield small; that planted later is poorer in quality, and that on wet ground worthless.

Champaign County, Ill.—Fine growing weather for corn, and a fair average crop anticipated.

Clay County, Ill.—Corn an average yield.

Lee County, Ill.—Corn is ripening finely, and the yield will be larger than anticipated.

Hancock County, Ill.—Only about half the usual yield is expected. The condition of some corn is as good as last year, while there is much that does not amount to anything.

Lawrence County, Ill.—Corn very poor, not more than a half a crop.

Sangamon County, Ill.—A full average crop of good, sound corn.

Stephenson County, Ill.—Much of the corn will be far better than we had reason to hope. Three-fourths of it will yield a full crop; perhaps better than last year.

Whiteside County, Ill.—No frost yet sufficient to damage corn; most of it safe; expect about two-thirds of a crop, but sound and of good quality.

Winnebago County, Ill.—The weather of September was very favor-

able for corn. The crop as a whole will be much better than was expected at the beginning of the month.

Kosciusko County, Ind.—The quality of corn will be good; quantity less than one-half an average crop.

La Grange County, Ind.—Not more than about half a crop of corn in the county. On dry soil where it could be properly cultivated, it is good—some fields extra good; but on all low, wet lands it is good for nothing.

Noble County, Ind.—The poorest crop for several years.

Parke County, Ind.—The favorable weather of August greatly improved the prospects for corn.

St. Joseph County, Ind.—Corn cannot make more than one-half a crop.

Steuben County, Ind.—The season has been unfavorable for corn.

Union County, Ind.—Corn greatly injured by grub-worm and drought.

Warren County, Ind.—The severe frost of September 28 damaged the late corn.

Athens County, Ohio.—The crop will be small, having sustained great injury by drought.

Holmes County, Ohio.—Corn injured by frost.

Mercer County, Ohio.—The drought of August and September injured corn in this county.

Cass County, Mich.—Very fine weather for a month past has had a magical effect on corn, maturing the ears very rapidly.

Macomb County, Mich.—The weather of September very favorable for corn.

Van Buren County, Mich.—Corn will not average more than half a crop.

Green County, Wis.—A severe frost on 25th of September injured corn materially. This will be the poorest corn crop for years.

Portage County, Wis.—Corn has very much improved within the last month.

Richland County, Wis.—Corn generally out of the way of frost.

Walworth County, Wis.—The yield will not vary much from six-tenths of last year's crop.

Freeborn County, Minn.—Corn has been considerably injured by the frost of September 27.

Olmsted County, Minn.—Recent favorable weather has improved the prospect for corn; crop as promising as at corresponding time last year.

Cherokee County, Iowa.—Corn better than usual.

Benton County, Iowa.—Corn a full crop.

Johnson County, Iowa.—Crop coming on finely; the late autumn and absence of frost have done the work.

Montgomery County, Iowa.—Corn blades injured by frost.

Leavenworth County, Kansas.—Corn light; not one farmer in ten cultivated crop properly on account of excessive rains in June and July.

Shawnee County, Kansas.—The promise of corn is more than double the yield of last year.

Hall County, Neb.—Corn, although late, will ripen fully, since frost has not as yet damaged it.

COTTON.

Beaufort County, N. C.—Cotton much damaged by severe drought, which still prevails.

Chowan County, N. C.—Cotton injured by the drought and the cold weather early in August, which caused the bolls to drop off.

Edgecomb County, N. C.—The drought has materially injured the crop of cotton.

Franklin County, N. C.—The increased acreage of cotton will make the product nearly or quite as large as last year notwithstanding damage by drought.

Greene County, N. C.—Since September report cotton has not improved as most farmers expected, the rust which had just at that time made its appearance having caused part of the August and nearly all of the September blooms to drop off. Two-thirds of a crop is all that can safely be calculated upon.

Mecklenburg County, N. C.—Cotton was extra fine up to August 1, better than for many years; the long drought, however, has reduced the yield at least one-half.

Pasquotank County, N. C.—Cotton about two-thirds of the average crop, on account of the drought.

Sampson County, N. C.—There is a larger acreage, but very considerably less product per acre.

Stanley County, N. C.—The extraordinary drought in August and September has materially shortened the cotton crop; what there is, however, is remarkable for fairness of tint; the bolls open freely, the foliage remaining green.

Abbeville County, S. C.—Cotton crop about one-half an average.

Newberry County, S. C.—Drought continued up to October 1, which has cut off cotton materially.

Orangeburgh County, S. C.—Cotton injured by rust and the continued drought.

Richland County, S. C.—There will be more cotton raised than last year, but the acreage is larger.

Spartanburg County, S. C.—Cotton did not grow after the 25th of July, losing at least two months' growth. The drought has forced open the bolls unusually early.

Union County, S. C.—Cotton "sorry." I think our county cannot make more than one-half a crop.

York County, S. C.—Cotton very much injured by the drought.

Carroll County, Ga.—Cotton will not average one-half the usual crop.

Chattahoochee County, Ga.—Not more than half a crop of cotton is expected.

Clayton County, Ga.—Two months ago the prospect for a good cotton crop was the best we have had for many years, but owing to the continued dry weather there has been such a falling off, that the crop will prove to be considerably under an average.

Columbia County, Ga.—The drought reported in my last still continues, causing cotton to shed its entire top crop. Not one farmer in ten will make the seed planted.

Crawford County, Ga.—Drought and rust continued until September 26; consequently no cotton was made in August, our principal cotton month.

Glynn County, Ga.—The caterpillar appeared August 15, destroying some fields entirely. The crop will average about seven-tenths.

Liberty County, Ga.—The cotton caterpillar made its appearance August 3. Its ravages have been extensive and destructive, diminishing the prospect of a yield from one-third to one-half.

Macon County, Ga.—The amount of cotton gathered up to this date exceeds that of any previous year, but it was pushed forward by fertilizers, and there remains to be gathered only a small portion of the crop.

Pulaski County, Ga.—On an average cotton is cut off one-half in this county; a larger area than last year planted.

Putnam County, Ga.—On account of increased acreage, the cotton crop will not be three hundred bags short of that of 1868. No late cotton.

Spalding County, Ga.—There will be a greater yield of cotton than was anticipated thirty days ago.

Schley County, Ga.—Cotton damaged by rains, rust, and worms.

Troup County, Ga.—Cotton a failure owing to the drought of July and August. The dry season and the fertilizers used have caused the crop to open prematurely. About half a crop.

Walton County, Ga.—The yield of cotton per acre will not equal that of last year, though, perhaps, the increased acreage may bring the crop up to last year in quantity—deficient in length of staple.

Duval County, Fla.—Cotton injured by the caterpillar.

Jackson County, Fla.—The worm and rust stopped the growth and development of the cotton plant about the middle of September. The fruit then formed has rapidly matured under a genial sun without rain, and it is anticipated that by the middle of October the whole crop of cotton in this county will be ready for market.

Leon County, Fla.—The caterpillar has eaten out about one-fourth of the cotton. The worm has acted strangely this season, coming early and in considerable force on every plantation, but disappearing without doing the damage anticipated. This year has taught us that we know very little of the habits of the worm.

Putnam County, Fla.—The caterpillar has caused a loss of fifty per cent. of the cotton crop, about the same as last year.

Clarke County, Ala.—Fertilized cotton on worn land has made an increase in product of two hundred per cent. I used the soluble Pacific guano, one hundred, two hundred, and four hundred pounds to the acre. The four hundred pounds will make a yield of one thousand five hundred pounds of seed cotton to the acre, the other quantities in proportion.

Dallas County, Ala.—All crops of cotton except the later ones have been somewhat damaged by the caterpillar; those planted subsequent to April 20 have been injured fully twenty per cent.

Greene County, Ala.—Drought has materially injured the cotton crop, causing the late crop to "shed off."

Lee County, Ala.—The early crop will about equal the entire crop of last year. The late crop is worth almost nothing.

Marshall County, Ala.—About one-half a crop.

Perry County, Ala.—Cotton was hastened to maturity by the hot weather of August, and is now nearly all opened; never before matured as early.

Bolivar County, Miss.—Crop injured materially by the August drought.

Lauderdale County, Miss.—Fully one-half of the cotton crop will be surplus, and will not be sold at present as a cash article.

Lawrence County, Miss.—Not half a crop.

Warren County, Miss.—Crop injured by the drought.

Yalabusha County, Miss.—The rust is affecting the cotton so badly that an opinion as to the crop can scarcely at this time be formed. Another correspondent says: "Cotton sixty per cent. better than last year."

East Feliciana Parish, La.—Owning mainly to rust, the cotton crop has fallen off very much lately. The army worm will do some damage.

St. Helena Parish, La.—The top crops of cotton have failed entirely;

consequently the yield as a whole will be light. The entire crop will be gathered by the 1st of December, if the weather continues favorable.

Tensas Parish, La.—The crop promised well in August, but suddenly stopped growing and "shed off" during September. On former estimates it is safe to deduct twenty-five per cent.

Tangipahoa Parish, La.—The cotton crop has suffered considerably from the storms of September, perhaps to the extent of one-third.

Burleson County, Texas.—Cotton will average one-third of a bale to the acre.

Ellis County, Texas.—The drought in July and August injured the cotton crop about one-third.

Fannin County, Texas.—The crop may be set down at five-eighths; loss on account of continued drought.

Henderson County, Texas.—Cotton crop somewhat injured by worms, drought, and rot; it will yield barely two-thirds of the average, but on account of increased acreage will perhaps equal last year's product.

Lavaca County, Texas.—Cotton barely half a crop.

Ashley County, Ark.—The very hot weather in August injured the cotton crop seriously.

Phillips County, Ark.—The cotton crop will be considerably less than that of 1868; the protracted drought of June, July, and August arrested its full development.

Prairie County, Ark.—The little rain we received in September injured cotton, causing it to shed the squares.

Pulaski County, Ark.—Cotton cannot be put higher than eight, in spite of the general indications of a fair yield.

Fayette County, Tenn.—Excessive drought has brought down the cotton crop to about six-tenths of a full crop, the acreage being in excess of last year. Compared with last year, the crop will be about two-thirds.

Gibson County, Tenn.—Owing to wet and backward spring cotton has been damaged by rust.

Henry County, Tenn.—Half the cotton produced in the county will be manufactured at home.

WHEAT.

Androscoggin County, Me.—The usual acreage of wheat not sown; quality of yield good.

Coos County, N. H.—A good yield of wheat.

Caledonia County, Vt.—Wheat crop good.

Orleans County, Vt.—A larger crop than last year.

Chautauqua County, N. Y.—Winter wheat is threshing out well; average yield will be nearly twenty-two and one-half bushels per acre.

Onondaga County, N. Y.—Winter wheat looks well.

Orleans County, N. Y.—Heavy rains in September made it very bad for wheat sowing.

Steuben County, N. Y.—Winter wheat is up and growing well. A large area sown.

Yates County, N. Y.—In consequence of the low price of wheat, a smaller acreage has been sown this fall than usual.

Clearfield County, Pa.—Wheat crop very good.

Luzerne County, Pa.—Wheat good.

Perry County, Pa.—Wheat does not turn out as well in threshing as was expected.

York County, Pa.—The wheat crop is better than at any time within the last ten years.

Baltimore County, Md.—The yield of wheat is heavy; quality very good.

Harford County, Md.—A large breadth of wheat will be sown this month.

Kent County, Md.—Wheat has produced better this year than for several seasons.

Highland County, Va.—A good crop of wheat is expected.

King George County, Va.—The estimate of the wheat crop is fifty per cent. higher than that of last year; quality generally good.

Middlesex County, Va.—The excessive drought has well nigh destroyed all prospect for full crops; no fallowing has been done for wheat.

Smyth County, Va.—A large area of winter wheat is being sowed.

Camden County, N. C.—The drought will curtail the wheat crop.

Edgecombe County, N. C.—Comparatively little wheat grown in this county. The acreage this year is about one-fifth greater than heretofore, and rather higher than that in quality.

Forsyth County, N. C.—The wheat is fine.

Red River County, Texas.—The product of the present year is a good average crop of superior quality.

Greene County, Tenn.—A large average of wheat, but a small yield; all needed at home to help out the deficient supply of corn.

Monongalia County, West Va.—A good yield of wheat; grain plump.

Graves County, Ky.—Over an average yield of wheat.

Russell County, Ky.—Farmers are putting in double the quantity of wheat usually sown.

Trimble County, Ky.—Less wheat being put in than last year, in consequence of present low prices and the large amount raised this year.

Atchison County, Mo.—Wheat not a good crop.

Benton County, Mo.—Large area of wheat sown.

Cass County, Mo.—A much larger breadth of wheat sown than ever before.

Vernon County, Mo.—Not so much wheat raised to the acre as last year, but the quality is better, with twenty-five per cent. more sown.

Boone County, Ill.—Spring wheat is yielding ten and eleven bushels per acre on an average; quality good.

Lee County, Ill.—Wheat is yielding an average of eight bushels to the acre.

Lawrence County, Ill.—Grasshoppers are doing some damage by eating the winter wheat that is up.

Marion County, Ill.—The quantity of wheat falls short of the promise of harvest; quality good.

St. Clair County, Ill.—There will be from two-fifths to three-fifths less wheat sown this fall than for several years; wheat does not pay expenses.

Winnebago County, Ill.—On account of rust and blight, the wheat product will fall short of that of last year.

Adams County, Ind.—A large acreage of wheat is being sown.

Noble County, Ind.—Wheat crop good.

Rush County, Ind.—Wheat averages twenty bushels per acre on bottom lands, and fifteen on uplands.

Washington County, Ind.—Yield of wheat sixty per cent. greater than last year; quality good.

Athens County, Ohio.—Wheat crop much above the average of several years; quality inferior to that of last year; a large proportion shrunken by rust.

Hardin County, Ohio.—Wheat looks well.

Warren County, Ohio.—"In the memory of the oldest inhabitant we have not had so large a crop of wheat."

Douglas County, Wis.—Spring wheat is badly damaged in the shock by wet weather.

Fond du Lac County, Wis.—Wheat not yielding as well as anticipated.

Pierce County, Wis.—Wheat very much injured by continuous wet weather. A larger acreage than last year, but quality much inferior.

Portage County, Wis.—In wheat there is a large growth of straw, but not as much grain in proportion as last year.

Walworth County, Wis.—The yield of wheat exceeds expectation; will average nearly twelve bushels per acre.

Washington County, Wis.—Winter wheat and club badly shrunken; Monmouth and Rio Grande plump and fine.

Carver County, Minn.—Wheat is over the average yield, but on account of the wet season the quality falls below the crop of last year.

Faribault County, Minn.—A larger acreage of wheat than ever before, and a fair yield; one or two tenths of the crop injured in the stacks by heavy rains.

McLeod County, Minn.—Wheat injured in the shock and stacks by heavy rains.

Audubon County, Iowa.—Wheat badly injured in the stack.

Benton County, Iowa.—Wheat half a crop.

Floyd County, Iowa.—A heavy yield of wheat, but about half the crop badly damaged by the rains.

Iowa County, Iowa.—A small yield of wheat, and very much damaged by the wet weather.

Johnson County, Iowa.—The wheat crop is worse shrunken and injured more by the extremely wet season than was supposed before threshing.

Madison County, Iowa.—About twenty-five per cent. of the wheat crop spoiled by the rains, and the remainder more or less damaged.

Montgomery County, Iowa.—Wheat not as much damaged by the rains as was feared.

Muscatine County, Iowa.—Wheat is proving fully as bad as was anticipated before harvest; very much of it is being fed to hogs, being unfit for any other use.

Le Roy County, Kansas.—A large breadth of wheat sown; it is coming up well.

Leavenworth County, Kansas.—Quality of wheat impaired by wet weather.

Riley County, Kansas.—Wheat as far as threshed fully equal to expectations.

Mendocino County, Cal.—A larger acreage of wheat than last year, but quality inferior.

Columbia County, Oregon.—Winter wheat harvested in good order, but spring was left in the shock during the late heavy rains, and about thirty per cent. sprouted.

Douglas County, Nevada.—Wheat largely in excess of last year.

Gallatin County, Montana.—Spring wheat has produced a better quality than ever before.

OATS.

Androscoggin County, Me.—Oats very good.

Coos County, N. H.—A good yield.

Norfolk County, Mass.—Oats secured in good condition.

Niagara County, N. Y.—The crop of oats as large as was ever harvested in the county, and of good quality.

Tompkins County, N. Y.—Oats heavy, and a large crop.

Clearfield County, Pa.—A very good crop of oats.

Elk County, Pa.—Oats are good.

Luzerne County, Pa.—A good crop of oats.

Perry County, Pa.—Oats a full crop; quality good.

Baltimore County, Md.—Oats fifty per cent. better in quality and quantity than last year.

Mecklenburg County, N. C.—The wet spring favored the crop, which gave an increased yield over last year.

Pickens County, Ga.—Crop of oats small—about enough for home consumption.

Boone County, Ill.—Product below an average; yield per acre thirty-five to forty bushels of good quality.

Champaign County, Ill.—A large crop of oats of superior quality.

Winnebago County, Ill.—Crop of oats somewhat affected by rust and blight, yet product and quality much better than last year.

Warren County, Ohio.—A better crop than for many years.

Cass County, Mich.—Quantity and quality of oats never better.

Douglas County, Wis.—Oats sustained some damage on account of continuous wet weather.

Montgomery County, Iowa.—Oats not as much damaged by rains as was feared.

Muscatine County, Iowa.—Oats yielding as well as usual, and coming up to standard weight.

Atchison County, Mo.—Oats better than usual.

Riley County, Kansas.—The crop of oats good.

Leavenworth County, Kansas.—Oats damaged by the wet weather.

Douglas County, Nevada.—The crop of oats largely in excess of that of last year.

POTATOES.

Androscoggin County, Me.—A fair crop of potatoes.

Lincoln County, Me.—A fair average yield of potatoes of superior quality, but have commenced rotting within a few weeks, and some fears are entertained for the crop.

Oxford County, Me.—A light crop of potatoes, but the quality superior.

York County, Me.—Potatoes sound.

Caledonia County, Vt.—A good yield of potatoes, but they are rotting badly. A larger breadth than usual planted.

Chittenden County, Vt.—A good yield.

Orleans County, Vt.—A large crop, but the early varieties are rotting badly; still there is more than an average of sound potatoes.

Norfolk County, Mass.—Potatoes abundant, and as yet not seriously affected by rot.

Chautauqua County, N. Y.—Potatoes are rotting badly.

Erie County, N. Y.—A fair yield, but are rotting to some extent.

Livingston County, N. Y.—Potatoes are rotting badly.

Niagara County, N. Y.—The rot has become general among potatoes; already more than half the crop spoiled. Yield heavy. Harrison and Early Rose freest from rot.

Yates County, N. Y.—Potatoes a third above an average yield, with some rot.

Gloucester County, N. J.—Potatoes greatly injured by drought.
Ocean County, N. J.—Potatoes much injured by the drought.
Allegheny County, Pa.—The potato crop unparalleled in this county.
Beaver County, Pa.—Potatoes are rotting; tops blighted about the 1st of September.
Clearfield County, Pa.—A light crop.
Delaware County, Pa.—Potatoes free from rot. The drought will greatly lessen the yield.
Elk County, Pa.—Potatoes rotting badly.
Luzerne County, Pa.—Potatoes good in yield and quality.
Perry County, Pa.—A full crop.
Prince George's County, Md.—Crop destroyed by drought.
St. Mary's County, Md.—Late potatoes suffered much from drought.
King George's County, Va.—Crop short.
Rockbridge County, Va.—Late potatoes a failure.
Camden County, N. C.—Potato crop nearly ruined by drought.
Mecklenburg County, N. C.—A fair average crop.
East Feliciana County, La.—Potato crop unpromising.
Lavaca County, Texas.—The second crop of potatoes looks tolerably well.
Fayette County, Tenn.—A decreased yield on account of drought.
Sevier County, Tenn.—A light yield.
Kanawha County, West Va.—Late potatoes injured by the drought.
Graves County, Ky.—An average yield—about equal to that of last year.
Boone County, Ill.—Yield extra, both in quantity and quality.
Clay County, Ill.—A fine yield of potatoes.
Champaign County, Ill.—Potatoes selling for fifteen cents per bushel in the field.
Sangamon County, Ill.—A greater breadth than usual planted. Yield remarkably fine.
Winnebago County, Ill.—Potatoes are very fine; but little complaint of the rot.
Steuben County, Ind.—A good crop.
Morrow County, Ohio.—A very large crop.
Cass County, Mich.—Quantity and quality of potatoes never better.
Carlton County, Minn.—The continual rains have rotted potatoes, and not more than half a crop is expected.
Carver County, Minn.—It is feared the potato crop will be a total failure. The wet season caused the rot to be almost universal.
Faribault County, Minn.—Potato crop large, but there is much complaint of rot, caused by the rains.
Sac County, Iowa.—The wet season has caused about one-half the potato crop to rot.
Atchison County, Mo.—The best grown in many years.
Dakota County, Neb.—Potato crop injured by rot. Peach-Blows and some other varieties seem to resist the rot.
Walla-Walla County, Wash. Ter.—Potatoes doing well.
Douglas County, Nevada.—The crop of potatoes will be largely in excess of last year.

HAY AND PASTURAGE.

Caledonia County, Vt.—The hay crop not as heavy as last year.
Onondaga County, N. Y.—Pasturage good.
Suffolk County, N. Y.—Pasturage affected by the drought.

Westchester County, N. Y.—Pasturage affected by the drought.
Gloucester County, N. J.—Pasturage injured by the drought.
Kent County, Md.—Short pasturage.
Prince George's County, Md.—Pasturage destroyed by drought.
Loudon County, Va.—Pasturage very short.
Middlesex County, Va.—Pasturage is drying up.
Nelson County, Va.—The unprecedented drought has told heavily upon the pastures, and consequently upon the condition of beef and stock cattle.
Jackson County, N. C.—Pasturage injured by drought.
Fayette County, Tenn.—Pasturage parched by the drought.
Grundy County, Mo.—Hay crop very good.
Steuben County, Ind.—The unusually wet season has benefited grasses and pasturage.
Morrow County, Ohio.—Pasturage abundant.
Vinton County, Ohio.—Pastures nearly burned up.
Carlton County, Minn.—Wild hay swept away by the floods, and the tame is materially damaged.
Carver County Minn.—Hay in the valleys swept away or badly damaged.
Mille Lac County, Minn.—Large amount of hay carried off by floods.
Meeker County, Minn.—About one-half the hay crop destroyed by the rains.
Winona County, Minn.—Immense quantities of hay lost by the late rise in the Mississippi.
Wright County, Minn.—Nearly all the hay cut in the marshes has been spoiled; streams overflowing their banks have carried away hundreds of tons of hay. The prospect looks dark for wintering stock.
Floyd County, Iowa.—A short crop of hay.
Johnson County, Iowa.—Grass and pasturage good.
Santa Clara County, Cal.—Quality of hay poor.

FRUIT.

Androscoggin County, Me.—Fruit almost a failure.
York County, Me.—Apples about one-third of a crop.
Chittenden County, Vt.—Apples not abundant. Plums a good crop.
Chautauqua County, N. Y.—Grapes look well, but are about three weeks later than usual, and will not all ripen before frost.
Erie County, N. Y.—Grapes will hardly ripen.
Niagara County, N. Y.—A fine crop of peaches. Apples in large quantity, and the fruit fine; nearly or quite as abundant as two years ago, when we sold from this county one hundred and seventy-five thousand barrels.
Onondaga County, N. Y.—Grapes very late.
Ontario County, N. Y.—A good crop of peaches. Grapes coming on well.
Yates County, N. Y.—A small crop of apples.
Alleghany County, Pa.—Grapes are a failure. Peaches and pears very extra, both in quantity and quality.
Lancaster County, Pa.—Plenty of peaches and pears; a medium crop of apples; grapes better than for several years.
Montgomery County, Pa.—Peaches abundant, but sustained injury from drought.
Highland County, Va.—Apples and peaches abundant and of fine quality.

Smyth County, Va.—Apples and peaches abundant, but of inferior quality.

Beaufort County, N. C.—Grapes injured by the drought.

Yalabusha County, Miss.—Muscadine grapes a fair crop; other varieties are failures.

Crawford County, Ark.—The fruit crop, apples, pears, peaches, and quinces, rotted about three-fourths, grapes about one-fourth.

Fayette County, Tenn.—Peach crop a failure; apple crop moderate; pear crop ordinary; Scuppernong grapes, as usual under all vicissitudes, very productive.

Washington County, Tenn.—It is estimated that this county has shipped this season one hundred thousand pounds of dried blackberries.

Rock Island County, Ill.—Concord grapes are fine, and the only variety of any value in this vicinity this season.

Fountain County, Ind.—Apple and pear crops good; some varieties better than last year. Peaches scarce.

Hardin County, Ohio.—Grapes have succeeded better than any other of the fruits.

Vinton County, Ohio.—Fruit crop large and well matured.

Fond du Lac County, Wis.—Apple crop very fine and free from worms.

Johnson County, Iowa.—To some extent apples have been rotting on the trees.

Atchison County, Mo.—Fruits good.

HOGS.

Fayette County, Tenn.—Hogs look well, what few are left. No cholera.

Greene County, Tenn.—It will be impossible for farmers to fatten their hogs unless upon mast, of which it is thought we have a heavy crop.

Union County, Ind.—Fattening hogs scarce. There is a great scarcity of corn.

Atchison County, Mo.—The hog crop is largely in excess of former years—fifteen thousand the present season against eight thousand to ten thousand for former years.

OTHER CROPS.

Androscoggin County, Me.—Barley a good crop.

Chittenden County, Vt.—All grains suffered from rust.

Grand Isle County, Vt.—A good crop of beans.

Norfolk County, Mass.—Beans better than an average. Buckwheat seriously damaged by the great gale.

Suffolk County, N. Y.—The dry weather materially affected the yield of buckwheat, beans, &c.

Yates County, N. Y.—Buckwheat a little damaged, but the increased acreage will bring the crop up to an average.

Ocean County, N. J.—Buckwheat is a failure.

Sussex County, N. J.—Buckwheat materially affected by the drought; all other crops a full average, except rye.

Bradford County, Pa.—Buckwheat injured by the hot sun of September.

Clearfield County, Pa.—Buckwheat unexpectedly light.

Indiana County, Pa.—Buckwheat about half a crop. Peas and beans not good in quality or quantity.

Prince George County, Md.—Tobacco crop seriously injured by the drought, which lasted from July 27 to August 28.

St. Mary's County, Md.—Tobacco seriously damaged.

Henry County, Va.—The tobacco crop greatly improved in September. In the absence of early frosts, about eight-tenths of an average crop may probably be realized, but the quality will be inferior.

Isle of Wight County, Va.—Peanuts have literally roasted in the ground; about one-third of a crop of inferior quality is expected. Sweet potato crop suffered severely from drought.

Middlesex County, Va.—The excessive drought has well nigh destroyed all prospects for the fall crops.

Surry County, Va.—Peanuts almost a failure.

Beaufort County, N. C.—All late crops greatly injured by the severe drought. Sweet potatoes, beans, and peas nearly ruined.

Caswell County, N. C.—Shortly after last report there was rain sufficient for the tobacco crop, by which it was much improved. The season, however, is so far advanced that it cannot mature fully, and an early frost may yet cut the crop short.

Chowan County, N. C.—The pea crop will be very short.

Currituck County, N. C.—Sweet potatoes and peas badly injured, the drougth still continuing.

Edgecombe County, N. C.—Pea crop injured, and sweet potatoes almost ruined.

Franklin County, N. C.—The severest drought in forty years. All crops have suffered.

Gates County, N. C.—But little rain since July first. Beans, peas, sweet potatoes, &c., suffered greatly.

Jackson County, N. C.—Drought has seriously injured sweet potatoes and ruined buckwheat.

Mecklenburg, N. C.—Sweet potatoes cut short by the drought.

Pasquotank County, N. C.—The drought has been more extended and of longer duration, and crops have been more injured by it, than has ever before been known in this section.

Sampson County, N. C.—Peas and sweet potatoes injured one-half. The dryest season ever known here.

Georgetown County, S. C.—The protracted drought has been unfavorable for all provision crops in this State.

Orangeburg County, S. C.—Rice crop cut short by drought.

York County, S. C.—Fall crops injured by the long drought.

Chattahoochee County, Ga.—The pea crop nearly a failure.

Early County, Ga.—Best crops year since 1859.

Liberty County, Ga.—Good seasons for harvesting rice and corn.

Macon County, Ga.—Sweet potato crop almost an entire failure.

Pickens County, Ga.—Tobacco and sorghum will yield good crops. Rye, peas, and beans about enough for home consumption. Hottest summer in ten years.

Schley County, Ga.—Sweet potatoes a small crop.

Jackson County, Fla.—The agricultural operations of the year are for the most part highly satisfactory and remunerative.

Leon County, Fla.—The dry fall has been favorable for the cane crops.

Yalabusha County, Miss.—All crops more or less affected by rust.

Fayette County, Tenn.—Tobacco and sweet potatoes superior to crops of last year.

Lavacca County, Texas.—Sugar cane looks promising.

Henry County, Tenn.—Tobacco nearly all housed in tolerably good order.

Sevier County, Tenn.—Sorghum a light crop.

Monongalia County, West Va.—Buckwheat less than an average crop.

Graves County, Texas.—Rye about an average. Tobacco under an average.

Metcalf County, Ky.—As a general thing crops are not as good as last year on account of long drought.

Russell County, Ky.—Tobacco has improved. Should there be no frosts within the next fifteen days it will be of fine quality, but the crop will be small.

Boone County, Ill.—Rye deficient; barley, product good, but heads discolored; hops a fine yield; flax a little above the average.

Clay County, Ill.—All crops good.

Hancock County, Ill.—The cultivation of sorghum almost entirely abandoned.

Iroquois County, Ill.—Broom-corn has been extensively raised this season.

Winnebago County, Ill.—Rye a light crop, a large proportion of the grain shrunken; barley light; sorghum but little raised; broom-corn crop heavy.

Rush County, Ind.—Sorghum partially frosted.

Athens County, Ohio.—Buckwheat almost a failure.

Hardin County, Ohio.—Nearly all crops have been from one to three weeks behind their usual time in maturing.

Warren County, Ohio.—Tobacco and sorghum have turned out better than was anticipated.

Douglas County, Wis.—It is feared that the grain crops are seriously injured by the heavy rains.

Meeker County, Minn.—About one quarter of the grain crops destroyed in the fields by rain.

Nicollet County, Minn.—Very much of the grain is wet and damaged in the stack.

Riley County, Kansas.—Good crops of rye and barley.

Mendocino County, Cal.—More barley raised than last year, but did not turn out as well.

Benton County, Oregon.—Early rains injured about one-fourth of the grain crop.

Walla-Walla County, Wash. Ter.—An unusually dry summer. Grains will not yield more than half a crop.

Douglas County, Nevada.—Barley crop largely in excess of that last year.

EXTRACTS FROM CORRESPONDENCE.

EXPERIMENTS WITH SEEDS FROM THE DEPARTMENT.

Wendell, Mass.—To make a test for common farm purposes, the seeds received from the Department were given only ordinary manure and attention. Dunnett's First Early peas planted April 27. We had a deep snow May 1, which remained until May 7. The peas germinated May 26, yielded green peas July 2, and ripe seed (second crop of pods) July 27, from the growth of which I am now again picking ripe seed. Thus two crops of green peas have been obtained in one short cold season. This is a very rich and valuable variety for farm and market purposes, moderately productive, but very even quality. McLean's Epicurean peas

were planted May 25, yielded green peas July 9, ripe seed (second crop of pods) July 29. This is a very rich variety, not very productive, but having no rival as a green pea, except the Champion of England. The Long Surry carrot, planted April 27, germinated May 29, and produced September 20, good roots from sixteen to twenty-three inches long, of a fine golden orange color throughout, tender, crisp, and with the flavor of the sweet potato. It is very productive and is superior for table use to any varieties we have. The White-tipped Scarlet Oval radish, planted April 27, germinated May 18, pulled June 16 to July 10. Large, tender, crisp, sweet, and is superior to any variety we have. Carter's Early cabbage was planted in open boxes May 10, transplanted June 7, and cuts now twelve to sixteen pound heads. It is rich, sweet, and hard, a valuable variety, even in size, and with no false heads. No variety is better suited to the cool and humid season of our hill towns, which in fact has a similarity to the English summer. The season has not been favorable to the Dwarf Deep-blood-red beet, notwithstanding it is an English variety. The product has been very small, though very rich, sweet, tender, and crisp. It apparently needs a much higher culture than it would ordinarily receive here. Of the New Pine Apple beet I cannot speak too highly. It has reached to about eight inches in length and from six to eight inches circumference at the head, is of light red color, and though growing very slow by reason of the unfavorable season, has been entirely free from corkiness, is very even in size, and has proved in all respects the best table beet that I know. Both these varieties of beet were planted April 27, and matured about the middle of September. The Bossin lettuce has proved a very superior, though this season a late variety; is very tender and crisp, possessing a strong opiate taste. It is large and hard-headed, and is the only variety which has succeeded with me this season. It was planted May 10, transplanted June 13, and cutting was commenced August 20. Lenormand's Short-stemmed cauliflower was planted May 12, transplanted June 12, and cut October 2, all transplanted having formed heads very even in size. It is very rich and sweet, and is not excelled by any variety known to me. I think it suited to our usual seasons.

Middlesex County, Mass.—The Needham Park onions were nearly all destroyed by the fly, while other varieties in the vicinity were untouched. Those which remain do not make bulbs as large as the common Silver Skin. The Student parsnip is an excellent variety for autumn use, while our common parsnip is fit to eat only in the spring. The Short-horned carrot is early and of fine quality, though not large or long. Madeira Cabbage lettuce grows luxuriantly, and is succulent and tender. The Excelsior oats, (four quarts sown on sixteen square rods,) produced beyond my most sanguine expectations. Many of the stalks were over six feet in height, and the grain heads were large and well filled. This variety of grain must, I think, usurp the place of that now generally sown.

Steuben County, N. Y.—The Polish wheat sent me last autumn was sown on new ground, and harvested late in July, yielding at the rate of twenty-four bushels to the acre. The Arnautka wheat was sown the first week in May, and harvested August 23. Heads very compact and well filled. Yielded at the rate of twenty-one bushels to the acre. The White Swedish oats yielded at the rate of fifty-six bushels per acre, forty-five pounds to the bushel.

Chautauqua County, N. Y.—The Polish wheat grew very rank, but fell down, and was struck by rust, so that it amounted to nothing. The Rough Chaff did not come up at all. My land is very rich.

Alleghan County, N. Y.—This season I raised eight bushels on the second crop from the quart of Tappahannock wheat received from the Department in the fall of 1867. It is equal to the original seed, is pure and clean, has a short stiff straw, will stand rich ground, and is ten to twelve days earlier than any other wheat that I have known in the county. The Wethersfield onion has done well. The True Yellow Danvers, Large Tripoli, White Lisbon, and Large Madeira onions came up well, but were nearly all *scallions*, and therefore worthless. The Superfine Early cabbage did not prove as good as the Early York. The Narraganset Sweet corn was good, though small, as all other kinds are this year, owing to much rain and cool weather.

Suffolk County, N. Y.—The product of the Polish wheat was about equal to that of the Bearded Red wheat, but neither equaled the yield of the Bald Mediterranean, received some years ago and now quite extensively disseminated. The Arnautka spring wheat did not yield well. Either this section is not favorable to the growth of spring wheat or the farmers do not understand raising it. The Saxonian barley was quite productive. The White Schonen oats stood up well and yielded heavily The variety promises to be a most valuable one. The Black Swedish oats lodged badly.

Bergen County, N. J.—The Rough Chaff wheat was sown October 3, 1868, in the same field with the Mediterranean, and at the same time. The first named variety obtained a good stand before winter, and looked well in the spring, but failed to ripen sufficiently early to escape rust. The stalk was very much rusted, and the grain shrunken and very poor, while the Mediterranean gave a good average crop.

Ocean County, N. J.—The peck of Rough Chaff wheat, sent me last September, was sown carefully by an experienced farmer. The result is unfavorable—the heads are poor, grains shriveled and imperfect. It was sown thinly; ground well manured, soil a clay loam. Other wheat near, sown and treated in the same way, produced more than the average of excellent grain.

Tioga County, Pa.—The Tappahannock wheat is ten days earlier than any other variety that is grown here, yields well, and is very plump and nice looking. I think it will prove a valuable wheat for this region. The Excelsior oats proved excellent and gave a good yield, ripening in ninety days from sowing; a measured bushel weighed forty pounds. The White Schonen oats are of good quality, but ten days later; a measured bushel weighed thirty-six pounds. The Black Swedish are worthless—too late.

Greene County, Pa.—The Tappahannock wheat is successful here.

Baltimore County, Md.—The Tappahannock wheat that was distributed by the Department has proved a valuable variety generally. The Mediterranean is still extensively sown in this county, north and south, and is yet the champion wheat. It has been sown and resown on the same soil, until it has deteriorated very much, but it is still considered a sure and reliable variety. Farmers are to be blamed themselves that wheat is deteriorating so rapidly. Too thick seeding is a great evil; it is the cause of the many small heads and kernels, weak and sickly stalks, with the berry not brought to the full development. The wheat is again sown and resown, and deterioration is the consequence. The small and sickly grains should be carefully separated by screens, &c., and only good and plump seed sown. Sowing with the drill is a great improvement, and one and a quarter bushels per acre is sufficient seed. If the Mediterranean should be again imported in its prime state it would undoubtedly be a great benefit to the country.

The Talavera wheat that was sent to me was carefully experimented with by myself and two other practical farmers; the result was a failure. This variety may be adapted to more northern climates.

The Saxonian barley, White Schonen oats, and Black Swedish oats, were each carefully sown by myself and three other practical farmers; each variety proved valuable, the Schonen oats in particular—a magnificent variety.

Montgomery County, Md.—The Talavera wheat sent me by the Department proved a failure. The cause seemed to be the want of a longer season to mature in. It was sown about the middle of October. Perhaps it should have been put in during September.

District of Columbia.—Sowed on the 20th April one quart each of Somerset and Black Swedish oats, on land of equal quantity and of the same quality. Both kinds came up evenly and seemed very promising, the Somerset, however, taking the lead, and sending out very broad, green stalks, which kept the lead all the season. This variety ripened ten days sooner than the Black Swedish. One quart of Somerset yielded forty-four quarts, weighing thirty-eight pounds per bushel; one quart of Black Swedish produced twenty-six quarts, weighing twenty-six pounds per bushel.

Madison County, Va.—Wheat is yielding well. Many of our best farmers are making ten to twelve bushels for each bushel sown, throughout the crop. In my own case, twenty-three acres of clover, fallow corn, and tobacco land were seeded with Lancaster, Tappahannock, and Poland wheat. From twenty-seven bushels sown I have between nine hundred and one thousand shocks of one dozen sheaves to the shock; it seems but reasonable to suppose that it will average twelve quarts to the shock, which would aggregate say four hundred bushels. No fertilizer was used except five hundred pounds guano, which was applied to the corn land. The Poland and Tappahannock did best.

A neighbor tried the following experiment for seeding one and a quarter acres in Lancaster wheat: For the lot twelve hundred pounds Peruvian guano was used; eight bushels sown on the lot; yield fifty-six bushels. The growth of straw was very heavy.

Cumberland County, Va.—The English Rough Chaff wheat sent from the Department proved a failure—it might properly be called "English all chaff." The red purple stem, growing on either side yielded a fine crop.

Buckingham County, Va.—I received from the Department last fall fourteen pounds of Rough Chaff wheat. I gave all but one pound to my assistant. It was sown on the 7th of October, on a corner of a lot, put down at the same time and in the same manner with the Tappahannock wheat. It grew beautifully till the drought set in, but coming into bloom in hot, dry weather it failed to mature, and is not worth threshing, while the Tappahannock on the same field made a fair crop. I saw this wheat in the field about the 24th of June, when the Tappahannock was being harvested, and it certainly looked well then; the heads were large and well filled, it had tillered finely, covering the land well, was about two feet high, had a stiff straw, and altogether was the prettiest wheat I ever saw in the field—but, I regret to say, it is about two weeks too late for this latitude. The Tappahannock has well nigh supplanted all other kinds of wheat in this county.

Northumberland County, Va.—The peck of Tappahannock wheat received from the Department last year was sown on corn ground without any fertilizer; yield ten pecks of very fine grain.

Clarke County, Va.—The English Rough Chaff wheat will not mature

in this climate. It made a beautiful head, but dried before it filled; while the Lancaster wheat, growing by its side, made a very heavy crop.

Smyth County, Va.—The Tappahannock wheat gave a good yield of very fine quality. I should judge it to be a good variety for this section.

Petersburg, Va.—A small package of garden seeds was received from the Department last spring, and on so much of the product thereof as has come to maturity, the following notes are offered: French Breakfast radish; early, crisp, and very fine. Early Yellow beans; not among the earliest, but of superior quality. Green Curled endive; growth very luxuriant. Red beet, early and excellent. Durmott's First Early peas; a very early variety, and possesses the merit of maturing the crop pretty much at the same time. It is a kind worthy of cultivation. Carter's superior peas; a fine, rich variety, very luxuriant and very productive. Late Long Green okra, with pods answering to the descriptive part of the name; a desirable variety. Strasburg onion; in our climate we can only succeed in raising sets the first season. An abundance of these has been saved, of fine appearance. Phinney watermelon; small and of no value, though the season for melons has been better than usual. Superfine cabbage; very early, and looks admirably; an excellent early variety. Incomparable cabbage; promises well, and is beginning to head very handsomely. Large Late Drumhead Savoy; too early to express any decided opinion, but it has a vigorous growth and is of good promise. Lenormand's Short-stemmed cauliflower, and Snow's White broccoli; both of these gave the finest promise until pinched by the dry weather. The plants are now in a suffering condition, but not so far spent but that good results may be expected on a favorable change of the weather.

It may be proper to add in regard to the vitality of the seeds, that apparently every seed of all the kinds sent, promptly vegetated. In an experience of many years, the writer believes he has never had anything to equal it.

Pulaski County, Va.—Several of our farmers have tried the Arnautka spring wheat, but, I believe, in every instance failed. My crop about half matured. I concluded to try it as a winter wheat, although the seed was very light. Sowed in the fall, and was surprised to find that it filled out and yielded heavily.

Lenoir County, N. C.—I received one peck of Tappahannock wheat from the Department last fall. Prepared about one-fourth of an acre of ground well and sowed the wheat broadcast. It came up well and made an excellent crop. I saved about five bushels of good wheat. It had neither smut nor rust. The grain is large and full and as good as the seed sown, probably better.

Surry County, N. C.—The Tappahannock wheat sent last fall yielded well; one of my neighbors sowed two quarts which made one and three-fourths bushels of excellent wheat, sowed on upland clay soil.

Stokes County, N. C.—The twelve pounds of Tappahannock wheat received from the Department last fall were sowed and made one hundred and fifty-five pounds. The wheat was seeded late. I think with early sowing it will be a success in this county.

Lincoln County, N. C.—About one quart of Arnautka spring wheat was sent to me by the Department; was received on the 15th day of March and sown the same day, in drills eight inches apart, in stiff clay soil with a mixture of coarse sand, well manured and cultivated twice with the hoe; harvested on the 1st day of July; yield one and one-fourth bushel—would have produced more, but, owing to wet weather before

harvesting, had something like blight, or rather rotting of grains in some of the heads. The quality of the sound wheat is good, but not equal to the seed sown, being some what shrunken. The heads averaged forty grains.

Haywood County, N. C.—The Tappahannock wheat received from the Department was sown and made a fair yield for this county, though not the best. It promises well on highly improved or new land, but does not do well on thin land. It is thought it will average about twelve bushels per acre, and what I raised this year weighs fifty-four and a half pounds per bushel.

Iredell County, N. C.—Five pounds of Tappahannock wheat sowed in November on common land produced ninety pounds of fine wheat.

Sampson County, N. C.—The Tappahannock wheat, one peck, received from the Department last fall, was sown on the 20th of November, on eight hundred and forty-four square yards of land—soil, sandy loam. A good dressing of stable manure was put upon the top after the land had been well broken, and wheat and manure harrowed in together. It was harvested June 10, and yielded six bushels, equal if not superior to any wheat I ever saw for fullness and freedom from disease. It will be the main crop of wheat here now, as it ripens so early.

Jackson County, N. C.—The kohl-rabi proves a valuable acquisition to our garden crops. White Silesian beet and Yellow Mangold are excellent crops in this soil and climate. China beans and White Japan melons are not valuable here.

Harnett County. N. C.—Madeira onions, very fine. Carter's first crop pea, the Avunca, and McLean's, severally, did well. China bean, Early Yellow, and Kidney beans turned out well. Early Vienna kohl-rabi did well. Drumhead Savoy cabbage, very fine. Large Green Curled, and Ruffled endives, very fine. James's Scarlet carrots, very good, as also the White Tipped Scarlet Oval radish.

Chowan County, N. C.—McLean's Little Gem is a fine pea and very early. The White Tipped Scarlet Oval radish did well, and is fine flavored, mild and sweet. James's Scarlet carrot yielded a fine crop, as did also the Student parsnip. Cabbages, Kemp's Incomparable, Carter's Early, and kohl-rabi were injured by the drought. Early China bean was a successful crop, prolific, and very delicious. Large Madeira onion can be grown of good size in one season from the seed. Black Spanish watermelon does very well.

Montgomery County, N. C.—Five quarts of the Tappahannock wheat received from the Department was sowed in the same field with another kind regarded as the best wheat now sown in the South, the Purple Straw. Soil and treatment the same. The Tappahannock ripened about four days earlier than the Purple Straw, yielding thirty three bushels to one of seed, the other variety yielding only ten to one. Think the Tappahannock an excellent variety, suited to the soil, and less subject to the rust which so often diminishes the yield of the later varieties.

Bertie County, N. C.—The Tappahannock wheat proved a perfect success. I sowed on land that had produced a crop of corn and peas. Turned in the stalks and vines with one hundred and fifty pounds of No. 1 Peruvian guano per acre. Sowed the wheat on high beds, September 20th, and dragged in with a heavy brush. It came up quickly, and looked well until winter set in, when about two-sevenths were killed by freezing. The seven quarts yielded two hundred and eighty-seven quarts of as nice wheat as I ever saw.

Chowan County, N. C.—The Tappahannock wheat turned out well. It is eight or ten days earlier than the other varieties sown here.

Columbus County, N. C.—Tappahannock wheat gave good satisfaction. Grain pronounced by good judges to be excellent.

Harnett County, N. C.—Tappahannock wheat sowed October 29th, 1868, on land lightly covered with stable manure. Ripened about the 20th of June, yielding thirty-two fold. It is the finest wheat I have ever seen, and seems adapted well to this climate.

Rowan County, N. C.—The ten pounds of Tappahannock wheat received from the Department were sown October 20, 1868, on one-third of an acre and were harvested June 25, 1869, yielding five bushels, weighing sixty-two pounds to the bushel—being in ratio to the quantity of seed as thirty-one to one. The Arnautka spring wheat, one and a half pound, was sown March 20, 1869, on one-tenth of an acre, and harvested July 6, following, yielding fifty-nine pounds—being in a ratio of thirty-nine to one. It was received and sown rather late in the season, and consequently the grains did not fill out. It should have been sown two or three weeks earlier. It is thought to be an excellent wheat for this climate.

Caldwell County, N. C.—The two packages of wheat sent me in September, 1868, were carefully sown in good land, well prepared. The Rough Chaff matured but very partially; there were a few small grains in each head, but they were imperfect. The Talavera did better; but neither of these varieties seems adapted to this locality.

Greene County, N. C.—The following are found to be of excellent quality: Early Yellow, Early China, and Large Lima beans; Carter's Early, Kemp's Imperial, and Drumhead Savoy cabbages; James's Scarlet carrot; Green Curled endive; Long Green okra; Wethersfield Large Red, and Early Nocera onion; Carter's First Crop, McLean's Epicurean, Advancer, and McLean's Little Gem peas; Carter's Imperial Hardy Sweet, Devonshire, Graystone, and Foster's Hybrid turnips.

Abbeville District, S. C.—The twelve pounds of Tappahannock wheat received from the Department were sown in drills, October 30, 1868, on red, stiff land, manured with cotton-seed. March 25, following, a small quantity of Baugh's raw-bone superphosphate was sown broadcast and hoed in with a narrow garden hoe. The wheat was harvested June 3d, and yielded two hundred and seventy pounds, being in a ratio of twenty-two and one-half to one of seed. The Rough Chaff was treated in all respects like the Tappahannock, but proved at least three weeks later, and rusted so badly that the heads did not fill, and the product was valueless. The Talavera also proved to be a late wheat and rusted badly, and, though not so complete a failure as the Rough Chaff, was not worth harvesting. Had the Tappahannock been sown about the middle of October it would, perhaps, have escaped rust altogether. The Tappahannock is suited to this climate; the other two varieties named are not. The Ramie or China Grass sent me did not vegetate; not a single plant came up.

Dawson County, Ga.—The Tappahannock wheat was sown about the 29th of October, 1868. On common wheat land without extra preparation the yield was thirty-five fold; and in one case, where sown on land manured by the droppings of sheep, the yield was forty-five fold.

Newberry County, S. C.—The Tappahannock wheat received from the Department yielded well, producing very fine grain. This variety promises well and is surpassed only by one variety, a red spring wheat, which ripens a few days before the Tappahannock, which gives it the advantage in seasons when rust makes its appearance.

Union County, S. C.—One peck of Tappahannock wheat sown early in October on land which had been in wheat the year before, yielded seven

and three-quarter bushels fine wheat, weighing sixty-two pounds to the bushel. A good variety for this section.

Union County, S. C.—The Pine Apple beet is a fine variety; McLean's Little Gem is good, and his Epicurean is a fine and prolific variety; the Eugenie, however, is the queen of peas. The White Lisbon onion, the large Madeira, and the Tripoli all promise well.

Clayton County, Ga.—The Tappahannock wheat sent me last fall does finely in this climate. It is a little late, and was somewhat injured by the rust, and I have some fears that it may be liable to rust here; but if it is not it will be the very wheat for this country, for it is the best headed and best filled wheat I have ever seen. It had a little extra chance, of course, but the yield was sixty-fold, which is very remarkable here.

Butts County, Ga.—The Tappahannock wheat received from the Department was drilled in rather late. It produced at the rate of thirty bushels to the acre. Some rust, but the grain was not injured, but was as full as the seed sown. I think it will succeed in this latitude. The Tripoli onion has matured well, and is tender, mild, juicy, and crisp. It is the best variety I have ever tried. It leaves no taste in the mouth after it has been swallowed. The large Madeira is also a good onion, larger than the former.

Polk County, Ga.—The package of Tappahannock wheat received from the Department last fall was sown broadcast on upland, highly manured with barnyard manure; yield five hundred and eleven and a half pounds of as fine, plump grain as I ever saw.

Gordon County, Ga.—The Tappahannock wheat did well, yielding twenty-four quarts to one sown.

Hall County, Ga.—Twelve pounds of Tappahannock yielded eight bushels of good wheat, sixty-five pounds to the bushel, or forty-five to one.

Carroll County, Ga.—I am convinced that the Tappahannock wheat is the best ever introduced into this county. My crop weighs sixty-five pounds to the bushel, and makes fifty-four pounds of flour, the best I ever used.

Camden County, Ga.—The Dan O'Rourke peas were planted March 4, and did finely, ripening the second week in May, and bearing heavily through June.

Crawford County, Ga.—The Tappahannock wheat is quite a success. It is early, comparatively free from rust, very prolific and heavy, weighing at least four pounds to the bushel more than the kinds usually sown here.

Crawford County, Ga.—McLean's Advancer pea is early, prolific, very sweet, and well adapted to our soil and climate. McLean's Little Gem, succeeding the Advancer in season, is an excellent variety, yielding largely; and the same may be said of Carter's Surprise and McLean's Wonderful peas, which follow next in season. Carter's Early and Kemp's Incomparable cabbages are not suitable to these southern regions. The Large Late White Drumhead and Stonemason cabbages are well suited to this region. The Leonard Short-stemmed cauliflower and the Early White Vienna kohl-rabi succeed well. The Large Tripoli and White Lisbon onions are two of the best varieties I have ever seen. The Cedar Hill and Conway's tomatoes are unsurpassed.

Leake County, Miss.—The Tappahannock wheat sent to me was sowed and turned out quite well; five quarts produced three bushels of an excellent quality.

Winston County, Miss.—Two quarts of Tappahannock wheat, sown October 1, 1868, yielded a half bushel. I put it in as I did my common

wheat, without manure. The Tappahannock matures about a week or ten days later than our common red wheat.

Coosa County, Ala.—Having made the second year's experiment with the Mediterranean wheat sent from the Department, we now regard it like many other kinds of wheat which we have been sowing here more or less every year; that is, that while it does not seem to be so well adapted to this region as the Purple Straw or Blue Stem, we can rely upon it for a passable yield. It seems to be subject to the infections of smut and rust as much as any variety we have, and the quality of its flour is not altogether as good as that made from some other varieties.

With the Tappahannock wheat we have made but one year's experiment, hence cannot report with certainty as to the adaptability of this variety to our climate and soil when sown for a general crop, and to take its chances with other varieties, but we are inclined to think it will suit us better than the Mediterranean.

Clay County, Ala.—Tappahannock wheat in this county has proved a success. It has yielded as high as forty-fold.

Lee County, Ala.—Dunnet's First Early pea is valuable as an early variety; Carter's Superior pea is a better bearer. Of the two kinds planted on the same day, Dunnet's matured for seed before Carter's was ready for the table. Early Yellow bean is early, and a good bearer. Cedar Hill tomato is a profuse bearer, good size, excellent quality. The large Winter cabbage, or Madeira lettuce, very fine. Green Curled endive grew rapidly, and became large and tender, but was sun-killed in June. Large-sized Lima bean does not bear as freely as a smaller variety here.

Union County, La.—The Tappahannock wheat sent to me last fall was sown on good soil, well prepared, but was entirely ruined by rust in the spring.

Putnam County, Fla.—Cook's Favorite tomato, Long Green okra, Improved New York Purple egg-plant, Brill's Extra Early sweet corn, White Japan muskmelon, and Phinney's Early watermelon, all flourish well in this region. Cook's Favorite is at least two week's earlier here than the Tilden, and the Large Smooth Red tomato matures more evenly, is of thicker and firmer pulp, and is one of the best varieties for this section that I have ever seen.

Grayson County, Texas.—Of the Tappahannock wheat sent last fall, four quarts yielded about five bushels. It was not sown till late to avoid the grasshoppers. I think if sown in time it will give a fine yield.

Dallas County, Texas.—I sowed eleven pounds of Tappahannock wheat which yielded one and a half bushel of good quality. I will try it again this fall, sowing earlier.

Ellis County, Texas.—Our wheat crop was rather indifferent this year, averaging about twelve bushels to the acre. The Tappahannock did better than any other variety, yielding about sixteen-fold—the grain not quite so large as the seed planted, but full. It will become a favorite variety here. I did not succeed well with Ramie; perhaps did not plant properly. Cook's Favorite tomato gave good satisfaction; flavor excellent. The Orange Globe beet is the earliest I have raised; has a fine flavor, grew very large—twenty inches in circumference. The Imperial Sugar beet, a fine variety, did well. Dewar's Dark Long Blood beet came up well. Carter's Early cabbage matures sooner than Early York, and makes a better head; Stonemason did well, heading early; Kemp's Incomparable is not so good as either of the preceding varieties. Seeds of the Weathersfield onion came up finely, growing fully large enough for table use. The true Yellow Danvers is the earliest onion I have had, and grew even larger than the Weathersfield. The Early Nocera did as

well as the Weathersfield. Carter's First Crop pea did well; is from three to seven days earlier than Landreth's Extra Early. Carter's Advancer and McLean's Little Gem both did well. Carter's Superior is a later pea, of the dwarf variety; is a great bearer, producing better than any variety known to me. The different varieties of seeds received here are an acquisition to the county.

Harrison County, W. Va.—The White Schonen and the Black Swedish oats did tolerably well, but I think the grain inferior to that sown. The black oats are much later than other varieties, and may be valuable on that account.

Upshur County, Texas.—The Ramie experienced a severe trial by the drought of August, but the only injury experienced was a stoppage of growth. I cut off some of it, and a new crop is now two feet high. That left standing is now full of seed. The Large Green Curled endive is large and fine, a great grower, reaching the height of three feet when in seed. The Nocera, Wethersfield Large Red, and Yellow Dutch onions were destroyed by cut-worms. The Lima beans, such of them as have survived frost and worm, have done well, and are continuous bearers, not injured by drought. The white Japan muskmelon is the best bearer we have and is well flavored. The Yokohama squash is in fact a dwarf pumpkin, and when ripe is very fine, cooked as such. Stowell's sweet corn is an early variety, very prolific, and giving fine roasting ears. Bates's sweet corn is a later variety, but equal, or superior, in flavor, and much larger. Both varieties succeeded well.

Crawford County, Ark.—Tappahannock is believed to be by far the best wheat for the soil and climate of Western Arkansas. Experiments in growing it have given great satisfaction.

Drew County, Ark.—I sowed the Tappahannock, received from the Department, on ground well manured with guano. The crop was the finest I ever saw until the grain came into the milk state, when innumerable flocks of rice birds commenced devouring it. I was compelled to harvest the remnant before it was ripe. On account of early sowing and manuring it headed earlier than any other wheat in the vicinity. I do not think it is an earlier variety than the little red May wheat most generally sown here, but it is more productive. The peas received from the Department were all productive, especially the Advance. White Japan muskmelon, small and only tolerably productive, but the sweetest and highest flavored of any known to me. Carter's Yellow tomato is productive, of fair size, and excellent quality—an acquisition. Extra Curled parsley and Green Curled endive are both very fine. Imperial Sugar-beet, of medium size and of the highest flavor. Sweet German turnip very productive, and of unsurpassed quality, but, like all ruta bagas, does not perfect seed in this climate.

Columbia County, Ark.—The Tappahannock wheat is earlier than most of the wheat in the county. The Scarlet Tipped radish proved an earlier variety than any we had, and did finely. Early White Vienna kohl-rabi has done well; all who have tried it are well pleased. Cook's Favorite and Keyes's Early tomato do finely, and give general satisfaction. Early Narragansett Sweet corn matures earlier than any variety in the county. The melons were fine, but not better than several varieties we have here, watermelons particularly. Lima beans fine and large. Not more than one person out of six who tried the Ramie seed had any plants come up. The plant looks well, but seems to grow quite slowly, probably on account of want of proper care and cultivation.

Montgomery County, Ark.—The Tappahannock wheat is a week or ten days later than the common May variety raised in this county. The only

objection to this wheat is that it does not ripen sooner, and thus escape the danger of rust.

Brooke County, W. Va.—I send herewith specimen heads of "Polish wheat from Odessa," raised from seed sent from the Department last year. It is a late wheat, heads light and chaffy, poorly filled, and with very long beards, and is of little worth. I send specimen heads and some shelled wheat of the White Diehl, which is a superior sort. Also some of the Witter wheat, (amber,) celebrated for the fine quality of its flour. The Tappahannock wheat (one peck) sent me from the Department has done well, producing about forty sheaves, which will yield about two and a half bushels of excellent wheat.

Jefferson County, W. Va.—One peck of Tappahannock wheat, received October 3, 1868, was sowed on the 10th of the same month, on corn stubble; sown broadcast and plowed in; soil about second quality, manured some during the winter; damaged a little by freezing out; matured well, and rather earlier than bearded wheat. Though some distance from the house, the fowls injured it a little; but we saved three bushels and twenty-three pounds of beautiful wheat, fully equal to the seed. The seeds received last winter—Black Swedish oats, White Schonen oats, Probstier barley, and Saxonian barley—were sown April 8, and harvested July 23. Both kinds of barley were badly rusted, and we threshed them together, saving some fourteen quarts of tolerably fair grain, intending to give it another trial, and, if possible, under more favorable circumstances. The White Schonen oats gave six quarts, and the Black Swedish oats eight quarts of good grain; some of each kind were wasted. Both these varieties of oats appear well suited to this section, but have not had a fair trial yet. The Tilden tomato is an excellent variety, the earliest that we have, and the best; do not think it can be surpassed in flavor; of fine size, and well worthy of cultivation. The results of the following seeds have been reported to me: "Yellow Danvers onion yielded well; though sown rather thickly, some of the bulbs became large enough for table use; a very good variety, almost as good as the White Lisbon; well adapted to this vicinity; have not tested its cooking qualities or flavor yet. The Madeira onion is not so valuable a variety as the Danvers, many of the bulbs failing to mature sufficiently to be kept during winter; will give it a more extended trial before deciding on its merits."

Morgan County, W. Va.—There has been great success in potatoes, especially the Early Rose, being the first in time and quality. The White Mercer is preferred for summer use, and the White Peach Blow for the winter potato. Sweet potatoes yield well in quantity and quality, but the seed must be continually renewed from the Chesapeake region. The yellow and red are both grown successfully. Artificial fertilizers are much more used than formerly, and, apparently, with great profit on these lands.

Braxton County, W. Va.—The Tappahannock wheat has fully satisfied expectation, and it is the general opinion that it is the best wheat that has ever been raised in this county, being hardy, early, of good quality, of standard weight, and yielding well. One of my neighbors sowed six pecks, in the common manner, on average land, without manure; and harvested twenty-four bushels, by measure. The Ragan White rye is very fine, and well adapted to this section.

Russell County, Ky.—The Tappahannock wheat sent me has turned out very finely, ripening earlier, grain larger, heavier, and yielding more than any wheat we have ever sown. Think it the best wheat for this climate. The White oats sent from the Department promise well. The

quantity received was hardly sufficient to judge of their value. The product, sown next spring, will prove their value here.

Owsley County, Ky.—The wheat crop exceeds my expectations. It is fully double the crop grown last year. Four pounds of Mediterranean wheat sown last fall produced one hundred pounds of good wheat. The Mediterranean grows far better than any other wheat in this county. The Tappahannock wheat yielded about sixty pounds to the bushel.

Scott County, Ky.—The Tappahannock wheat received last fall has done remarkably well, yielding about thirty-fold, and ripening from seven to ten days earlier than our other varieties.

Hopkins County, Ky.—The peck of Tappahannock wheat sent me by the Department, last fall, was sown broadcast, on fair tobacco land, on the 10th of October. It yielded eleven pecks of fair wheat, ripening about ten days earlier than the Mediterranean.

Boone County, Ky.—Tappahannock wheat yields more and ripens earlier than any other wheat grown in this county.

Livingstone County, Ky.—Without extra care or manuring, forty quarts of beautiful wheat have been harvested from one quart of Tappahannock.

Munroe County, Tenn.—The Tappahannock wheat sent me by the Department, last fall, was sown October 16th, on fresh land; it yielded well. For several years our principal crop has been of this variety. It is regarded as an excellent wheat for this climate.

McNairy County, Tenn.—The Tappahannock wheat does exceedingly well in this county; it stands the winter well, and is earlier than other varieties, and matures finely.

Sullivan County, Tenn.—The Talavera wheat has had a fair trial in five different localities in the county, and has proved a failure. The Odessa, or Russian Spring wheat, was received too late for a fair trial, but did well, yielding fifteen-fold on medium upland. The White Somerset oats are a valuable acquisition, yielding thirty-fold of the finest grain I ever saw. The Drumhead Savoy cabbage has done well. Yellow Danvers and Early Nocera onions were planted with the expectation of getting sets merely, but to our surprise produced fine large table onions. The Early Yellow bean is early and good.

Obion County, Tenn.—The Tappahannock wheat was sown November 1, proved hardy, and stands wet land better than any variety we have in the county. It yielded at the rate of eleven and one-half bushels per acre, more than an average for this section. Carter's First Crop and Saxton's New Early Prolific peas are preferable to other varieties. Stowell's Sweet corn is very early and prolific. The Large White Kidney bean, very prolific, but too tough for a summer bean. Long's Purple egg-plant did not come up. Nutting's Selected Dwarf beet proved a failure. The Imperial Sugar and Long's Blood-red beets are very fine, and well adapted to this climate and soil. Abergelde's kale is the finest I ever saw. Kemp's Incomparable, Carter's Early, and Tom Thumb cabbages all did well, but I prefer Kemp's Incomparable.

Washington County, Tenn.—Of the garden seeds sent me, the English peas were all sown the same day, consisting of Carter's First Crop, McLean's Little Gem, McLean's Imperial, and the Advance. They matured in the order named, and furnished a succession for the table for two months. The Evergreen and the Sweet corn did finely, and were in roasting ears before the dry weather commenced. The Student parsnip stood the dry weather well.

Phelps County, Mo.—Raised ten pounds of Tappahannock wheat from one sown the year before, and with the ten pounds (eight packages) sent

me last year, October 6th, I sowed twenty pounds Tappahannock wheat on corn ground, sandy loam, plowed six inches deep with turning plow, and well harrowed in and rolled in the spring. It was harvested June 18th, full three weeks earlier than other wheat in the same field sowed at the same time, and with the same culture. It was the first threshed in a new machine, to avoid mixing with the other w[illegible], and probably a peck remained in and about the machine, but I ha[illegible] four hundred and sixteen pounds of clean plump wheat, or about six and three-quarter bushels, weighing sixty-two pounds to the bushel, about twenty-one to one sowed; while my other wheat in the same field only yielded eleven to one. I think it will prove to be the best wheat for this county.

Stoddard County, Mo.—Our farmers are in ecstacy over the Tappahannock wheat sent me the last three years. Its lowest yield is thirty-five bushels per acre, its berry being unsurpassed. We sow only six-eighths or seven-eighths of a bushel per acre. It is by far the best wheat I have ever seen grow here.

Miller County, Mo.—On the 15th of last September I sowed four acres of Tappahannock wheat, which was threshed a few days ago and yielded thirty bushels to the acre. The grain is quite as good and heavy as the seed received from the Department, and is pronounced No. 1 by good judges.

Perry County, Mo.—The Excelsior oats have more than fulfilled all the expectations entertained of them, yielding, on good upland, over eighty-fold, and producing a heavier grain than the original seed. Sown on bottom land the yield is lighter and the grain smaller. This variety of oats may be harvested with the reaper, on account of its strong stalks. The Excelsior is a very valuable acquisition for our southwestern counties.

Howard County, Mo.—The Tappahannock wheat proves a very valuable variety. From a quart received in 1866, and sown each fall, the product is one hundred bushels plump wheat, far superior to any grown in this section. It yielded about one-third more than other varieties, or thirty bushels per acre, weighing sixty-six pounds to the bushel. For seed it is worth double the price of other varieties here, being ten days earlier than May wheat.

Cedar County, Mo.—I consider the Tappahannock to be an excellent variety of wheat for this soil and climate. Its introduction here should be encouraged by all means. The peck of Tappahannock wheat received was sown October 17th, on new first year's brush land, after cutting off the corn, and was harvested June 15th, giving a very good yield, clear of rust and smut. This variety appears to be hardy, and an excellent one for this climate and soil.

Benton County, Mo.—I received from the Department about one and a half pint of White Schonen oats, which I sowed on good, rich old soil. Harvested August 1st. The product showed an increase of nearly fifteen-fold. The land sown was about two-thirds of a rod. Judging from this, it would be safe to expect at least forty bushels to the acre.

Cedar County, Nev.—The Arnautka wheat and the Excelsior oats were received very late in the season, but have done exceedingly well and given a very large yield. Our seasons are short, and we require seed that matures early.

Miami County, Kan.—One quart of White Schonen oats, sowed broadcast, April 5th, produced sixty quarts, weighing thirty-three pounds to the bushel. Somerset oats, sowed same day, yielded fifty-four quarts, forty-one pounds to the bushel. Last-named variety ripened ten days sooner than the former.

Nemaha County, Kan.—One quart of White Schonen oats yielded two

bushels—excellent grain. One quart Black Swedish oats yielded one and a quarter bushel—a good variety. One pint of Probstier barley yielded one-half bushel, a better variety of spring barley than we have had here. Early Narraganset Sweet corn is very productive and good; Asylum Sugar is too much inclined to smut and mold; Early Purple kohl-rabi is a good variety, much prized. Hall's Westburgh Swede turnip is an improvement; I have a fine crop from seed furnished by the Department. Quintal cabbage looks exceedingly well.

Riley County, Kan.—The White Schonen oats, not yet threshed, promise an abundant yield. Brill's Early Extra Sweet corn, sweet and tender, but ears small; Burr's Mammoth, large ears, excellent quality. Early Yellow beans, prolific and of good quality; Early China, good quality, but moderate yield; Early Purple Vienna kohl-rabi, large, hardy, and good quality; Large Green Curled endive, an excellent grower, but a little tough and bitter. True Yellow Danvers onion, good size and very uniform; Large Tripoli, latest, uniformly very large; Weathersfield Large Red, mostly good size; Early Nocera, ten days earliest, moderate size, inclined to divide; White Lisbon, moderate size, divides some; Large Madeira, uniformly very large. Carter's First Crop peas, ready for use in sixty days, a very good early pea, of moderate yield; Advancer, ten days later, very prolific, and of superior quality.

Jackson County, Iowa.—So far as the Tappahannock wheat has been reported upon by the farmers in this section, to whom distribution was made late last fall, it has yielded at least twenty-fold, notwithstanding a very unfavorable season. The opinion is, that under favorable circumstances it will prove a very profitable fall wheat.

Clinton County, Iowa.—The Arnautka Spring wheat was sown April 24th, on ground in good condition, came up well, and grew rapidly until heading out, which was eight days in advance of the Tea and Scotch Fife wheats, sown by the side of the Arnautka and at the same time. But about July 1st it began to blight, and continued to grow worse until it was all dead. There was some scab on the Tea and Scotch Fife, but they will yield fifteen bushels per acre.

Muscatine County, Iowa.—The Tappahannock wheat received from the Department last fall has proved a failure. I think, however, it is not the fault of the variety, but rather the extreme lateness of the season (October 4) when I received it.

Linn County, Iowa.—The Tappahannock wheat a total failure. Looked first-rate at setting in of winter, but by 1st of April not a stalk was standing; completely winter-killed. Arnautka wheat also total failure; lodged before heading, and not a kernel perfected.

Jones County, Iowa.—The Somerset and Black Swedish oats, one wine-quart of each, were sown April 22d, on upland prairie soil fifteen years under cultivation, wi[illegible]t manure, and possessing some fox-tail grass seed which, owing to [illegible] wet season, closely covered the ground unoccupied by the oats, p[illegible]haps shortening the crop. The Somerset oats harvested thirty-seven pounds, the Black Swedish twenty-seven pounds; a better yield than that of our common oats, but not equal to that of the Norway. The Somerset were about two weeks earlier than the Black Swedish, and are the handsomest oats I ever saw. Both these varieties have a very stiff straw. I cannot pronounce on their comparative merits as feed.

Clayton County, Iowa.—Five pounds of Excelsior oats harvested seventy-eight pounds; forty-one to the bushel.

Floyd County, Iowa.—Carter's Leviathan pea is of large size and good quality, a great bearer, first-rate in every respect, attaining a height of

five feet; the Peabody is a dwarf pea, but a good bearer; I think it would do well for field culture. Crosby's New Sweet corn is early and good; Stowell's Sweet corn is an excellent late variety. Carter's New Yellow Mangold beet is of good quality, large size, and well adapted for feeding cattle. The same may be said of Carter's New Red Mangold beet. The Dwarf Blood and New Pine Apple beets are first-rate in quality. The Selected Scarlet carrot, good for table use and for stock. In respect to the onions, the White Lisbon is very large, and of good quality. The Large Tripoli and the Large Madeira are very large, but late. The Early Red Globe is not very large, but is of superior quality for summer use. The Red Weathersfield appears to be, in this region, the most suitable for the main crop—is of good quality, and keeps well. The Superfine Early cabbage is first-rate for summer use. The Drumhead Savoy, superior for winter use. Lenormand's Short-stemmed cauliflower is small, but good, and, in season, follows close after the Early Paris. The Early Round parsnip is very good for early use; the Hollow Crown, best for the main crop.

Fulton County, Ill.—On the 1st of November, 1867, I received a package of Tappahannock wheat, (1½ pound,) which I sowed immediately. It barely came up that fall. In July, 1868, I threshed twenty pounds of wheat equal in quality to that sown. I sowed the twenty pounds on the 15th of September, on thirty-two square rods; harvested on the 5th of July, 1869; threshed this week six bushels of as fine looking wheat as could be desired. I received a peck of wheat last fall, said to be imported from Odessa. I sowed it, but it has proved unsatisfactory; will sow the product, two bushels, and report the result. I also received several packages of oats and barley, said to be imported from Europe; but the wet season has been too much for them, all falling before they headed out. The partial failure of the spring wheat crop the past two seasons has produced a disposition among farmers to return to winter wheat. The winter of 1842–'43 was very severe and caused our first failure of winter wheat, which had been successfully raised in our county since 1822 to the former date. In the harvest of 1843 many fields were entire failures, while others yielded perhaps the amount of seed sown. In the spring of 1843 I procured from the North five bushels of spring wheat, which was sown on four acres and produced one hundred bushels of wheat. Other parties the same spring received small lots, which was the introduction of spring wheat into this county. From that time it spread, and in a few years was the leading wheat crop, and for many years there has been twenty acres of spring wheat to one of winter wheat. But I am satisfied that in future winter wheat and rye will receive more attention than they have for some time past.

Crawford County, Ill.—The Polish wheat, received October 6, was sown on the 7th, and proved to be a very late variety; was struck with the rust and proved worthless. The Black Swedish and White Schonen oats were late, and were also struck with the rust and proved a failure. The Probstier barley was a failure. Large Red onion, an excellent variety.

Whiteside County, Ill.—The Arnautka spring wheat, sent from the Department, was sown April 13, 1869, two weeks late. It was badly blighted, probably in consequence of the wet season. The White Schonen oats were sown April 13th; extra quality; yield probably seventy-five bushels per acre; a desirable acquisition to the country. The Probstier barley was sown April 13th; good quality; yield probably forty bushels per acre; is worthy of further trial.

Massac County, Ill.—The Tappahannock wheat yielded very well, and is found to be suited to this country.

St. Clair County, Ill.—The Norway and Saxony oats sent by the Department have produced excellent crops. The dissemination of these valuable varieties ought to be encouraged.

Jackson County, Ind.—Three pecks of Tappahannock wheat yielded eighteen bushels.

Sangamon County, Ill.—Sowed White Schonen oats April 15th; yielded a fair crop of superior oats. I do not consider the Black Swedish oats much if any better than the common black oats of the country. The Probstier barley did well; heads long and well filled. Superfine Early cabbage planted in hot-bed March 31st; ready for table use June 28th; earlier, larger, and of better quality than Early York. Narragansett Sweet corn fit for table use in twelve weeks and three days after planting. Crosby's New Sweet corn matured about one week earlier. Asylum Sugar corn planted May 11th, and gathered for table use and drying August 14th. The Crosby and the Asylum are both of good size in stalk, ear, and grain; very sweet and prolific. In 1868 I planted Carter's First Crop peas, received from the Department, and gathered part of the crop for seed, carefully selecting the best pods first ripe and nearest the ground. In March, 1869, I received from the Department another package of the same kind. Part of these were planted by the side of the home grown, on 31st March. The latter were in full bloom May 21st, while the former were two days later. On the 5th of June, nine weeks and three days from planting, nearly all were ready for the table; the home grown, however, making the strongest growth of vines, of a darker green color, the pods larger and more abundant, and two days earlier. I cannot see that Dunnett's First Early is better in any respect than Carter's First Crop, after experimenting with both. The Large Smooth Red tomato, Lester's Perfected, and the Tilden, received from the Department, were carefully planted and tested; but none of them equal in earliness, uniformity of size, or smoothness, nor do any surpass, in productiveness or quality, the Tilden I have grown for several years.

Bureau County, Ill.—Notes on seeds received from the Department. October 10, 1868, sowed Poland, Tappahannock, Red Mediterranean, and California White Winter wheat. The last two totally winter killed; Tappahannock partially killed, and blasted before ripe; Poland grew well, but was attacked by scab and no perfect grains left in the heads. Sowed Arnautka spring wheat April 9, 1869; it throve well until the scab took the whole of it. Excelsior oats did well, as did also the White Schonen. Black Swedish oats grew well, but quality medium. Saxonian barley sowed April 2d; heads did not come out until middle of July, and amounted to nothing; soil, sandy loam.

Washington County, Ind.—The Tappahannock wheat has yielded quite well, but not greater than some other varieties. In several cases the smut has hurt it severely. Some parties have used vitriol on their seed and think it a sure preventive.

Spencer County, Ind.—I received thirteen pounds of Tappahannock wheat of S. W. Fairfield, in October last, and, at the same time, fifteen pounds from James Cavin, secretary of the Agricultural Society. I sowed both on the 12th of October, upon good land, from which tobacco had been cut. It stood the winter well for late-sown wheat. I did not note the date of harvesting, but of five varieties I was cultivating it was the earliest. It filled well. I threshed it by tramping out with horses to prevent mixing; yield ten and a-half bushels. I am very well

pleased with it. I received a small package of Schonen oats of S. W. Fairfield. Sowed on good land on the 15th of April; harrowed in carefully. Harvested about the usual time of harvesting oats; rubbed out one and a fourth bushel of seed of good quality.

Brown County, Ind.—I raised one and three-fourths bushel of Tappahannock wheat from eight quarts, sown broadcast, October 12th; harvested July 1st. Grain large and plump. I am convinced that it is a splendid wheat for rich bottom land.

Jasper County, Ind.—The ten pounds of Tappahannock wheat sent me by the Department was sown on the 24th of October, on sandy hazel land from which a corn crop had been removed. It was fully ripe by July 4th. About two per cent. was lost by admixture with other wheat, which I carefully plucked out in order to have only the pure Tappahannock. Yield, three bushels, weighing sixty-three pounds. It is admirably adapted to this climate.

Indianapolis, Ind.—The oats (one bushel each of Excelsior and Schonen) received last spring were sown, together with the common barley oats, on the 8th of April, each receiving the same care; and when ready for harvest it was difficult to decide whether the Excelsior and Barley were not identical. The Excelsior may have been a little heavier in grain, but the yield was large with each. The Schonen is a late variety, and I think good for feeding with the straw. The onions, beans, cabbage, &c., received, have all done well. Early Nigora onion did finely, ripening as early as those from sets put out earlier. Yellow Dutch promises well, while the Weathersfield has done magnificently. The turnips are on trial. An experiment with Early Rose potato gave, from three pounds planted, five hundred and thirteen pounds, with ninety-three hills yet to dig. About half the eyes were started in a hot-bed, while the rest were planted, one eye to the hill, in the open ground. Best results from those planted in open ground. The quality is unsurpassed. Rot and mildew have destroyed most of our grape crop. The Concord has suffered badly, while the Isabella and Catawba, heretofore suffering badly from rot, are comparatively free. This is a nut to crack.

Washington County, Ohio. Inclosed are a few heads of Rough Chaff wheat produced from that received from the Department last fall. I feel much disappointed at the result. It promised well until about the 20th of June, from which time it seemed to remain for several days without change except growing a little dull in color—my other wheat turning quite yellow. On examining it, I found that the stalks appeared to be dead and the grains filled, as you will see. I discovered no rust upon the stalks or blades. I regret very much that so fine a wheat should fail here, and hope that other persons have been more successful with it. The stalks were rather short, but large, and stood erect. If it does well with others I shall try it again.

Wood County, Ohio.—The Rough Chaff wheat, sent me last October, was sown, but it was so late that it did not come up until spring, and was so badly struck with rust that I fear not one grain in fifty will grow. The Tappahannock wheat received at the same time is also badly injured with rust, but most of it will germinate. The Russian Apple scions are all growing and doing well.

Logan County, Ohio.—The Tappahannock wheat is regarded as a success. It is ten days earlier than ordinary varieties, and the grain is plump and full.

Highland County, Ohio.—The Tappahannock wheat sent here from the Department is giving great satisfaction. One farmer reports that he

sowed the quart sent, with the following result: Product first year, twenty-two pounds; second year, four and a half bushels. From this, the third year, he has four acres, which he thinks will make one hundred and twenty bushels. The quality is very fine. It stands up well on rich ground, and ripens a week or ten days earlier than the Red Chaff. All the grains are perfect.

Hardin County, Ohio.—The peck of Tappahannock wheat sent by the Department produced three and a-half bushels of beautiful grain. It is earlier and better than the usual varieties of wheat cultivated here.

Champaign County, Ohio.—I received one quart of Tappahannock wheat from the Department three years ago this fall, from which I have this year raised and threshed one hundred and twenty bushels of as good quality as the sample, and have probably twenty bushels not yet threshed. All who see it want it. The low condition of the apples and peaches, after the fine appearance of early spring, is owing to the fact that the apples and peaches have mostly fallen off, caused by insects of some kind; and what remain on the trees are of a very poor quality. The Schweinfurt cabbage is large and fine, and ten days earlier than the Winningstadt, but not so solid; the Superfine Early, too small for a market variety; the Large Late Winter Drumhead Savoy, very large and fine.

Henry County, Ohio.—The Tappahannock wheat received two years ago from the Department has been grown two years in drills. The second season one bushel drilled, on one hundred and forty square rods, yielded twenty-two and one-half bushels, or at the rate of twenty-five and six-sevenths bushels per acre, while the Michigan White variety, in the same field, yielded only eighteen bushels per acre; the Tappahannock ripening two weeks earlier, and giving a much finer grain.

Mercer County, Ohio.—The Swedish oats received from the Department two years ago are a great success, ripening earlier, producing more bushels, and weighing one-third more than our common varieties.

Hancock County, Ohio.—The Tappahannock wheat gives excellent satisfaction.

Meigs County, Ohio.—John Karr sowed broadcast eight bushels of Tappahannock wheat on second or high creek bottom land; product, one hundred and eighty-six bushels of clean wheat. Robert Crambs sowed broadcast one and a half bushel on fallow ground, sandy hill land, formerly timbered with white oak and poplar; product, forty-eight bushels; the yield of one acre forty-four bushels and five pounds. Joseph C. Stewart raised forty-five bushels of Surprise oats, which averaged forty-five pounds to the bushel.

Bowling Green, Ohio.—The English Excelsior oats grow one foor higher and give much larger product than the common oats. The Narragansett Sweet corn proves a very early and good variety.

Rice County, Minn.—I received exactly eight pounds of the Arnautka wheat from the Department, which I sowed on the 27th of April last. The ground was new breaking, consequently the best for any kind of wheat in this country. I sowed, on the same day, Scotch Fife on the same kind of ground, in order to see which would ripen first. The Arnautka was fit to cut about one week earlier than the Scotch Fife. The straw or stem of the Arnautka is fully as strong as that of the Scotch Fife. It is a bearded wheat, and resembles the "Hedgerow wheat," formerly raised in Illinois, except that the heads are much larger. The berry of the Arnautka wheat is unquestionably the largest that has ever come under my observation, and I have every reason to believe that it is one of the best kinds of wheat for large yield that has ever been intro-

duced into this State. I think I can thresh about five bushels from the eight pounds sowed; at this rate the yield would be forty bushels from a bushel and four pounds of seed, or about sixty bushels to the acre, by sowing one and a half bushel to the acre. I do not think it will do quite so well on old ground that has raised wheat for a large number of years, but I do believe it will average fifty bushels per acre on any ground that is fit to raise any other kind of wheat.

Cass County, Mich.—The Tappahannock wheat received from the Department, the third crop of which has been grown here, I place among the very best varieties of white winter wheat, although the indications of last spring were that it may not be quite so winter hardy as some others.

Gratiot County, Mich.—The Tappahannock wheat has done well; the Arnautka was badly shrunk. The Schonen oats did well for the season.

Rock County, Wis.—The Tappahannock stood the winter until the last severe frost in March, which totally destroyed it. The White Schonen oats are all that they were recommended to be; Black Swedish oats ruined by rust; Surprise oats sustain their reputation well.

Green County, Wis.—I sowed the Tappahannock wheat October 1, but the season was unfavorable for winter wheat, and the product is small though the quality is good. The Arnautka was sown early in April, and yielded double the quantity of the winter wheat—quality good. The Schweinfurth cabbage excels any variety I ever tried to raise. Beets sent to me by the Department are of the largest size and finest quality. Nearly all the seeds have proved valuable.

Lane County, Utah.—I received twenty-seven pounds of Tappahannock wheat from the Department last fall, which I sowed on one-half acre of stiff clay land without manure, and have this day threshed it and have twenty-four bushels of good merchantable wheat. The grasshoppers have worked upon it all summer. I have done so well I shall try it again.

Box Elder County, Utah.—I think the Tappahannock wheat will prove a valuable variety for this section of the country. Its liability to smut can be obviated by wet-liming thoroughly, and then drying, about one month before sowing. The wheat should not be in the solution (which should be very thick) longer than thoroughly to mix.

CROPS IN OREGON.

Douglass County, Oregon.—The season has been remarkably dry. There was very little rain during the winter, compared with other years. We had no rain to speak of in March until the 29th, and not much then. It rained the whole of the twenty-four hours on the 16th of April, which constitutes the most of the rain we have had since the 9th of February, although we have had some light showers, in many instances not sufficient to lay the dust. Spring-sown crops, generally speaking, are very light. In many instances oats did not fill. The straw is also very short, making it difficult to save the grain. Autumn and early winter sowed grains are generally good. There is here and there a good piece of spring-sown grain, but it is the exception, not the rule, where the land was inclined to be damp. Grass of all varieties is the shortest crop I have ever seen in this valley. Corn is good, better than last year; it seems to stand the drought first-rate. This valley is the best part of Oregon for corn west of the Cascade Mountains. We have had no frost that would cut corn or vegetables since the 7th of March, and but very little during the whole winter. There were very slight frosts on the 23d and 27th of April and on the 25th of May, but not enough to injure vegetation. From what I can learn among farmers that have done their threshing, I do not think

wheat will average over fifteen bushels per acre; oats, twenty-five bushels; barley, twenty-five bushels—a very light average for this country. The average of potatoes will be next to none, unless we soon have rain in considerable quantities. The yield of corn will be good. The last week in April, and the first two weeks in May, this vicinity was infested with caterpillars to a great extent. They were so numerous that they denuded the black oak trees of their foliage in many places, and also injured the orchards to a considerable extent. My own orchard suffered the most, so far as I can learn. Out of nine hundred bearing trees, on the middle of May over seven hundred did not have a leaf left—leaves and fruit all destroyed by the ravages of the caterpillar, although I worked early and late to save them.

DRAINAGE FOR FRUIT TREES.

Hancock County, Ill.—Mr. Lewis Stracke, of Warsaw, in this county, has ten acres of land, one-fourth of which is occupied by his mansion and grounds, the remainder being orchard and vineyard. The whole tract is underdrained with tile placed at an average distance of forty feet apart, and at the depth of four feet. The size of the main pipe is three inches; of the minor drains, two inches. An example of the operation of this system of drainage is given as follows: On Sunday, July 25th, a heavy rain fell, drenching the soil with water to such an extent that on the following Wednesday the main drain was discharging, according to estimate, three or four gallons per minute, while the surface of the soil was dry enough to work on Tuesday morning, July 27th. Similar land, not underdrained, would not have been fit to plow in less than a week. One portion of this tract is devoted to an orchard of 1,300 standard and dwarf pear trees, planted in the spring of 1867. They are set at a distance of ten feet apart each way, in squares, every other tree in each alternate row being a standard, thus putting the standards twenty feet apart. One object of this arrangement is that if, in time, the dwarfs should fail, the standards may, by their growth, sufficiently occupy the ground. Two hundred and twenty-five of the trees are Bartletts, the remainder being apportioned to other approved varieties. The orchard receives careful attention, and is very healthy and promising. The vineyard was planted in the fall of 1867, and contains 2,400 vines, as follows: Delawares, 1,000; Ionas, 750; Ives Seedlings, 350; the remainder being principally Concords and Norton's Virginia. This vineyard, in addition to underdraining, was trenched with the spade, two feet deep, at a cost of nearly $200 per acre.

A SECOND CROP OF WATERMELONS.

Lee County, Alabama.—I have ripening a second crop of watermelons on the second system of vines, on old stumps. The old vines were cut away as soon as the first crop of melons matured. In quantity, the second crop is about one-third of the first; in quality, slightly inferior. I have fine ripe watermelons from 8th of July planting. Some ripened within seventy days from the date of planting. Dug holes one foot deep, used one-fourth of a bushel of barnyard manure and two ounces of soluble Pacific guano to each hill. The stumps producing the second crop were carefully hoed; deep cultivation would be destructive of the horizontal or lateral roots.

RYE STRAW.

Schenectady, N. Y.—The quantity of rye straw shipped from this county the past year amounts to four thousand eight hundred and forty-two tons, principally to paper-mills in Washington, Saratoga, Herkimer, and Albany Counties in this State, and some in bales to New York and Boston ports. The prices paid were $20 per ton for hand-threshed, and $16 per ton for machine-threshed. The straw was all raised on the uplands in this county, and what was lost as manure is made up by clover and other fertilizers—principally western gypsum.

SWEET POTATOES IN DELAWARE.

Milford, Del.—Some of our farmers have lost all their sweet potatoes, the plants being attacked by a gold-colored and black bug. What the dry weather did not kill the bugs did. One farmer in this immediate vicinity set out twenty thousand plants; was obliged to reset nearly all of them; they seemed to be doing well; had them cultivated, and upon going to them two or three days afterwards found that the bugs had destroyed almost the entire lot. He then plowed up the land, and has since sown it with turnips.

THE CASHMERE GOAT IN TENNESSEE.

Williamson County, Tenn.—The Cashmere goats of this county are rapidly increasing. The experiment of crossing the common goat with the Cashmere has been tested thoroughly in this county, and has proved a success.

IDAHO TERRITORY.

James H. Whitson, president of the Idaho Agricultural Society, writes as follows in reference to agriculture in Idaho:

The agricultural area of this Territory, though limited, is not near all taken up. There are valleys now susceptible of safe settlement (the Indians having vacated them by treaty, &c.) equal in fertility to any on this coast. Some few settlers have raised, the first season, as high as sixty bushels of wheat to the acre. In the immediate vicinity of these valleys, generally, are the best of grazing lands, too hilly for cultivation, with plenty of small clear streams. In a word, the greater portion of the Territory is one grand pasture, where stock can be fattened winter or summer, for when the summer grass gives out we only have to move our stock to the great white sedge plains, where they fatten all winter. We never feed cattle or sheep for beef or mutton, and our meat market will compare favorably with the eastern stall-fed cattle and sheep markets.

Dairying is being carried on quite extensively in the Territory, the number of milkers ranging from twenty to over one hundred cows; never feeding over six weeks during winter, (since the winter of 1864,) and then generally only straw. If we get good fall rains (the only failure of which was last fall) we have plenty of green grass till the first of January, and sometimes all winter. Cattle, sheep, and hogs are remarkably healthy generally; horses are subject to mountain fever when ridden or driven hard in the fall and winter, owing no doubt to the coldness of the nights and the carelessness of the owners.

At first we were dependent upon Oregon for our grain, flour, and bacon and whisky; now we raise and manufacture all these, and fur-

nish the military posts in our midst, and all our mining camps. In the spring of 1865 I paid as high as $18, coin, for fifty-pound sacks of flour, and $75 per hundred pounds of bacon; now flour is $3 per sack, and bacon twenty cents per pound.

We have three first-class flouring mills, water-power, and two steam distilleries in and near Boise City. There are also enough saw-mills in the country to furnish the necessary lumber for building, fencing, &c.; these are located in the mountains. Lumber at the mills, $25 per thousand; in Boise City, $40 per thousand.

Wheat, one year with another, will average twenty-five bushels per acre, oats, thirty-five to forty; barley, fifty to sixty. There are cases where sixty bushels of wheat have been raised to the acre, and one hundred bushels of barley per acre. This year from one square rod I produced fifty-four pounds of wheat, which is at the rate of one hundred and forty-four bushels to the acre. I gave it the name of "Idaho White wheat." I think it will be found to be a superior wheat; will mature here sown fall or spring; it is beardless, white, and produces a large amount of flour.

Vegetables and melons of all kinds grow to perfection. Our climate is congenial—health the general rule, sickness the exception.

The Territory is in great excitement at this time, in consequence of very rich placer diggings which have been discovered this season.

WASHINGTON TERRITORY.

A. H. Simmons, secretary of the Washington Territory Agricultural Society, sends the following statistics of the Walla-Walla Valley:

Average yield per acre.—Twenty-five bushels wheat, 30 bushels oats, 30 bushels barley, 40 bushels corn, 20 bushels rye, 40 bushels peas, 36 bushels beans, 300 bushels potatoes, 200 bushels sweet potatoes, 300 bushels turnips, 1,000 bushels carrots, 800 bushels parsnips, 20,000 pounds cabbage, 2½ tons hay. Forty thousand pounds apples, 30,000 pounds peaches, 40,000 pounds pears, 50,000 pounds plums, 20,000 pounds cherries, 40,000 pounds grapes, 15,000 pounds blackberries, 15,000 pounds raspberries, 5,000 pounds gooseberries, 10,000 pounds currants. Trees seven years old.

YIELD OF EACH TREE, VINE, PLANT, AND SHRUB.

	1st year.	2d year.	3d year.	4th year.
	lbs.	*lbs.*	*lbs.*	*lbs.*
Apples	20	50	125	250
Peaches	15	35	100	200
Pears	20	50	125	250
Plums	20	50	125	250
Cherries	5	15	50	100
The trees bear from graft in three years.				
FROM OFFSHOOTS.				
Blackberries	3	8	15	35
Raspberries	3	10	20	40
Strawberries		1½	2	2
Grapes, (at 2 years)	3	10	25	75
Gooseberries, "	2	5	10	20
Currants, "	2	5	10	20
Pie plant, "	8	20	20	10

The various cereals and fruits of this valley are harvested as follows: Wheat from the 24th of June to 10th of July; oats, from 1st of July to 20th of July; barley, from 20th June to 1st of July; rye, from 1st of July to 10th of July; corn, from 20th of August to 10th of September: strawberries, from 1st of May to 10th of June; raspberries, from 10th of June to 20th of July; blackberries, from 25th of June to 1st of August; gooseberries, from 20th of June to 1st of July; cherries, from 20th of May to 1st of July.

LIVE STOCK AT CHICAGO.

A statement, furnished by George T. Williams, assistant secretary, of the receipts and shipments of live stock at the Union Stock-yards, Chicago, for each month of the quarter ending September 30, 1869, presents the following totals:

RECEIPTS.

Source of supply.	Cattle.	Hogs.	Sheep.	Horses
Illinois Central railroad	18,803	83,514	19,767	101
Chicago and Rock Island railroad	14,723	46,128	2,408	19
Michigan Central railroad	826	4,512	2,150	13
Pittsburg, Fort Wayne and Chicago railroad	175	1,001	1,260	78
Chicago and Great Eastern railway	326	1,209	1,528	2
Chicago and Alton railroad	25,578	55,839	6,120	28
Chicago, Burlington and Quincy railroad	36,179	111,440	14,132	57
Chicago and Northwestern railway	9,483	56,845	8,148	18
Michigan Southern railroad	687	6,588	4,746	79
Driven into yards	720	313	882	.....
Total	107,500	367,389	61,141	395

SHIPMENTS.

Illinois Central railroad	94	380	270	.....
Chicago and Rock Island railroad	1,547	249	306	2
Michigan Central railroad	22,940	50,505	1,257	8
Pittsburg, Fort Wayne and Chicago railroad	33,364	116,066	626	40
Chicago and Great Eastern railway	2,744	397	379	20
Chicago and Alton railroad	411	278	99	10
Chicago, Burlington and Quincy railroad	394	91	197	22
Chicago and Northwestern railway	1,628	1,007	1,179	200
Michigan Southern railroad	15,218	178,210	975	51
Total	78,340	347,183	5,288	353

NATIONAL EXHIBITION AT CORDOVA, (ARGENTINE REPUBLIC.)

A national exhibition of the products of art, industry, and science, will be inaugurated in the city of Cordova, in the Argentine Republic, on the 17th of April, 1870. As the termination of the Central Argentine railway, connecting Cordova with Rosario, a seaport town, will be celebrated at the same time and place, thousands will doubtless be attracted from the republic, as well as from Brazil, Paraguay, and Uru-

guay, which will be a good opportunity for American manufacturers and merchants to introduce their goods to these large and rich markets.

Manufacturers of agricultural implements and all other machinery are requested to send specimens of the same. They will be allowed to pass free of duty through the custom-house at Rosario, and should be marked [E. N. C.], consigned to the provincial committee at that city, which will be forwarded by the national government to Cordova; but if not sold in that city, exhibitors will take them back at their own expense. Foreign exhibitors will be allowed forty dollars in gold at Cordova, as sole compensation for each mechanic they send to explain the mechanism of their machinery. By the 1st of December (and in no case later than the 15th) persons desirous of contributing to the exhibition should address one of the following gentlemen, stating the space (in meters and square yards) required for their accommodation; and all contributions must be in Cordova by the 15th of March, 1870:

His Excellency Manuel R. Garcia, minister plenipotentiary and envoy extraordinary of the Argentine Republic. Address P. O. box 245, Washington, D. C. Office, No. 457 I street.

Edward F. Davison, esq., Argentine consul general. Office, 128 Pearl street, New York city.

Belisario Roldan, esq., special agent of the central committee; at the consul general's office.

C. H. Trumbull, esq., 56 South street, New York City.

Charles Heinsius, esq., Argentine consul, Savannah, Georgia.

Charles Morton Stewart, esq., Argentine consul, Baltimore, Maryland.

David D. Stackpole, esq., Argentine consul, Boston, Massachusetts.

Andreas Spring. esq., Argentine consul, Portland, Maine.

Nalbo Frasier, Argentine consul, Philadelphia, Pennsylvania.

Further particulars can be learned by addressing either of the above gentlemen, who will furnish circulars comprising all necessary information.

METEOROLOGY.

COMPILED IN THE DEPARTMENT OF AGRICULTURE FROM REPORTS MADE BY THE OBSERVERS OF THE SMITHSONIAN INSTITUTION.

Table showing the highest and lowest range of the thermometer, (with dates prefixed,) the mean temperature and amount of rain, (in inches and tenths,) for September, 1869, by the observers and at the stations named. Daily observations at 7 a. m. and 2 and 9 p. m.

States and stations.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MAINE.				°		°	°	*In.*
Houlton	Aroostook	Chas. H. Fernald	5	84	28	36	62.7	2.10
Steuben	Washington	J. D. Parker	5	77	28	37	56.4	2.00
West Waterville	Kennebec	B. F. Wilbur	5	86	28	40	62.4	5.09
Gardiner	Kennebec	R. H. Gardiner	7	78	28	41	60.8	3.37
Norway	Oxford	H. D. Smith	6	86	28	34	60.4	4.40
Cornish	York	Silas West	5	81	28	40	60.4	3.38
Cornishville	York	G. W. Guptill	5, 6	82	28	40	63.0	4.17
Averages							60.9	3.50
NEW HAMPSHIRE.								
Stratford	Coos	Branch Brown	15	83	28	33	59.9	3.39
Whitefield	Coos	L. D. Kidder	5, 6	82	28	32	59.2	3.55
Goffstown Center	Hillsboro'	Alfred Colby	5	87	29	43	62.9	3.76
Averages							60.7	3.57
VERMONT.								
Lunenburg	Essex	H. A. Cutting	8	84	28	36	62.1	2.60
Randolph	Orange	Chas. S. Paine	7	85	28	35	61.7	2.35
Woodstock	Windsor	Doton & Miller	5	80	28	34	59.1	3.44
Hartford	Windsor	B. F. Eaton, M. D	20	82	27	38	66.3	2.90
Near St. Albans	Franklin	A. H. Gilmour	8	84	28	38	62.4	.....
West Charlotte	Chittenden	Miss M. E. Wing	8	87	27, 28	43	67.0	3.84
Middlebury	Addison	H. A. Sheldon	8	79	28	37	62.6	3.08
Panton	Addison	D. C. Barto	7	84	28	40	64.3	3.88
Averages							63.2	3.16
MASSACHUSETTS.								
Kingston	Plymouth	G. S. Newcomb	20	86	28	36	63.0	3.00
Topsfield	Essex	S. A. Merriam	20	85	28	37	63.3	3.54
Newbury	Essex	John H. Caldwell	5, 8	82	28	36	61.5	.....
Milton	Norfolk	Rev. A. K. Teele	20	91	28	40	60.5	3.78
Cambridge	Middlesex	Rev. J. B. Perry	20	86	28	42	63.1	.....
North Billerica	Middlesex	Rev. Elias Nason	20	86	28	36	63.9	.....
West Newton	Middlesex	John H. Bixby	20	91	29	38	64.8	8.83
New Bedford	Bristol	Samuel Rodman	20	85	28	41	61.3	2.53
Worcester	Worcester	Jos. Draper, M. D	20	83	28	39	62.5	4.74

Table showing the range of the thermometer, &c., for September—Continued.

States and stations.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MASS.—Continued.				°		°	°	In.
Mendon	Worcester	Jno. G. Metcalf, M. D.	20	84	28	35	62 3	6. 60
Lunenburg	Worcester	Geo. A. Cunningham.	20	87	28	38	62. 6	3. 90
Amherst	Hampshire	Prof. E. S. Snell	20	85	28	36	62. 1	4. 32
Williams College	Berkshire	Prof. A. Hopkins	7, 20	82	28	38	61. 6	3. 18
Hinsdale	Berkshire	Rev. E. Dewhurst	20	80	27, 28	36	60. 3	4. 30
Averages							62. 3	4. 35
RHODE ISLAND.								
Newport	Newport	W. H. C andall	20	82	28	46	63. 6	3. 19
CONNECTICUT.								
Columbia	Tolland	Wm. H. Yeomans	20	90	28	38	63. 4	
Middletown	Middlesex	Prof. Jno. Johnston	20	88	28	37	63. 4	3. 66
Colebrook	Litchfield	Charlotte Rockwell	20	82	28	36	61. 2	5. 25
Brookfield	Fairfield	Rev. S. W. Roe	20	86	29	40	64. 0	3. 70
Averages							63. 0	4. 20
NEW YORK.								
Moriches	Suffolk	E. A. Smith & daugh's	20	96	28, 29	45	67. 3	5. 69
South Hartford	Washington	G. M. Ingalsbe	7	88	28	39	67. 2	3. 10
Hudson	Columbia	G. P. Hachenberg, MD	7, 20	87	29	42	66. 2	3. 68
Garrison's	Putnam	Thos. B. Arden	20	88	28	44	65. 2	4. 26
Throg's Neck	Westchester	Miss E. Morris	20	86	28	44	65. 9	
White Plains	Westchester	O. R. Willis	20	82	28, 29	44	63. 2	
Deaf and Dumb Ins.	New York	Prof. O. W. Morris	20	86	27	48	67. 6	4. 07
Columbia College	New York	Prof. Chas. A. Joy	20	86	27, 28	51	68. 4	2. 72
Flatbush	Kings	Rev. Eli T. Mack	20	85	28	45	65. 5	3. 46
Glasco	Ulster	D. B. Hendricks	16	88	27, 28	43	65. 2	3. 07
Minaville	Montgomery	J. W. Bussing	20	85	28	40	63. 9	4. 70
Gouverneur	St. Lawrence	C. H. Russell	7	79	28	35	61. 1	4. 05
North Hammond	St. Lawrence	C. A. Wooster	14, 15	88	28	38	64. 6	5. 30
Houseville	Lewis	Walter D. Yale	20	83	28	34	62. 0	6. 12
Leyden	Lewis	C. C. Merriam	20	79	28	34	59. 5	6. 29
South Trenton	Oneida	Storrs Barrows	6	86	27	40	62. 1	5. 28
Cazenovia	Madison	Prof. Wm. Soule	20	81	27	40	61. 6	
Oneida	Madison	S. Spooner, M. D	13	88	28	42	62. 0	5. 14
Depauville	Jefferson	Henry Haas	5	82	27	34	58. 5	6. 95
Oswego	Oswego	Wm. S. Malcolm	7	81	27	44	63. 1	3. 65
Palermo	Oswego	E. B. Bartlett	20	85	28	40	61. 7	3. 80
North Volney	Oswego	J. M. Patrick	19, 20	85	27	41	68. 5	
Perry City	Schuyler	C. P. Murphy	20	91	28	41	65. 0	
Waterburg	Tompkins	D. Trowbridge	19	89	28	36	61. 0	
Nichols	Tioga	Robert Howell	5, 20	36	27	38	62. 5	
Newark Valley	Tioga	Rev. Sam'l Johnson	20	86	27, 29	38	61. 4	3. 90
Himrods	Yates	Gilbert D. Baker	20	83	28	40	62. 1	3. 06
Rochester	Monroe	H. W. Mathews	19	80	27, 28	44	63. 4	5. 11
Little Genesee	Allegany	Daniel Edwards	19	85	29	34	60. 4	4. 75
Suspension Bridge	Niagara	W. Martin Jones	20	88	28	39	63. 2	
Buffalo	Erie	Wm. Ives	24	87	27	39	65. 8	7. 43
Averages							63. 7	4. 59

Table showing the range of the thermometer, &c., for September—Continued.

States and stations.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
NEW JERSEY.								
				°		°	°	*In.*
Paterson	Passaic	Wm. Brooks	20	88	28, 29	42	64.8	2.98
Newark	Essex	W. A. Whitehead	20	86	28, 29	43	64.2	2.54
Trenton	Mercer	E. R. Cook	7, 20	85	28	46	68.5	1.98
Rio Grande	Cape May	Mrs. J. R. Palmer	20	90	28	40	67.6	3.75
Moorestown	Burlington	Thos. J. Beans	20	87	28, 29	47	65.6	3.23
New Germantown	Hunterdon	Arthur B. Noll	20	88	28	39	64.9	3.82
Readington	Hunterdon	John Fleming	13	92	29	38	64.7	.....
Haddonfield	Camden	John Boadle	20	85	27, 28	46	65.7	2.70
Newfield	Gloucester	E. D. Couch	7	90	28, 30	42	66.3	.....
Greenwich	Cumberland	Miss R. C. Sheppard	21	84	29	45	66.1	3.10
Vineland	Cumberland	John Ingram, M. D	6	86	28	42	67.3	6.63
Averages							66.0	3.41
PENNSYLVANIA.								
Nyces	Pike	John Grathwohl	6	85	28	30	61.0	4.30
Hamlinton	Wayne	Jas. D. Stocker	5	88	27, 28	40	62.5	5.85
Dyberry	Wayne	Theodore Day	5	84	25, 29	32	58.8	4.33
Fallsington	Bucks	Eben'r Hance	20	85	28	46	66.3	3.60
Philadelphia	Philadelphia	Prof. J. A. Kirkpatrick	20	86	28	49	68.6	3.27
Germantown	Philadelphia	Thos. Meehan	6	86	28	41	67.1	.....
Horsham	Montgomery	Miss Anna Spencer	10	88	28	44	65.4	4.80
Plymouth Meeting	Montgomery	M. H. Corson	20	84	29	41	65.3	3.82
Whitehall	Lehigh	Edward Kohler	7	83	29	38	64.4	.....
Factoryville	Wyoming	Rodman Sisson	20	83	28	33	61.3	3.65
Reading	Berks	J. Heyl Raser	7	85	29	42	66.0	4.63
Parkersville	Chester	F. Darlington, M. D	20, 21	87	29	43	67.2	5.19
Ephrata	Lancaster	W. H. Spera	8, 21	90	29	45	70.9	4.83
Mount Joy	Lancaster	J. R. Hoffer	21	87	29	42	66.8	.....
Carlisle	Cumberland	Wm. H. Cook, M. D	7, 20	90	29	40	66.1	1.90
Fountain Dale	Adams	S. C. Walker	21	85	28	43	63.8	2.84
Tioga	Tioga	E. T. Bentley	7, 15, 17, 19, 20, 22, 23, 24	84	28, 29	38	62.0	6.00
Lewisburg	Union	Prof. C. S. James	7 20, 21	85	27	38	63.3	2.92
Grampian Hills	Clearfield	Elisha Fenton	20	85	29	33	59.3	3.96
Johnstown	Cambria	David Peelor	19	86	29	36	60.9	3.03
Franklin	Venango	Rev. M. A. Tolman	20	86	29	40	62.0	10.19
onnellsville	Fayette	John Taylor	25	87	28	36	63.0	.....
ew Castle	Lawrence	E. M. McConnell	19	81	28	35	62.0	.....
eaver	Beaver	Rev. R. T. Taylor	6, 19, 20, 24	80	27, 29	43	63.2	10.80
anonsburg	Washington	Rev. Wm. Smith, D. D	19, 24	88	28, 29	35	63.0	5.69
Averages							64.0	4.79
DELAWARE.								
Milford	Kent	Mrs. A. C. Whittier	5, 21	89	27	43	68.0	3.20
MARYLAND.								
oodlawn	Cecil	Jas. O. McCormick	21	88	29	44	66.4	3.04
Annapolis	Anne Arundel	Wm. R. Goodman	21	87	28	42	69.3	4.04
Mt. St. Mary's	Frederick	Prof. C. H. Jourdan	21	85	29	44	61.5	2.59
Averages							65.7	3.22

Table showing the range of the thermometer, &c., for September—Continued.

States and stations.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
DIST. COLUMBIA.				°		°	°	*Ins.*
Washington	Washington	Smithsonian Institu'n	21	86	28, 29	49	68.2	2.40
VIRGINIA.								
Johnsontown	Northampton	C. R. Moore	21	90	29	50	69.6	2.20
Hampton	Elizabeth City	Jas. M. Sherman	21	92	29	46	70.5	1.10
Zuni Station	Isle of Wight	Robt. Binford	23	90	29	44	69.2	3.68
Bacon's Castle	Surry	B. W. Jones	8	92	29	48	71.6	.....
Comorn	King George	E. Taylor	21	86	28	53	70.2	3.29
Vienna	Fairfax	H. C. Williams	8	86	29	42	68.8	3.71
Staunton	Augusta	J. C. Covell	22	82	28	44	64.1	3.84
Lexington	Rockbridge	W. H. Ruffner	22	90	29	41	67.4	4.73
Lynchburg	Bedford	Chas. I. Meriwether	21, 22	82	29	45	66.5	.....
Snowville	Pulaski	J. W. Stalmaker	22, 23	86	29	30	60.6	3.70
Near Wytheville	Wythe	Rev. Jas. A. Brown	22	82	29	36	61.5	4.20
Averages							67.3	3.36
WEST VIRGINIA.								
Romney	Hampshire	W. H. McDowell	20	94	29	40	68.3	.....
Cabell C. H	Cabell	C. L. Roffe	23	84	8	45	63.8	1.80
NORTH CAROLINA.								
Kenansville	Duplin	Rev. Jas. M. Sprunt	18, 22	89	3, 28	50	71.4	.....
Goldsboro'	Wayne	E. W. Adams, A. M.	22, 24	93	28	50	73.5	1.35
Mt. Olive	Wayne	E. D. Pearsall	23	88	28	53	69.5	5.10
Oxford	Granville	W. R. Hicks, M. D	21	86	28	.....	.....	.....
Albemarle	Stanley	F. J. Kron	22	92	29	36	66.5	2.50
Statesville	Iredell	Thos. A. Alison	22	86	28, 29	38	65.6	6.75
Asheville	Buncombe	E. J. Aston	2, 19, 21, 22, 23	76	23, 29	36	62.5	1.50
Asheville	Buncombe	J. T. E. Hardy, M. D	21, 22	76	28, 29	34	61.7	.....
Chapel Hill	Orange	David S. Patrick	19	89	27	55	74.7	.....
Averages							68.2	3.44
SOUTH CAROLINA.								
Aiken	Barnwell	Jno. H. Cornish	20, 22	88	28	54	71.0	3.00
Gowdeysville	Union	Charles Petty	22	90	29	51	73.3	1.77
Fort Hill	York	R. A. Springs, jr.	22	90	30	50	71.2	.....
Averages							71.8	2.39
GEORGIA.								
Atlanta	Fulton	F. Duckner & Son	17, 20, 22	86	28	44	66.8	2.31
Berne	Camden	H. L. Millyer	7, 8	84	28	58	72.1	4.50
Penfield	Greene	S. P. Sanford	17, 22	88	28	49	71.5	1.60
Averages							70.1	2.80
ALABAMA.								
Opelika	Lee	Miss Ella B. Shields	17	94	27, 28	57	76.1	0.44
Carlowville	Dallas	H. L. Alison	13, 23	88	28	52	73.2	1.95
Moulton	Lawrence	Thos. M. Peters, A.M.	1, 5, 19, 23,	80	28	45	66.8	6.60
Havana	Hale	S. K. Jennings, M. D.	22	86	28	50	71.9	4.20
Fish River	Baldwin	W. J. Van Kirk	1, 4, 18	86	28	60	.....	.....
Mobile	Mobile	Lewes B. Taylor	18, 21, 22, 23	88	28	55	76.8	.....
Averages							73.0	3.30

Table showing the range of the thermometer, &c., for September—Continued.

States and stations.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
FLORIDA.				°		°	°	*In.*
Port Orange	Volusia	Mrs. J. M. Hawks	7, 8	90	29, 30	72	79.0	.....
Jacksonville	Duval	A. S. Baldwin	26	91	27	68	78.5	7.00
Pilatka	Putnam	Gen. G. D. Robinson	14, 15, 16	92	27, 28, 29, 30	64	75.7	6.13
Ocala	Marion	Edward Barker	8, 9, 14	96	2, 4, 23, 30	70	80.3	.....
Manatie	Manatie	B. A. Conchman	8, 10, 11, 14, 15, 20, 25, 27	90	30	74	81.2	2.40
Chattahoochee	Gadsden	M. Martin	16, 20, 23	91	9	58	.....	4.50
Averages							78.9	5.01
TEXAS.								
Gilmer	Upshur	J. M. Glasco	2, 4	90	29	47	73.1	5.70
Blue Branch	Burleson	F. S. Wade	6	91	13	48	71.8	0.70
Lavacca	Calhoun	L. D. Heaton	1, 2, 3, 5	90	27	58	77.3	8.80
Austin	Travis	J. Van Nostrand	2	95	29	54	74.9	4.16
Averages							74.3	4.84
MISSISSIPPI.								
Brookhaven	Lawrence	T. B. Moore	27	90	29, 30	50	72.7	4.76
Near Brookhaven	Lawrence	T. J. R. Keenan	18, 22, 23, 25	86	29	50	73.3	5.00
Natchez	Adams	Wm. McCary	21	84	29	50	71.2	2.48
Marion C. H.	Lauderdale	Thomas W. Florer	6, 11, 18, 19	92	10	56	75.4	6.00
Averages							73.2	4.56
TENNESSEE.								
Elizabethton	Carter	Charles H. Lewis	22	88	28	34	66.5	2.25
Tusculum College	Greene	S. S. & Rv. W. S. Doak	18, 21	86	28	43	67.3	0.70
Lookout Mountain	Hamilton	Rv. C. F. P. Bancroft	19	87	27, 28	49	71.2	.....
Austin	Wilson	P. B. Calhoun	23	88	28	42	68.9	4.75
Clarksville	Montgomery	Prof. Wm. M. Stewart	18	86	28	42	66.1	2.55
Trenton	Gibson	W. T. Grigsby	21	90	28	41	69.2	1.30
Memphis	Shelby	Ed. Goldsmith	18	89	28	44	68.6	1.30
Averages							68.3	2.14
KENTUCKY.								
Pine Grove	Clarke	Sam'l D. Martin, M. D	22, 23	88	28	40	66.0	3.62
Danville	Boyle	O. Beatty	22	93	28	42	70.1	3.82
Louisville	Jefferson	Samuel Mauly, M. D.	19, 20, 21	95	27	49	69.9	2.40
Near Louisville	Jefferson	Mrs. L. Young	23	91	27, 28	38	68.9	3.29
Averages							68.7	3.28
OHIO.								
Steubenville	Jefferson	Jos. B. Doyle	21	86	28	43	68.1	7.49
Painesville	Lake	E. J. Ferris	19	81	28	44	59.4	8.00
Gilmore	Tuscarawas	Samuel M. Moore	5	90	2	47	65.8	.....
Milnersville	Guernsey	Rev. D. Thompson	18	85	28	32	.....	8.10
Cleveland	Cayuhoga	Mr. & Mrs. G. A. Hyde	6	87	28	43	63.9	6.27
Wooster	Wayne	Martin Winger	19	82	28	36	56.1	5.40
Smithville	Wayne	Wm. Hoover	24	89	28	37	64.8	.....
Gallipolis	Gallia	A. P. Rodgers	5	88	28	38	66.0	4.45
Kelley's Island	Erie	Geo. G. Huntington	24	85	27	48	67.5	1.99
Sandusky	Erie	Thomas Neill	24	86	28	41	64.2	3.46

Table showing the range of the thermometer, &c., for September—Continued.

States and stations.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
OHIO—Con'd.				°		°	°	In.
North Fairfield	Huron	O. Burras	19, 20	86	28	38	64.5	3.82
Westerville	Franklin	Prof. John Haywood	21	86	28	39	62.6	3.57
North Bass Island	Ottawa	Geo. R. Morton, M. D.	4, 19	86	27	46	67.2	1.75
Marion	Marion	H. A. True, M. D.	19, 24	84	28	36	62.5	3.93
Hillsboro'	Highland	J. McD. Mathews	19, 20, 21, 24	81	28	41	64.1	3.63
Bowling Green	Wood	John Clarke	19, 20, 24	90	28	32	65.2	3.68
Kenton	Hardin	C. H. Smith, M. D.	19	94	28	45	67.9	3.10
Urbana University	Champaign	M. G. Williams	19	88	28	38	65.2	3.32
Bethel	Clermont	George W. Crane	19	91	27	44	65.5	3.75
Edgerton	Williams	A. B. Knight	18	87	28	31	62.9	2.02
Jacksonborough	Butler	I. B. Owsley, M. D.	24	88	27	42	67.2	3.27
Mt. Auburn Inst.	Hamilton	Miss Anna Y. White	5, 19	89	30	48	76.6	2.59
Cincinnati	do	R. C. Phillips	25	88	28	46	69.3	3.20
College Hill	do	John W. Hammitt	19	89	29	45	68.0	2.50
Averages							65.9	4.06
MICHIGAN.								
Monroe City	Monroe	Miss H. I. Whelpley	20	86	27	32	58.6	2.67
Alpena	Alpena	J. W. Paxton	19	70	27	42	60.1	1.54
State Agr. College	Ingham	Prof. R. C. Kedzie	19	89	27	38	62.5	1.43
Litchfield	Hillsdale	R. Bullard	19	86	28	39	62.2	2.03
Cold Water	Branch	N. L. Southworth	18, 20	85	27, 28	36	61.6	2.19
Grand Rapids	Kent	E. S. Holmes, D. D. S	19	90	27	37	64.6	.....
Northport	Leelenaw	Rev. Geo. N. Smith	19	82	27	37	61.2	7.00
Pleasanton	Manistee	J. D. Millard	19	84	27	34	59.4	4.15
Otsego	Allegan	Milton Chase, M. D.	18	98	26, 27	37	64.4	.....
Copper Falls	Keweenaw	S. H. Whittlesey, M. D	19	78	27	33	56.3	1.42
Ontonagon	Ontonagon	Edwin Ellis, M. D.	19	84	27	42	60.3	.....
Averages							61.1	2.80
INDIANA.								
Vevay	Switzerland	Charles G. Boerner	18, 23, 24	88	28	42	66.0	3.05
Mount Carmel	Franklin	J. A. Applegate & d'r.	19, 24	88	27	45	67.2	4.15
Muncie	Delaware	G. W. H. Kemper, M. D	24	88	28	37	64.8	1.95
Spiceland	Henry	Wm. Dawson	19	90	27	39	64.4	1.87
Laconia	Harrison	Adam Crozier	18, 20, 23	88	28	42	67.0	2.54
Columbia City	Whitley	Dr. F. & Miss L. McCoy	19	87	28	35	64.4	1.81
Knightstown	Rush	D. Deem	19	86	28	37	65.2	1.75
Indianapolis	Marion	J. V. Woolon, M. D.	4	89	28	36	60.6	2.17
Near La Porte	La Porte	Fred. J. G. Andrew	19, 24	86	28	40	65.0	1.95
Rensselaer	Jasper	J. H. Loughridge	19	90	28	37	63.9	2.05
Merom	Sullivan	Thomas Holmes	20	86	27, 28	42	63.4	2.35
Kentland	Newton	Daniel Spitler	19	86	27	42	62.7	4.00
New Harmony	Posey	John Chappellsmith	18, 19, 20, 23	86	27, 28	45	67.5	2.43
Harveysburg	Fountain	B. C. Williams, M. D.	24	91	28	32	66.2	0.50
Averages							64.9	2.33
ILLINOIS.								
Chicago	Cook	J. G. Langguth, jr.	19	90	28	42	67.3	0.89
Near Chicago	do	Samuel Brookes	19	88	28	40	63.7	.....
Evanston	do	Prof. Oliver Marcy	24	83	28	43	64.1	0.64
Marengo	McHenry	O. P. Rogers	19	86	26	34	60.3	0.98

Table showing the range of the thermometer, &c., for September—Continued.

States and stations.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
ILLINOIS—Con'd.				°		°	°	*In.*
Mattoon	Coles	W. E. Henry	18, 19	86	26, 27	42	66. 8	.....
Louisville	Clay	D. H. Chase, M. D.	20, 24	89	28	34	65, 5	4. 30
Belvidere	Boone	G. B. Moss	19	86	28	34	61. 4	2. 59
Sandwich	De Kalb	N. E. Ballou, M. D.	18	88	28	34	61. 2	1. 33
Pana	Christian	Thomas Finley, M. D.	19, 23	86	28	42	65. 6	2. 15
Winnebago	Winnebago	J. W. & Miss Tolman	19	84	26	37	61. 2	3. 85
Rochelle	Ogle	Daniel Carey	19, 24	85	26	36	61. 3	.....
Wyanet	Bureau	E. S. & Miss Phelps	19	86	26	36	63. 7	0. 67
Tiskilwa	Bureau	Verry Aldrich	19, 24	82	26, 28	34	62. 0	.....
Peoria	Peoria	Fredk. Brendel	19	88	26	41	66. 7	0. 74
Springfield	Sangamon	G. M. Brinkerhoff	19	90	28	42	66. 4	.....
Loami	Sangamon	Timothy Dudley	18, 24	88	28	40	66. 8	1. 90
Dubois	Washington	Wm. C. Spencer	24	91	28, 29	42	65. 8	2. 75
South Pass	Union	H. C. Freeman	18, 20, 23	88	27	43	68. 5	.....
Galesburg	Knox	Prof. W. Livingston	19	86	26	39	61. 5	1. 06
Manchester	Scott	Dr. J. & C. W. Grant	23	90	26, 27	36	66. 2	1. 94
Mount Sterling	Brown	Rev. A. Duncan	19	86	26	40	64. 4	1. 30
Andalusia	Rock Island	E. H. Bowman, M. D.	19	82	26, 27	40	64. 0	.....
Augusta	Hancock	S. B. Mead, M. D.	18, 19	83	26	40	64. 6	1. 82
Warsaw	Hancock	B. Whittaker	19	88	27	40	65. 1	5. 90
Averages							64. 3	2. 05
WISCONSIN.								
Manitowoc	Manitowoc	Jacob Lüps	5	78	27	37	59. 0	1. 84
Plymouth	Sheboygan	G. Moeller	19	85	26	32	60. 0	3. 60
Hingham	Sheboygan	John De Lyser	18	84	27, 28	33	61. 1	.....
Milwaukee	Milwaukee	L. A. Lapham, LL. D.	18	83	27	38	60. 3	1. 97
Appleton	Outagamie	J. C. Foyé	19	78	27	37	60. 8	.....
Geneva	Walworth	W. H. Whiting	18, 24	85	27, 28	36	61. 5	0. 93
Waupacca	Waupacca	H. C. Mead	19	84	26	36	61. 6	.....
Embarrass	Waupacca	E. Everett Breed	19	84	26, 27	33	59. 7	3. 88
Madison	Dane	W. W. Daniels	19	81	26	40	61. 8	2. 68
Edgerton	Rock	H. J. Shintz	19	90	27	34	62. 6	3. 10
Baraboo	Sauk	M. C. Waite	3	82	27	31	61. 6	2. 25
New Lisbon	Juneau	J. L. Dungan	19	86	26	32	61. 5	.....
Averages							61. 0	2. 53
MINNESOTA.								
Beaver Bay	Lake	C. Wieland	9	80	26	33	54. 9	10. 70
Afton	Washington	Dr. B. F. & Mrs. Babcock	18	84	25	32	60. 7	7. 35
St. Paul	Ramsey	Rev. A. B. Paterson	18	87	27	32	61. 3	10. 61
Minneapolis	Hennepin	Wm. Cheney	18	86	27	28	58. 9	11. 45
Sibley	Sibley	C. W. & C. E. Woodbury	18	86	27	29	59. 9	6. 60
Koniska	McLeod	Thomas M. Young	18	84	26	30	55. 4	10. 00
New Ulm	Brown	Charles Roos	18	87	25, 26	40	61. 7	5. 70
Madelia	Watonwan	W. W. Murphy	18	88	25, 26	40	63. 6	6. 60
White Earth	Becker	Dr. D. Pyle	18	78	25	28	55. 1	18. 51
Averages							59. 1	9. 72
IOWA.								
Clinton	Clinton	Dr. J. P. Farnsworth	19	88	26, 27	38	62. 8	4. 00
Waukon	Allamakee	E. M. Hancock	18	84	25, 27	36	60. 1	.....
Dubuque	Dubuque	Asa Horr, M. D.	18	83	26	39	62. 5	3. 47

Table showing the range of the thermometer, &c., for September—Continued.

States and stations.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
IOWA—Con'd.								
				°		°	°	*In.*
Monticello	Jones	M. M. Moulton	18	85	26, 27	40	62. 6	2. 75
Fort Madison	Lee	Daniel McCready	19	85	26	36	63. 8	2. 76
Guttenberg	Clayton	Jas. P. Dickerson	18	87	26	32	59. 2	.....
Mount Vernon	Linn	Prof. A. Collins	18, 19	83	27	33	60. 6	.....
Iowa City	Johnson	Prof. Theo. S. Parvin	10	88	27	33	63. 2	3. 09
Independence	Buchanan	George Warne, M. D.	18	87	27	37	60. 5	.....
Near Independence	Buchanan	Mrs. D. B. Wheaton	18	89	25	39	62. 3	.....
Waterloo	Black Hawk	T. Steed	18	88	27	30	63. 1	4. 95
Vinton	Benton	James Wood	19	84	27	34	62. 0	3. 03
Rockford	Floyd	H. Wadey	18	81	27	34	60. 9	.....
Newton	Jasper	A. Failor	18	86	27	32	61. 0	6. 10
Ames	Story	John M. Cotton	23	82	27	36	62. 9	5. 60
Algona	Kossuth	I. H. Warren	18	86	27	33	60. 5	.....
Near Algona	Kossuth	Ph. Dorweiler	18	84	27	31	59. 3	.....
Mineral Ridge	Boone	Z. S. Sullivan	19	89	27	32	67. 3	14. 40
Boonesboro'	Boone	E. Babcock	18, 23	85	27	28	65. 8	5. 36
Fontanelle	Adair	A. F. Bryant	18	85	27	33	61. 2	6. 00
Grant City	Sac	Mr. & Mrs. Miller	18	89	27	31	62. 4	6. 80
Averages							61. 6	5. 26
MISSOURI.								
St. Louis	St. Louis	Rev. F. H. Stuntebeck	19	86	26	45	67. 3	1. 74
Allenton	St. Louis	A. Fendler, M. D.	18, 24	91	28	36	65. 7	1. 60
Hematite	Jefferson	John M. Smith	18, 24	88	28	33	66. 2	2. 40
Rolla	Phelps	Homer Ruggles	19	86	27, 28	39	64. 9	2. 31
Hermitage	Hickory	W. Moore, M. D.	12, 24	88	27	36	64. 3	1. 72
Bolivar	Polk	Jas. A. Race	5, 11, 17	84	27	44	68. 8	1. 20
Harrisonville	Cass	John Christian	18	84	27	42	65. 3	3. 55
Oregon	Holt	Wm. Kaucher	10, 11	89	27	37	65. 0	3. 28
Averages							65. 9	2. 23
KANSAS.								
Atchison	Atchison	Dr. H. B. & Miss Horn	4, 18	86	27	39	64. 7	3. 40
Leavenworth	Leavenworth	Dr. J. Stayman	3, 17, 18, 23	86	27	40	64. 1	4. 50
Olathe	Johnson	W. Beckwith	1	88	27	32	65. 0	5. 30
Paola	Miami	L. D. Walrad	17	88	27	34	66. 0	4. 00
Baxter Spring	Cherokee	Ingraham & Hyland.	1	88	25, 27	52	72. 2	3. 70
Lawrence	Douglas	Prof. F. H. Snow	17	83	27	35	59. 9	4. 45
Holton	Jackson	James Watters, M. D.	3	89	25	44	65. 5	.....
Le Roy	Coffey	J. G. Shoemaker	1	99	26	38	68. 0	5. 29
St. Agr. College	Riley	Prof. B. F. Mudge	2, 3, 17	83	27	41	61. 9	1. 83
Council Grove	Morris	A. Woodworth, M. D.	3, 17, 18	86	8	45	67. 0	5. 60
Averages							65. 4	6. 23
NEBRASKA.								
Omaha Mission	Omaha Reserve	Rev. Wm. Hamilton	17, 18, 23	85	25, 26	40	60. 6	7. 83
Elkhorn	Washington	John S. Bowen	18	84	27	38	61. 5	.....
De Soto	do	Charles Seitz	10, 18	83	27	37	60. 4	9. 74
Fontanelle	do	Henry Gibson	23	85	25, 27	40	63. 1	.....
Bellevue	Sarpy	Mrs. E. E. Caldwell	3, 18	84	27	37	63. 5	4. 60
Glendale	Cass	Dr. A. L. & Miss Child	18, 23	85	26	33	62. 0	5. 20
Averages							61. 9	6. 84

Table showing the range of the thermometer, &c., for September—Continued.

States and stations.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
UTAH TERRITORY.								
Coalville	Summit	Thomas Bullock	1,17	84	30	42	61.5	.....
CALIFORNIA.								
Monterey	Monterey	C. A. Canfield, M. D	27	94	19	44	62.0	0.02
Watsonville	Santa Cruz	A. J. Compton	26	99	20	43	65.4	0.20
Vacaville	Solano	Prof. J. C. Simmons	26	96	22	58	72.0	.....
Stony Point	Sonoma	A. W. Thornton, M. D	25	101	23	44	72.1	0.40
Averages							67.9	0.21
MONTANA TERR'Y.								
Deer Lodge City	Deer Lodge	Granville Stuart	8	85	25,26	26	51.4	0.10

NOTES ON THE WEATHER– SEPTEMBER, 1869.

Lisbon, Me.—Severe gale 8th; auroras 11th, 27th.

Houlton, Me.—Tree foliage changing color 1st; gale 8th; auroras 11th, 13th; many wells dry 24th; frosts, light 28th, severe 29th.

Steuben, Me.—Many wells dry 7th; gale 8th; auroras 11th all night, 24th, 28th; frosts 28th, killing black 29th.

W. Waterville, Me.—Auroras 3d, 5th, 10th, 26th, 28th; gale 8th; first frost, slight, 29th. Month 3.5° warmer than its average for five years; rain-fall 2.92 inches greater than average.

Gardiner, Me.—Auroras 5th, 11th, 27th, very bright 29th, 30th; almost a hurricane 8th. A warm and, until the 26th, a very dry September. Average mean temperature of September for thirty-three years 58.51°.

Norway, Me.—Frost on low lands 1st; severe storm 8th; auroras 5th 27th, 28th, 29th; frost and ice 28th.

Cornish, Me.—Auroras 1st, 2d, 5th, 11th, 28th; frosts 1st, with ice 28th.

Cornishville, Me.—Average September temperature for forty years 56.167°; this year 62.98°.

Whitefield, N. H.—Auroras 5th, 11th; snow squall and freeze 28th.

Goffstown Center, N. H.—Auroras 27th, 28th; sharp frost 29th. Month calm and pleasant; springs, &c., low.

Lunenburg, Vt.—Pleasantest month this season; rather dry for streams; no frost, but a little snow on the mountains.

Randolph, Vt.—Storm 26th; aurora 27th; frost.

Woodstock, Vt.—Beautiful aurora 5th; frost 28th, 29th.

West Charlotte, Vt.—Auroras 1st, 2d, 4th, 10th, 14th, very brilliant 19th, 27th, 28th, 29th.

Panton, Vt.—Auroras 2d, 5th, 11th, 13th, 27th, brilliant 28th, 29th.

Castleton, Vt.—Aurora 6th; first frost 28th.

Hartford, Vt.—Weather warm and pleasant till first frost and ice, on 26th.

Kingston, Mass.—Slight frost 1st, 28th, 29th; great gale 8th; auroras 5th, 11th, 14th.

Milton, Mass.—Destructive gale 8th; auroras 5th, 27th, 28th; first frost 28th.

North Billerica, Mass.—Wild geese 25th; first hard frost 28th.

Mendon, Mass.—Auroras 5th, 11th; gale 8th; hail-storm 20th, stones twenty-eight to the pound; laid two inches deep.

Lunenburg, Mass.—Gale, rain, lightning, and thunder 8th; killing frost 28th. Average mean temperature of September for thirty years 61.6°; September, 1868, 58.96°; this September, 62.6°.

Amherst, Mass.—Auroras 27th, 28th, 29th; frosts 1st, 28th.

Newport, R. I.—Storm and gale 8th; forty-eight vessels ashore in bay and branches.

Brookfield, Ct.—Heavy rain 26th, ended the drought; sharp frosts 28th, 29th, killed vines, &c.

Moriches, N. Y.—Severe gale 8th; auroras 9th, 11th, 27th; heavy rain 26th, 27th; first frosts 28th, 29th.

Hudson, N. Y.—Auroral belts 3d, 27th.

Garrison's, N. Y.—Very dry till 25th; first frost 28th.

New York City.—Auroras 2d, 9th, 11th, 13th, 14th, 15th, 27th, 28th; magnetic clouds 3d, 10th.

North Hammond, N. Y.—Frost 1st; aurora 16th. September more like summer than any month this year.

Houseville, N. Y.—Auroras 1st, 2d, 5th, 13th, 27th, 28th, 29th, 30th; first white frost 28th.

Leyden, N. Y.—Electric light, flowing eastward in sun's path for thirty minutes, 7th; all kinds of vivid lightning, with thunder and rain, 20th; heaviest rain-storm known here 26th; first frost, ice, and snow-flakes 28th; till then month unusually warm and pleasant.

Cazenovia, N. Y.—Frosts 2d, 3d; aurora 27th.

Depauville, N. Y.—Auroras 1st, 2d, 3d, 4th, 5th, 9th, 10th, 13th; hot puffs of air from south 7th, followed by change to cool 8th, and rain 8th, 9th.

Palermo, N. Y.—Very light frost 1st. Warmest September for sixteen years, except 1855 and 1865; favorable for corn.

North Volney, N. Y.—Auroras 2d, 3d, 11th, 29th; wild geese 28th; no frost this month.

Waterbury, N. Y.—Light frost 2d; auroras 2d, 5th, 11th, 14th, 27th, 29th, 30th. Month warm and pleasant.

Himrods, N. Y.—Auroras 2d, 5th; the last, one column of light in east to meridian like train of a comet, emitted flashes for forty-five minutes, then broke into four pieces, floated north, and faded away.

Buffalo, N. Y.—Mean temperature 4.4° above September average of twelve years; only 3° below August.

Newark, N. J.—August drought continued into September; gale 8th; bright aurora 9th. The mean temperature exceeds twelve of twenty-six Septembers, whose average is 63.93°; warmest in 1846, 68.64°; coldest in 1859, 61.05°.

Moorestown, N. J.—The most severe drought in twelve years ended 27th; no soaking rain since June; no frost this month.

New Germantown, N. J.—Auroras 4th, 5th, 9th, 11th a segment, 13th and 27th beautiful; frost 29th.

Newfield, N. J.—Slight frosts 3d, 28th, 29th; very dry 5th; month favorable for gathering crops.

Greenwich, N. J.—Auroras 5th, 9th, 27th; light frost 29th; one hundred and forty-seven days since last frost.

Vineland, N. J.—Auroras 14th, brilliant 27th; light frost 28th.

Fallsington, Pa.—Aurora 27th; frosts 27th, 28th. A pleasant month.

Philadelphia, Pa.—Very high wind 6th; auroral light 27th; first frost 28th, light.

Horsham, Pa.—Auroras 11th, 12th; light frost in low grounds 29th.

Plymouth Meeting, Pa.—First frost 3d, light; one hundred and nineteen days between frosts; auroras 27th, 29th.

Dyberry, Pa.—Slight frosts 1st, 2d, 11th, 12th, 28th, 29th, 30th. Before the 26th water failed where it never did before.

Factoryville, Pa.—Light frost 1st, 2d, severe 28th; auroras 4th, brilliant 9th, 27th; ground dry and springs low.

Carlisle, Pa.—First frosts, very slight, 28th, 29th.

Fountain Dale, Pa.—Aurora 27th; harmless frost 29th. Dry weather injured corn, benefited grapes; pastures remained green.

Grampian Hills, Pa.—Month dry, sometimes warm; frosts harmless till 29th.

Johnstown, Pa.—Only one rain to wet the earth, but fog nearly every morning, and no frost.

Connellsville, Pa.—Frosts 1st, 28th, heavy 29th, with ice 30th.

New Castle, Pa.—Light frosts 1st, 2d, 26th, 28th.

Beaver, Pa.—Heaviest rain in two years 7th and 8th; fine aurora 27th; frost on hills 28th. A pleasant month, with much rain.

Milford, Del.—The drought ended 26th; aurora 27th.

Woodlawn, Md.—Severe drought till 26th; corn, potatoes, and pastures suffered.

Emmittsburg, Md.—Aurora 26th; severe frost 29th.

Johnsontown, Va.—Brilliant aurora 10th; very slight frosts 28th, 29th, 30th.

Zuni Station, Va.—Blackwater river dry 1st; tradition that it dried up one hundred years ago; aurora 27th; first frosts 28th, 29th.

Bacon's Castle, Va.—Wild, stormy day, little rain, 8th; bright aurora 14th; spots of frost 28th. Very warm, dry, and smoky till 26th; many fires, burning timber and fences.

Comorn, Va.—Heaviest rain this year 26th; frosts 28th, 29th; wild geese flying south 30th.

Lexington, Va.—Frosts 3d, 28th, 29th; wheat sowing 10th to 25th; aurora 27th. Grasshoppers riddled the cornfields like a hail-storm.

Snowville, Va.—Light frosts, 2d, 3d, 4th, heavy 28th, 29th, 30th; first ice 28th.

Wytheville, Va.—Frosts 2d, 3d, 10th, 28th, 29th, 30th; greatest rain in several years 25th and 26th.

Romney, W. Va.—First frost 2d; heavy rains 6th, 26th; frosts and fogs 29th, 30th.

Mt. Olive, N. C.—Drought—mills stopped, people without meal.

Albemarle, N. C.—Light frosts 28th, 28th. Another dry month, rain of 26th not sufficient.

Statesville, N. C.—Aurora 24th; first frosts 28th, 29th.

Fort Mill, S. C.—Frosts 28th, 29th.

Gowdysville, S. C.—Cotton opening 1st; harmless frosts 28th, 29th.

Atlanta, Ga.—No rain from August 27th to 20th instant. Ground in good condition for fall sowing.

Moulton, Ala.—Light frosts 27th, 28th; corn fit for grinding by 16th; weather damp and cool; no storms.

Jacksonville, Fla.—Month of storms and high winds; mean temperature about average; rain-fall half an inch above average.

Pilatka, Fla.—Except first three days wind steadily from northeast; equinoctial without high wind, or lightning and thunder.

Blue Branch, Texas.—Swans going south 10th, and brant 25th; month dry, favorable for harvesting corn.

Grenada, Miss.—Slight frosts 27th, 28th; only four frosts in September in fourteen years. Except a few days, month unusually warm.

Brookhaven, Miss.—Very cool 2d, 8th, 9th; rest of month dry and pleasant.

Elizabethton, Tenn.—Harmless frost 28th; month unusually dry.

Tusculum College, Tenn.—First frosts 28th considerable, 29th light.

Trenton, Tenn.—Very light frosts 27th, 28th; month very dry; but one rain, or appearance of rain.

Pine Grove, Ky.—Frost reported 9th; grasshoppers damaging rye and turnips, and delaying wheat-sowing 16th to 27th; light frosts 27th, 28th, 29th.

Cleveland, Ohio.—Auroras 3d, 27th; thunder and hail 17th; no frosts; not many, but heavy rains; more rain than in any one of fifteen Septembers, except in 1866.

North Fairfield, Ohio.—Frosts 1st, (light,) 28th, (heavy;) brilliant aurora 27th.

Bowling Green, Ohio.—Aurora 27th; frost and ice 28th; the month warm.

Kelley's Island, Ohio.—Auroras 4th, 5th, 9th, brilliant 13th; temperature of lake water 65° on 30th.

Sandusky, Ohio.—Swallows leave 5th; aurora 9th; first white frost 28th.

Westerville, Ohio.—Slight frosts 1st, 29th, heavy 2d and 28th; bright aurora 27th.

Hillsboro', Ohio.—First frosts 27th, 28th, 29th, 30th; aurora 28th.

Kenton, Ohio.—First frosts 2d, killing 28th; auroras 2d, 27th.

Urbana, Ohio.—Frosts—light 1st, heavy 28th, 29th; auroras 13th, 27th; mean temperature of month 5° above August, and 1.67° above September average for seventeen years.

Jacksonburg, Ohio.—Not a cloud 1st to 6th; auroras 4th, 27th; first frost since April, 15th, 27th.

Alpena, Mich.—Bright aurora 27th; first frost 29th. Much clear sunny weather in September.

Litchfield, Mich.—Light frosts 1st, 17th—heavy, ice, frozen ground, 28th, yet corn not much injured.

Coldwater, Mich.—Frost on low grounds 1st, 28th; aurora 27th.

Northport, Mich.—Auroras 13th, 30th. No frost yet.

Copper Falls, Mich.—Auroras 9th, 27th; frosts 28th, 29th.

Vevay, Ind.—First frosts 27th, 28th; river fogs prevented damage from frosts.

Mount Carmel, Ind.—First frosts 27th, 28th—little damage; aurora 27th.

Spiceland, Ind.—First frosts 27th, 28th, 29th. Fine weather.

Knightstown, Ind.—Hard frost 27th, harder 28th. More dark sky in September than in the whole season.

La Porte, Ind.—Auroras 9th, very bright 27th; frost 28th.

Rensselaer, Ind.—Auroras 2d, 3d, 9th, 27th; first frost, very heavy, 28th.

Chicago, Ill.—Very bright aurora; tinged streamers changed form rapidly.

Near Chicago, Ill.—First frost 28th; rime only on east sides of shrubbery, &c.

Marengo, Ill.—Two-arched aurora with streamers 9th; first frost since 5th of June, 26th, light; but another, on the 28th, killed tomato vines, &c.

Louisville, Ill.—Frosts—light 27th, hard 28th; aurora 27th; grasshoppers very numerous 30th.

Belvidere, Ill.—Auroras 8th, 10th, 27th; first frosts 26th, with ice 28th; one hundred and forty-three days between frosts.

Winnebago, Ill.—Frosts—light 8th, severe 26th; auroras—brilliant 9th, faint 27th.

Springfield, Ill.—Little, if any, frost; some cool days, but a very pleasant month.

Manchester, Ill.—Aurora all night 9th, very bright.

Mount Sterling, Ill.—First frost 25th; ice in some places.

Plymouth, Wis.—Auroras 9th, 27th, 29th; first frosts 26th, 28th, doing little damage.

Milwaukee, Wis.—Auroras—9th brilliant, 27th all evening; frost 27th.

Geneva, Wis.—First frosts 27th, 28th; injured corn.

Embarrass, Wis.—Frosts—1st light, severe 26th, 27th, 28th; auroras 2d, 5th, 9th, 10th, 12th, 26th, all night 28th, 29th.

Baraboo, Wis.—Frost 26th, with ice 27th; fog saved some low-land corn; upland corn not damaged.

Beaver Bay, Minn.—First frosts, near the lake, 25th, 27th; aurora 27th.

Afton, Minn.—Auroras 9th, 28th, 29th; frosts—light 26th, heavy 27th. The unusual rainfall injured wheat, and raised Lake St. Croix beyond all precedent.

St. Paul, Minn.—First frost 27th, hard. The wettest September known here; sixteen rainy days—double the amount of any September in ten years—causing loss of immense amounts of produce, lumber, &c., and raising the Mississippi higher than ever known at this season.

Minneapolis, Minn.—Frost and ice 27th. Swamps flooded, and much hay lost.

Koniska, Minn.—Brilliant aurora 10th; frosts—slight 11th, severe 26th; heavie[illegible] September rain known here 11th and 12th.

New Ulm, Minn.—Ice 27th; auroras 28th, 29th.

Madelia, Minn.—Damaging hail-storm 12th; frosts—light 25th, killing 27th.

White Earth, Minn.—Thunder and hail-storm, with great darkness, 23d; rain continued 24th—fall over ten inches; first frost 25th; snow reported 24th; bright white aurora 29th, with severe gale all night.

Clinton, Iowa.—Slight frosts 7th, 8th, 26th, 28th; auroras 9th, 29th. River higher than in ten years in September.

Waukon, Iowa.—Auroras 5th, 9th, 27th, brilliant 28th, 29th; frosts—slight 21st, injured backward corn 26th.

Dubuque, Iowa.—Auroras 9th, 27th; frost 25th.

Monticello, Iowa.—First frost 27th. Between frosts, in 1865, one hundred and thirty-nine days; 1866, ninety-four days; 1867, one hundred and ten days; 1868, one hundred and eighteen days; 1869, one hundred and eleven days.

Guttenburg, Iowa.—Frosts 8th, 26th, 27th; aurora 9th. No ice yet.

Iowa City, Iowa.—First frost 26th. Mean frost date for thirty-one years, September 24th; September average mean temperature for thirty-one years, 63.37°; average rain for twenty-two years, 4.24 inches.

Independence, Iowa.—Auroras 2d, 9th, 27th; frosts 26th, 27th. Month ends muddy.

Near Independence, Iowa.—First frosts 7th, 8th, 25th, with ice 27th.

Newton, Iowa.—Hail-storm 26th; killing frost 27th; aurora 27th.

Algona, Iowa.—First frost 27th. Wettest and windiest September ever known here.

Fontanelle, Iowa.—Wild geese going south 24th, cranes 25th.

Boonesboro', Iowa.—Month 4° above September average of fourteen years.

Allenton, Mo.—First frosts 26th, 27th, 29th.

Harrisonville, Mo.—Light frost on low lands 8th, 9th, white 26th.

Oregon, Mo.—Auroras 4th, 9th, 27th; ducks from north 15th, geese 22d; first frosts 26th, 27th.

Atchison, Kan.—First frosts, light, 8th, 27th; bright aurora 28th.

Paola, Kan.—Ducks, geese, and cranes moving south 30th.

Holton, Kan.—Remarkably cool and wet summer, and yet crops of all kinds good and abundant.

Manhattan, Kan.—First frost, light, 26th; very bright aurora 27th.

Elkhorn, Neb.—Slight frost 16th, heavy 27th. Coldest September but two in twelve years.

Glendale, Neb.—Aurora 9th; first frosts 16th, 21st, 25th, 27th severe.

Coalville, Utah.—Hail covering ground 3d; killing frost 13th; mountains white with snow 18th; melting snow three inches 30th.

Harrisburg, Utah.—A very dry month—no rain; no frost here, but higher settlements have suffered by some lately. This has been the driest and hottest season ever known here.

Watsonville, Cal.—Earthquake 5th, at 7.30 a. m., for two or three seconds. Month unusually warm.

Stony Point, Cal.—Buckwheat harvested 1st; very warm from 22d to 28th.

Deer Lodge City, Mon. Ter.—Auroras 3d, 29th; snows on mountains 5th, 9th, 24th. Driest September ever known in mountains; small swamps, never before burned, burnt out.

MONTHLY REPORT

OF

THE DEPARTMENT OF AGRICULTURE,

FOR

NOVEMBER AND DECEMBER,

1869.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1869.

MONTHLY REPORT.

DEPARTMENT OF AGRICULTURE, STATISTICAL DIVISION,
Washington, D. C., December 10, 1869.

SIR: I herewith report for publication a statement of the condition of crops November 1, with data bearing upon agricultural productions received during November and December, including estimates in detail of the corn and cotton crops, and brief notes from correspondence bearing upon the several fall crops; together with various extracts from the general correspondence of the department, including reports on experiments with seeds sent out; also, articles upon the following subjects, viz: the southern fairs, the ramie, statistics of cotton manufacture, beet-sugar manufacture, fish culture, American sumac, the great rain storms, Michigan statistics, notes on the agriculture of Colorado and New Mexico, agricultural resources of Jefferson County, Colorado, and of Eastern Oregon and Washington Territory, the "foot and mouth disease," agriculture in the Netherlands, &c.; with meteorological tables and notes on the weather for the month of October.

J. R. DODGE,
Statistician.

Hon. HORACE CAPRON,
Commissioner.

CONDITION OF THE CROPS.

CORN.

On the first of September a failure of the corn crop of northern New England appeared to be imminent. Two weeks earlier indications of frost were seen in parts of New Hampshire, and on the first week of September blackened leaves of maize were observed in deep valleys, while the ears were scarcely fit for roasting. The apprehension was general that no corn would ripen. Fine sunny weather followed, continuing through September and part of October, with occasional rains, ripening the crop very fully in some places, in others leaving it in partial immaturity. On the warm slopes and good soils of Addison County, Vermont, and similar lands, the quality was equal to that of the best crops of former years, while in Orleans County the quality was inferior, though the quantity was an average. On the margins of streams much damage was done by the heavy rains of October 4 and 5. The crop of New England will be less than that of last year by about eighteen per cent.

The severe drought of July and August, prevalent along the Atlantic coast, affected corn injuriously, but the favorable weather of the later months greatly relieved the severity of the injury. The October rains

swept away shocks of corn in the valleys, to some extent, in New Jersey and Maryland. From some portions of Pennsylvania come reports of immaturity, while a general assurance is given of a larger quantity and better quality than was expected in the summer. Virginia suffered severely by the drought, which dwarfed the stalk and blade, and interfered with its perfect earing, yet the ears were generally well filled in proportion to the growth of the stalk, except in worn-out lands. Drought was severe in North Carolina, reducing the crop materially as a whole. In Beaufort County, and in Hyde, adjoining, counties with deep, moist soil, rich as the prairies with organic matter, a good crop was gathered, while in Gaston, and upon the central ridge, thence to Wake County, a region of moderately productive, easily improved, and serviceable soil for various purposes, the yield was much reduced. The corn region in this State is the coast section, parts of which not even Illinois can excel in depth of organic matter or abundance of growth, when properly cultivated; the next belt, that of the long-leafed pine, is better for cotton; the next zone is especially suited to wheat, and the mountain section to corn again, grasses and fruits; and the yield of the present season is in accordance with this peculiar adaptation. In South Carolina and Georgia the long season of hot and dry weather reduced materially the yield in the aggregate, with the same variation, in different circumstances of soil and culture, as in States further north.

A fair summary of reports from the entire district affected by drought would be: Fields badly tilled, overrun with weeds, or with a thin sandy soil, or a heavy clay not ameliorated by culture, were scorched and partially, or wholly, laid waste; while deep soils of river bottoms, rich slopes of virgin soil, and fields kept clean of weeds and frequently cultivated, gave satisfactory and even large returns.

The crop of Alabama, and that of Mississippi, suffered still less, yet is not an average one. Texas shows an increase—in some counties the largest crop ever grown is reported—in one (Coryell) the average yield is placed at forty bushels.

The October freeze injured corn in Kentucky, both in shock and in the field, and wet weather was the cause of loss in low lands. In Missouri the crop was generally fine in rolling prairie and in timber lands, but poor in level prairie, from excess of rain.

The aggregate of the crop exceeds that of last year, and the quality is good. A reduction of seventeen per cent. is indicated in Illinois. From several counties come very gloomy reports. La Salle reports a decrease of thirty per cent.; Hancock has thousands of acres nearly worthless, and the average yield is fixed at eighteen bushels; Mercer has "made a fair crop out of a poor material;" "Winnebago has much soft corn, unfit to crib." In the center of corn-growing—Illinois, Indiana, and Ohio—the wet spring and cool summer delayed the ripening, and though there were no severe early frosts, the freezing weather in October found much of the crop imperfectly matured, as in Martin County, Ind., where at that date "it was barely out of roasting ear." In Michigan, Wisconsin, Minnesota, and Iowa, the reduction in quality was still greater, as also the quantity per acre; in the latter two, the increase of acreage, the result of immigration, and the making of new farms, will nearly neutralize the diminution of yield, and make the aggregate production about equal to that of last year, and in the case of Minnesota make a small increase.

The only States reporting an increase of quantity are Minnesota, Missouri, Florida, Nebraska, Kansas, Texas, and California. Louisiana and Iowa give nearly an average. The principal corn-growing section of the West will average a reduction of fully twenty per cent. in yield per acre.

With all the increase of farmers to produce, and population to consume, and with an actual enlargement of area under culture, it is certain that there is actually less corn produced this year than in 1868.

COTTON.

The drought of the Atlantic coast was far less injurious to cotton than to corn. Superior cotton soils, well cultivated, rarely suffer for want of rain; inferior, shallow, and neglected soils, which produce small crops under the most favorable circumstances, are often injured, and in the present season have in many cases yielded meager returns for the little labor expended. Everywhere the acreage planted is greater than last year; the product per acre in the sea-coast States is materially less, with very few exceptions. The relative proportion of lint to seed is from some cause less than usual. The use of fertilizers has largely increased the yield of these States, has given a better stand in fields where the plant had a feeble start, and stimulated to rapid growth and early maturity. In one experiment reported, the first picking of plants fed with guano yielded, September 11, a ten-fold increase over a similar area of undressed soil, and at the end of the season the enriched soil had produced just double the amount of that unenriched. A judicious system of fertilization is practiced by the few, while the many obtain increased crops through a more rapid exhaustion of the soil, by the aid of guano and various compounds rich in ammonia.

The grasshopper, in some parts of Texas, injured cotton that was planted late. Drought affected it unfavorably in the Red River region. Worms, heavy rains, and overflows were locally injurious. But for these drawbacks the yield would have been very large. Still the aggregate is much larger than that of 1868. Reports of five hundred pounds of lint per acre, where good culture followed a careful selection of seed, are not unfrequent. Some counties return an average of three hundred pounds per acre. The culture in Texas is extending far beyond its limits in 1860, one county which made no return at that date returning four thousand three hundred bales, and others, producing it for the first time, average three hundred pounds per acre.

Arkansas has made an average crop, upon a somewhat increased area; but Tennessee, a small portion only of which is ever cultivated in cotton, has a smaller yield than last year.

The picking commenced earlier than usual, and the later bolls ripened more thoroughly; the season for gathering the lint has been quite uniformly favorable, a circumstance always greatly conducive to increase of the crop aggregate, and favoring a freedom from "trash" and dirt.

An examination of the crop tabulations which follow will show the estimated yield per acre in each State, and the comparison with last year, expressed as a percentage of the crop of 1868.

States.	Product compared with that of 1868.	Yield per acre.
	Per cent.	*Pounds.*
North Carolina	95	145
South Carolina	85	123
Georgia	95	150
Florida	107	152
Alabama	108	176
Mississippi	115	201
Louisiana	112	296
Texas	125	275
Arkansas	110	251
Tennessee	85	160

The aggregate product, in accordance with returns received to this date, is little more than ten per cent. above the yield of 1868, or about 2,700,000 commercial bales, or fully three millions of bales of four hundred pounds each.

POTATOES.

The potato crop is very large. The greatest increase is, respectively, in Kansas, Nebraska, Illinois, Iowa, and Missouri; all of the eastern States, New York, New Jersey, and Pennsylvania, and all the western, except Minnesota, have advanced in production; but the southern States, excepting only Florida, Louisiana, and Texas, have reduced their aggregate. The sweet potato crop is somewhat less than an average.

Rot has been more prevalent than for several years, in the eastern and middle States, confined mainly to those harvested late. Rotting from exposure to sun, or when dug in hot weather, has been prevented by sprinkling with air-slacked lime.

In parts of Pennsylvania the Early Rose, Garnet-Chili, and Goodrich, are held in highest esteem this year as early varieties, and the Harrison as a late potato. Some varieties, which were quite poor in quality in 1868, are very good the present year. In Maryland the Early Rose and Orono are noted for prolific yields. Rarely has there been so productive a season for the potato in the West, where the yield has been extraordinary in some localities, reaching 400 bushels per acre in certain instances. A portion of the crop in this section was overtaken by frosts, and severely injured by freezing in the ground. In some counties one-third of the crop was thus destroyed.

TOBACCO.

The latest returns indicate a reduction of one-third in Virginia and Maryland, one-sixth in Kentucky, sixteen per cent. in Michigan, with a slight decrease in Indiana and Illinois. Massachusetts, West Virginia, Michigan, Wisconsin, and the States west of the Mississippi, have somewhat enlarged their production. A fair summary of these returns would seem to indicate an aggregate reduction of about twenty per cent.

The drought in Maryland and Virginia, and October frosts in Kentucky and other western States, are prominent causes of depreciation. The damage in Trimble County, Kentucky, amounts to hundreds of thousands of dollars, and affects tobacco in the houses and on the scaffolds as well as in the fields.

The quality is variable. In some locations, where the quantity has been reduced by drought, the quality is superior. In others, both quantity and quality are greatly reduced.

FRUITS.

The apple crop was a more than average one in the West, with the exception of Ohio, where a reduction of twenty per cent. is indicated. Maine, Massachusetts, and Rhode Island made but half a crop; New Hampshire and Connecticut three-fourths, while Vermont enjoyed nearly an average yield. New York and Pennsylvania suffered fully a tenth reduction; New Jersey, Delaware, Maryland, and Virginia produced crops from full to large; and the more southern States report generally a small yield.

In the latter part of October the orchards of the Ohio Valley, and

those west of the Mississippi, were despoiled, either in part or totally, as to the fruit still remaining ungathered, by heavy frosts. In some instances apples were shaken into the snow to save them, and those slightly frozen were subjected to similar treatment as a curative; a large proportion were sent to the cider-mill. Those placed in heaps on the ground, and covered with snow, were saved. In Calhoun County, Michigan, 100,000 bushels, one-third of the crop, were frozen. In Athens County, Ohio, many thousands of bushels have been frozen on the trees. Similar statements come from all portions of the West. A larger production of cider than ever before made is the result.

Reference is made to the extracts from correspondence, and to the statistical tables, for details of quantity and quality of apples, pears, grapes, and other fruits.

The orange yield has been very large in Florida. Frost injured the fruit-buds of lemons, but not the trees.

MISCELLANEOUS.

The cultivation of broom-corn is attracting increased attention, and is found to be a profitable southern crop. Yet, the aggregate product will scarcely be adequate to the wants of the trade.

Sorghum culture has extended southward, and beyond the Missouri; and the manufacture of syrup has increased. More attention than usual has been given to honey production in the younger States; in Kansas the buckwheat acreage has been extended very materially for the supply of bee forage.

Table showing the condition of the crops, &c., on the 1st day of November, 1869.

STATES.	Corn.		Potatoes, (*Solanum tuberosum.*)		Potatoes, (*Batatus edulis,*) sweet.		Tobacco.		Beans.—Product compared with last year.	Peas.—Product compared with last year.	Buckwheat.—Product compared with last year.
	Product compared with last year.	Average quality compared with last year.	Product compared with last year.	Average quality compared with last year.	Product compared with last year.	Average quality compared with last year.	Product compared with last year.	Average quality compared with last year.			
Maine	6.9	8.7	10.2	10.4	.....	.....	.....	.....	9.5	10.2	10
New Hampshire	8.3	9.3	10.3	10.5	.....	.....	.....	.....	10.3	10	10
Vermont	7.6	8.6	11.5	10.6	.....	.....	.....	.....	10.8	10.6	12
Massac'usetts	8.5	9	10.7	10 8	.....	.....	12.5	10	9.3	10.6	7.6
Rhode Island	9.3	9.6	11	11	.....	.....	.....	.....	11	10	.....
Connecticut	8.2	8.7	11.5	11	.....	.....	9.3	10	9.5	.....	8.5
New York	8.1	9	10.6	9.9	.....	.....	9	9	8.9	10.2	9.5
New Jersey	8.4	9.5	11	10.5	7.6	9.5	.....	.....	9	9	7
Pennsylvania	8.5	8.8	10.2	10.2	9.3	9.3	9.7	9.1	8.5	8.9	7.9
Delaware	7	10	5	10	5	10	.....	.....	8	10	4
Maryland	7.5	8.4	7.9	8.7	7	9.1	6.7	8	8.4	7.7	6.1
Virginia	7	8.7	8.8	9	7.2	8.5	6.6	7.3	7.7	8.4	4
North Carolina	7.5	8.8	8.1	8.6	6.8	7.8	9	9	6.6	6.3	6.8
South Carolina	6.5	8.3	7.8	9.8	5.5	7.4	.....	.....	.....	4.4	.....
Georgia	8.5	9.4	7.8	8.7	6.5	6.8	8	8.9	7	4.5	.....
Florida	10.7	10.2	10.6	10	9.1	8.7	9.6	10.6	10	8.4	.....
Alabama	9	9.3	9.2	9.4	8.5	7	.....	.....	.....	6.7	.....
Mississippi	8.5	9.6	9	10.3	7.4	9.6	7.6	10	9.8	6.8	.....
Louisiana	9.7	10.1	10.8	10	8.6	9.8	8	9	10	8.3	.....
Texas	10.7	10.5	10.5	11.2	10.6	10.3	9.5	10	12	10.9	.....
Arkansas	8.8	9.9	9.9	9.8	10	9.9	8.8	10.2	8.6	8.2	.....
Tennessee	7.5	9.5	8.5	9.5	7.7	8.7	9.3	9.8	6.6	7	7
West Virginia	8.9	10.2	10.3	10.4	10	9.6	10.2	10.1	10.4	10.1	8.2
Kentucky	8	9.2	8.8	9.8	9.3	10	8.3	8.3	9	8.8	8.5
Missouri	11.7	10.6	13.5	11.7	9.9	9.5	10.2	10.3	11	10	9.9
Illinois	8.3	10.6	14.6	11.2	10.5	10.3	9.6	10	10.4	9.3	12.7
Indiana	8	9.3	12.5	11	10.1	10.2	9.6	9.7	9.9	9.2	8.2
Ohio	8	9.4	13	10.6	9.9	9.8	8.6	9.8	10.6	10.2	8.9
Michigan	7.5	8.5	12.8	10.2	.....	.....	10.4	9.8	10	10.1	10.2
Wisconsin	7.4	7.5	12.5	10.5	8.6	9.3	10	8.6	10.5	9.7	11.1
Minnesota	10.5	8.5	9	8.6	.....	.....	9.3	10	10.7	10.2	11.1
Iowa	9.5	10.6	13.5	9.6	10.8	10.2	15	9	11.3	9.7	9.9
Kansas	18	10.5	17.4	14.5	11.8	11	10.6	11.3	11.7	13.5	11.8
Nebraska	17	10.5	16.7	11.6	9.3	9	12.5	11	13.8	12.1	14.5
California	10.7	9.6	10.1	9.2	11.6	10.6	.....	.....	10	9.8	11.2

Condition of the crops, &c., on the 1st day of November, 1869.—Continued.

STATES.	Flax.—Product compared with last year.	Hay.		Cotton.		Sorghum.—Product compared with last year.	Sugar Cane, (not sorghum.)—Indicated product compared with last year.	Grapes.—Product compared with an average crop.	Apples.—Product compared with an average crop.	Pears.—Product compared with an average crop.	Cranberries.—Product compared with an average crop.
		Product compared with last year.	Average quality compared with last year.	Indicated product compared with last year.	Indicated product (lint) per acre, *in pounds*.						
Maine	10	8.7	11	.....	.....	.....	.....	9.5	5	7.8	9.5
New Hampshire	.....	9.3	10.6	.....	.....	.....	.....	10	7.3	10	.....
Vermont	.....	11	10.3	.....	.....	.....	.....	8.7	9.5	10.6	.....
Massachusetts	.....	9.2	10.2	.....	.....	.....	.....	9.6	5.2	9	7.7
Rhode Island	.....	10	11	.....	.....	.....	.....	10	2.6	8.6	13
Connecticut	.....	11	12	.....	.....	.....	.....	9	8	10	9.5
New York	10.3	11.7	9.7	.....	.....	.....	.....	8.8	8.6	10.9	9
New Jersey	.....	9.6	9.8	.....	.....	9.6	.....	10	11.5	10	10.1
Pennsylvania	9.3	10.5	9.6	.....	.....	8	.....	9.2	8.9	10.5	10.5
Delaware	8	9	10	.....	.....	7	.....	12	12	12	.....
Maryland	.....	8.7	9.7	.....	.....	7.6	.....	11.1	11	14	.....
Virginia	9.1	9.9	10	.....	.....	7	.....	10.3	10	10.2	.....
North Carolina	8.8	8.8	10.2	9.5	145	8	.....	10	7.2	6.3	.....
South Carolina	.....	6.8	9.7	8.5	123	6.6	.....	9.6	7.1	5.2	.....
Georgia	.....	8	9.8	9.5	150	7	6.5	8.3	6.3	6.3	.....
Florida	.....	13.5	10.5	10.7	152	.....	8.1	.....	.....	.....	.....
Alabama	.....	8.1	9.7	10.8	176	8.2	10.5	8.6	7	7	.....
Mississippi	.....	9.5	11	11.5	201	8.4	11	11.6	7.7	6	.....
Louisiana	.....	9	8.8	11.2	206	.....	9.5	.....	7.6	6.6	.....
Texas	.....	10.8	10.8	12.5	275	10.6	10.5	9.5	9.6	10	.....
Arkansas	.....	9.7	9.7	11	251	8.6	.....	10.2	7.8	7.1	.....
Tennessee	10	10.9	10.7	9.5	160	8	.....	8.6	7.7	6.9	.....
West Virginia	9.8	11	10.9	.....	.....	9.8	.....	10.3	13.1	11.2	.....
Kentucky	9.3	10.1	10.2	.....	.....	8.5	.....	8.7	11.1	11.5	.....
Missouri	9	13	11	10	308	9.3	.....	9.6	12.5	10.9	.....
Illinois	9.2	12	10.4	.....	.....	8.8	.....	7.7	10.5	10.4	.....
Indiana	9.1	10.9	9.9	.....	.....	8.8	.....	8.9	11.6	11.3	11.1
Ohio	10.7	11.1	9.6	.....	.....	9	.....	8.4	7.9	11.3	.....
Michigan	11.3	11.3	9.3	.....	.....	8.5	.....	9.3	10.4	11.5	10.5
Wisconsin	11.5	11.5	9.2	.....	.....	6	.....	9.2	11	11.1	13.2
Minnesota	10.7	9	8.3	.....	.....	7.9	.....	10.4	11	.....	10
Iowa	9.5	11.6	8.9	.....	.....	8.7	.....	10.3	12.3	12.8	.....
Kansas	.....	13.5	10.6	.....	.....	11.8	.....	12.5	14.6	12.6	.....
Nebraska	.....	13	10	.....	.....	11.5	.....	11.1	11.1	11	.....
California	15.6	10.5	9.5	.....	.....	.....	.....	9.8	10	10.3	.....

NOTES ON THE CROPS.

CORN.

Sagadahoc County, Me.—On the first of September promised to be almost a failure, but warm weather and frequent rains, have given us quite a crop after all.

Androscoggin County, Me.—The warm weather of September and October ripened what corn was growing, which at one time promised to be an entire failure.

Windsor County, Vt.—The floods of October 4 and 5 took off a great deal of the corn in meadows, which will affect the prices in this locality.

Addison County, Vt.—The corn crop matured, and in quality is equal to the crops of our best seasons, though the quantity is a little deficient.

Orleans County, Vt.—Corn nearly an average crop, but not as well matured as last year.

Jefferson County, N. Y.—The favorable fall has given a fair average yield of corn.

Warren County, N. Y.—Corn was backward and small, but favorable weather has matured a much better crop than was expected.

Oneida County, N. Y.—The corn crop is better than anticipated, owing to the favorable fall.

Warren County, N. J.—Corn yields much better than was anticipated. Corn was set for an extra crop but was shortened by the drought, yet we have more than an average crop in the aggregate.

Hunterdon County, N. J.—The heavy rain of the 9th of October swept off corn in the shock and hay in the stack, and winter grains were badly washed.

Ocean County, N. J.—The drought shortened the corn crop fully fifteen per cent.

Sussex County, N. J.—The corn crop, the most important one of this season, is turning out much better than was supposed.

Hudson County, N. J.—The favorable fall weather has given us a much better corn crop than was anticipated.

Clearfield County, Pa.—Corn a light crop.

Elk County, Pa.—Corn turns out better than was expected, but not as well as last year.

Delaware County, Pa.—The corn crop did not ripen well.

Wayne County, Pa.—Corn crop medium—better than expected.

Clinton County, Pa.—The corn crop has turned out a fair one notwithstanding the unfavorable season.

Baltimore County, Md.—The corn crop is better than was expected, and it is worthy of remark that all fields that were badly tilled and in which weeds were permitted to grow were burnt up; but where the tillage was good and the weeds were eradicated, the crop was good, the drought having but little effect. The farmer's profit was in good tillage.

Queen Anne County, Md.—Some light lands, well drained and in good condition, made fair crops of corn, but low, wet and stiff lands are very deficient, some farmers not making enough corn for their own use.

Norfolk County, Va.—The best corn crop since 1860.

Gloucester County, Va.—The corn crop is better than expected. The stalk and blades were small, but the ears filled out well for the growth.

Nelson County, Va.—Corn on highland almost a total failure; on flats and rich slopes, where corn was planted early, there is about three-fourths of an average crop.

Wythe County, Va.—The corn crop is almost an entire failure, even lighter than expected.

King George County, Va.—Corn yields better than was anticipated.

Princess Anne County, Va.—The corn crop is very superior, both in quality and quantity, and such a product of corn fodder has not been realized for many years. Corn fodder is the hay crop of this county.

Farquier County, Va.—Early planted corn and potatoes have yielded fair average crops.

Hertford County, N. C.—Corn is short and inferior in quality.

Gaston County, N. C.—There has been no season in twenty years which has not given the farmer better results than the past year. Breadstuffs are alarmingly short.

Beaufort County, N. C.—The corn crop is a fair one and will equal that of last year.

Currituck County, N. C.—The product of corn will be at least double that of last year, when it was reduced one-half by rain.

Duplin County. N. C.—Corn much injured by drought, especially on upland.

Greene County, N. C.—The corn crop is considerably less than last year, both in acreage and product.

Camden County, N. C.—The corn crop has suffered less than other crops, and the yield will be an average.

Wayne County, N. C.—Corn product about two-thirds of a crop.

Caswell County, N. C.—The corn crop on flat lands has been injured by heavy freshets.

Newberry County, S. C.—Corn turns out light, even worse than was anticipated.

Union County, S. C.—The county has not made a supply of corn. Corn is now selling at $1 25 per bushel in the heap. Hogs for fattening are not abundant. Pork is expected to be high.

Fulton County, Ga.—The yield of corn is larger than was generally supposed.

Carroll County, Ga.—Corn in good bottoms is fine and yields more than was expected. Corn on uplands very poor.

Chattanooga County, Ga.—On gathering corn the crop proves not so large as anticipated. The yield falls forty per cent. below the crop of last year.

Bibb County, Ga.—Corn planted early, and manured, matured without being materially affected by the hot sun and drought, but the crop generally was seriously injured.

Independence County, Ark.—Corn wonderfully shortened by the drought.

Holmes County, Miss.—Short crop of corn—not enough for the use of the county.

Neshoba County, Miss.—The corn crop is short in quantity and light in quality, but approximated an average with former years.

St. Helena County, La.—Corn crop poor, from the fact that very little attention was given to the fertilization of corn lands, cotton generally being put in the best soil.

Tangipahoa County, La.—The corn crop is a good one in this county.

Blanco County, Texas.—More corn per acre than ever before.

Red River County, Texas.—The corn crop is a full average yield, and of very superior quality.

Lampasas County, Texas.—The largest and best corn crop ever grown in the county has been made and housed this season. Experiments are being made in the culture of cotton and the castor bean.

Coryell County, Texas.—Corn crop fine, with an average of about forty bushels per acre.

Attascosa County, Texas.—Corn crop considerably damaged by floods.

Walker County, Texas.—Corn turning out well, and is selling at fifty cents per bushel.

Ashley County, Ark.—The corn acreage shows a decrease, but the yield per acre is greater than last year.

Giles County, Tenn.—The corn product will be about half a crop.

Hickman County, Tenn.—Corn better than was expected; better in quality; less rotten corn than for several years.

Monroe County, Tenn.—About half a crop of corn; but what there is is sound and good.

Sevier County, Tenn.—Corn crop light but good.

Smith County, Tenn.—Corn turns out better than expected, and the quality is twenty per cent. better than the crop of last year.

Nicholas County, W. Va.—Lightest corn crop for several years; twenty per cent. short.

Kanawha County, W. Va.—Corn crop light but of good quality.

Braxton County, W. Va.—Corn crop an average and very sound.

Morgan County, W. Va.—Corn crop of good quality; but the county does not raise enough for home consumption, agriculture being neglected for the trade in bark, lumber, and cooper's stuff.

Carroll County, Ky.—Late corn was very materially injured by the cold weather of October.

Butler County, Ky.—A great deal of corn was frosted in October.

Russell County, Ky.—Corn unusually sound.

Trimble County, Ky.—The cold spell in October materially injured corn in the shock and in the field.

Pulaski County, Ky.—Favorable fall weather has made a much better corn crop than was expected. On lands well prepared by deep plowing, and planted early, and well worked, the yield is not much reduced.

Graves County, Mo.—Corn product about one-tenth over the crop of last year; quality about an average.

Lewis County, Mo.—The corn crop is not more than half an average, on account of the wet season.

Mississippi County, Mo.—Corn was very promising, but was injured by both storm and drought.

Adair County, Mo.—Corn crop twenty per cent. short.

Johnson County, Mo.—Though the season has been unfavorable, there is a big corn crop in the county.

Callaway County, Mo.—Corn, in timber land or rolling prairie, is very fine; flat prairie was too wet.

Cass County, Mo.—Corn more than an average crop, owing to increased acreage.

Grundy County, Mo.—Corn, on level land, a total failure; on rolling land the crop is good.

Holt County, Mo.—Corn crop equal, if not superior, to any ever raised in the county.

Cole County, Mo.—Potatoes frozen in the ground.

Hancock County, Ill.—There are thousands of acres of corn that amount to nothing. The average yield for the county is thought to be about eighteen bushels. Many hundreds of acres not worth cutting for fodder.

Boone County, Ill.—Small yield of corn, but the quality is good.

La Salle County, Ill.—Corn crop decreased thirty per cent. from that of last year, but the quality is good.

Effingham County, Ill.—An average corn crop.

Mercer County, Ill.—Favorable fall weather has made a fair corn crop out of poor material.

Winnebago County, Ill.—The yield of corn is below the general expectation, about the first of October. Much of it is soft, unfit to crib.

Harrison County, Ind.—The corn crop falls one-third short of that of last year.

Warren County, Ind.—The corn crop of this county is short one-half, and is poor in quality.

Delaware County, Ind.—Not more than half crop of corn, but the abundant wheat crop makes up the deficiency.

Martin County, Ind.—The late corn was much injured by the severe frosts of October, when it was barely out of "roasting ear."

Brown County, Ind.—Corn above an average crop, sound and well-filled.

Lorain County, Ohio.—The favorable fall weather brought up the corn crop to an average with that of last year, upon less acreage.

Portage County, Ohio.—The favorable fall has given a fair corn crop, sound and bright.

Holmes County, Ohio.—Corn, on high rolling lands, is better than an average; not so good on bottom lands. The corn lands of the county are mostly rolling.

Carroll County, Ohio.—Corn injured on low lands by wet weather and early frost, but upland corn is very good.

Greene County, Ohio.—Corn crop about twenty per cent. short, but of good quality.

Athens County, Ohio.—Corn crop better than was expected at date of last report.

Clinton County, Mich.—Increased yield of corn per acre, but decreased acreage; quality superior, and aggregate increase twenty per cent.

Oakland County, Mich.—The season has been so cold and wet that corn has not matured; not more than one-half sound and ripe.

Hillsdale County, Mich.—Corn crop better than expected at last report.

Ozaukee County, Wis.—The early frost killed what little corn was left.

Vernon County, Wis.—The early frost has killed all the late corn.

Brown County, Wis.—Corn ripened better than was anticipated in September, but the quality and quantity are much under an average.

Goodhue County, Minn.—White and yellow flint corn ripened well; dent corn unsound, the summer having been too cool and wet.

Le Sueur County, Minn.—The rot and frost have made the potato crop very light.

Floyd County, Iowa.—Corn does not yield as was anticipated; quality poor.

Harrison County, Iowa.—A good corn crop.

Page County, Iowa.—Corn crop better than last year.

Iowa County, Iowa.—Corn acreage considerably increased, but yield per acre and quality much reduced from last year, through want of cultivation, resulting from wet weather.

Cherokee County, Iowa.—Corn is heavy, but not all sound.

Pocahontas County, Iowa.—The favorable fall has matured a heavy crop of corn. The acreage would have been larger had not some of the farmers been afraid of early frost, resultant from the eclipse.

Hardin County, Iowa.—Corn crop twenty per cent. below that of last year in quantity, though equal in quality. There was a large increase

in the acreage, and but for the incessant rains the crop would have shown a large advance over last summer.

Nemaha County, Kans.—The largest and best crop of corn ever raised in the county. Last year the crop was a total failure.

Riley County, Kans.—A heavy crop of corn.

Franklin County, Kans.—The corn product is at least double that of last year.

Cloud County, Kans.—Large crop of corn—some lands averaging sixty bushels to the acre.

Johnson County, Kans.—Corn on rolling ground is good; on level ground poor, in consequence of rains. The aggregate yield is about the same as last year, considering increased acreage.

Merrick County, Neb.—Corn injured by early frost.

Cass County, Neb.—Corn will average forty bushels to the acre the county over.

Otoe County, Neb.—Corn is in excellent condition and is being rapidly gathered.

San Bernardino County, Cal.—Corn a heavy crop.

San Pete County, Utah.—Best crop of corn ever raised in the county.

COTTON.

Hertford County, N. C.—The drought has been severe upon all crops except cotton, which has done well.

Halifax County, N. C.—The drought has been less injurious to cotton than to corn, and the season has been so favorable since picking commenced that two-thirds of the crop was gathered by November 1.

Martin County, N. C.—Cotton matured much earlier than usual in consequence of the rust. The crop is coming in rather better than was anticipated, though it is not much above two-thirds of a fair crop.

Beaufort County, N. C.—Cotton has turned out better than was expected at the beginning of the picking season. The crop matured earlier than usual, and the weather for picking has been all that could be desired. Fully one-half the crop has already been sent to market. More fertilizers have been used this year than usual, and have paid well. Peruvian guano, among commercial manures, has paid best. Subsoiling before planting was done to some extent, and in all cases coming under the writer's notice, has been of great benefit to the crop.

Duplin County, N. C.—Cotton is much better than was anticipated, and the acreage is fully equal to that of last year. Large quantities of commercial fertilizers have been used, which with improved methods of cultivation have largely increased the yield of lint cotton over that of 1860.

Harnett County, N. C.—Cotton much injured by drought. The increase in aggregate crop is from the increased acreage put in cotton.

Wayne County, N. C.—Cotton yields surprisingly, considering the dry August. Farmers have cotton on the brain.

Mecklenburg County, N. C.—Although the receipts of cotton amount to double those of last year up to date, the crop will not average more than half a crop. Most of the crop has been gathered. The frost has killed the late bolls.

Montgomery County, N. C.—The acreage in cotton this year was thirty per cent. greater than last season, but the crop has never been shorter than the present season.

Greene County, N. C.—Cotton is coming in better than was expected

a month ago. The yield per acre is not so good as last year, but the acreage is larger and the product will be nearly the same.

Columbus County, N. C.—Cotton is better in this county this year than ever before—more of it planted.

Camden County, N. C.—Cotton crop almost a failure.

Newberry County, S. C.—Considering the increased acreage, the cotton crop will amount to about four-fifths of a crop.

Union County, S. C.—The cotton crop is light in this county, about half a full crop, and about twenty per cent. below the product of last year.

Anderson County, S. C.—The increased acreage will bring the cotton crop up to an average, though there is a decreased yield per acre.

Orangeburg County, S. C.—Either from the peculiar season, or the effects of the quantity and quality of the commercial fertilizers used, cotton is yielding less lint to the pound of seed cotton than usual, but it is of much better quality.

Brooks County, Ga.—The cotton crop is not as large as was anticipated two months ago.

Chattahoochee County, Ga.—Cotton is better than was expected the 1st of October.

Pulaski County, Ga.—The aggregate cotton product will equal the crop of last year, though the yield per acre has fallen off one-third to one-half.

Franklin County, Ga.—About one-third of a crop of cotton in this county.

Spaulding County, Ga.—Cotton is turning out better than was generally expected sixty days ago.

Pike County, Ga.—Cotton has suffered severely from dry rot and rust, which, together with the second drought, caused considerable falling off, notwithstanding the great amount of commercial manures used. The fertilizing generally paid well.

Carroll County, Ga.—Owing to the favorable weather for cotton opening, the crop will be about one-tenth larger than expected a month ago.

Chattanooga County, Ga.—The yield of cotton is not equal to that of last year, but the increased acreage makes the aggregate product as large.

Johnson County, Ga.—Cotton injured by the drought, but there being more planted in the county this year, the crop will be nearly equal to that of last year.

Stewart County, Ga.—Drought and intense heat, combined with strong dry air currents, have reduced the cotton crop nearly or quite fifty per cent. below that of 1868.

Bartow County, Ga.—The quality of the cotton crop is superior to that of last year, not having been damaged by rain.

Volusia County, Fla.—All crops except cotton have been cut short by the drought in this county.

Putnam County, Fla.—The product of cotton is equal to the crop of last year.

Jackson County, Fla.—The use of fertilizers this year has caused a greater diversity than in former years, yet the casualties to the cotton crop have been greater. The fall has been very dry, affording ample time to pick clean and secure a larger yield than usual, and the same cause has lessened the weight of seed and lint in proportion to the bulk.

Bradford County, Fla.—The cotton crop will not fall more than one-tenth short of that of last year.

Independence County, Ark.—Cotton was greatly injured by the drought,

but the favorable fall weather opens almost every boll, and the crop is being secured with less loss and waste, and the staple cleaner and in better condition, than at any time within the last twelve years.

Johnson County, Ark.—Bottom crop of cotton is good; middle crop, most squares and bolls fell off; top crop, bolls fully grown, with indications that all will open.

Dallas County, Ala.—On the 1st of November quite four-fifths of the cotton has been gathered. The prevailing prices and apprehension of a decline have stimulated early shipments and rapid sales.

Macon County, Ala.—The cotton crop shows an increase of ten per cent. over that of last year—due to increased acreage more than to increased production per acre.

Clarke County, Ala.—About twenty per cent. increase in cotton crop. I have used the soluble Pacific guano on worn lands, one hundred pounds, two hundred pounds, and four hundred pounds per acre. The increase has been from one hundred to three hundred per cent. The four hundred pounds produced a bale of five hundred pounds to the acre; other lots in like proportion.

DeKalb County, Ala.—An average crop of cotton.

Greene County, Ala.—The cotton crop has been gathered in superior condition, free from dust and trash.

Winston County, Miss.—The cotton crop generally is very late in this county; the early frost has cut off at least one-third.

Washington County, Miss.—The season was late, and frosts have been very severe, and labor is so scarce that not half the cotton in this county has been picked; the storms of December will bury thousands of bales in the fields.

Holmes County, Miss.—The late bloom of cotton was shed, and there is no top crop.

Lauderdale County, Miss.—While this cou[illegible]ot made the amount in pounds of cotton that was produced last y[illegible]e staple of the present crop is very superior; nine-tenths of th[illegible]op has been gathered. The price, 23½ cents per pound, will more [illegible]han make up the loss in pounds, and the farmers are looking up. No lack of laborers.

Yalabusha County, Miss.—If the late bolls open there will be an increase of ten per cent. in the cotton crop; if not, the crop will fall short of that of last year.

Neshoba County, Miss.—The cotton yield does not sustain the promise made by the growing plants, and the crop will not exceed the product of last year.

Summit, Pike County, Miss.—This is one of the most important shipping points on the New Orleans and Jackson railroad. For the year ending August 31, 1868, there were shipped 8,201 bales; the shipments for the current year may reach 9,000 bales.

Winston County, Miss.—One-third of the cotton crop cut off by the early frost.

Yazoo County, Miss.—The favorable fall weather has brought the cotton crop nearly or quite up to that of last year.

Attala County, Miss.—Early cold weather has injured the cotton crop in this county.

Tensas County, La.—The fine fall weather has caused the cotton to open out finely, and so greatly facilitated the gathering of the crop that the product run thirty per cent. above that of last year; with an abundance of labor and fair weather the figures might be made to run still higher. Pickers get seventy-five cents to one dollar per hundred pounds, and still the cotton wastes in the fields.

St. Helena County, La.—The cotton crop, though greatly injured by the September storms, will equal that of last year, owing to the increased acreage.

Lavaca County, Texas.—Where grasshoppers did not injure it cotton makes fully a bale to the acre. The early planting produced an average crop. The late planting was cut short by grasshoppers—barely half a crop.

Dallas County, Texas.—This county will make about 4,300 bales of cotton.

Red River County, Texas.—The severe drought and extremely hot weather alone prevented an immense crop of cotton in this county, and a full average yield per acre and more than an average yield of lint is still reported.

Upshur County, Texas.—The cotton crop at one time bid fair to far exceed that of 1868, but the unfavorable season has reduced the product one-third.

Fayette County, Texas.—A decided improvement here in cotton culture, and where seed was well selected and planted early five hundred pounds of lint to the acre have been realized. The freedmen are working better this year than last, and have good crops except in the overflowed district.

Smith County, Texas.—The yield of cotton is better than was anticipated, the favorable fall weather compensating for the drought in a great measure.

Blanco County, Texas.—Season unfavorable for cotton. The average product will be about three hundred pounds seed cotton per acre.

Coryell County, Texas.—The cotton crop will average three hundred pounds of lint to the acre. The yield would have averaged five hundred pounds per acre, but for the overflows in the spring and early summer. This is the first season that cotton has been planted to any extent in this county.

Grayson County, Texas.—About six thousand acres in cotton in this county, which will average about two-thirds of a bale per acre if the full crop can be gathered.

Matagorda County, Texas.—Cotton much injured by worms and heavy rains, in consequence of which low lands made comparatively little.

Ellis County, Texas.—The drought reduced the cotton crop at least one-fourth, yet there will be a fair yield per acre, and the acreage in the county is considerably more than double that of last year. The quality is also good, and the crop has been nicely handled.

Ashley County, Ark.—This county will average about three hundred pounds lint cotton per acre on bottom lands, and about one hundred and fifty pounds on upland.

Prairie County, Ark.—The aggregate yield of cotton will be equal to the crop of last year, the area planted having been increased.

Rutherford County, Tenn.—One-third of a full crop of cotton. The best lands will yield about three hundred pounds of seed cotton, which in other years produced eight hundred to one thousand pounds. About two hundred pounds to the acre will be the average for the county.

POTATOES.

Waldo County, Me.—The extreme wet weather of October considerably damaged the potato crop.

Kennebec County, Me.—Many potatoes not yet dug, though there is

deep snow on the ground. Many will be lost. Recent rains increased the rot.

Sagadahoc County, Me.—The potato crop one month ago was considered extra, but now there is great complaint of the rot.

Androscoggin County, Me.—Potato crop short in quantity, but superior in quality.

Sullivan County, N. H.—The corn crop ripened, though two weeks late. No frost of any consequence until October.

Addison County, Vt.—Potatoes yielding well, but the late harvested are much infected with the rot.

Orleans County, Vt.—A larger yield of potatoes than last year, but the rot is more serious. From ten to twenty per cent. of the crop is under the snow, yet unharvested.

Norfolk County, Mass.—The root crop is fine and large.

Jefferson County, N. Y.—A great yield of potatoes, but they are affected by the rot in some localities.

Niagara County, N. Y.—A heavy crop of potatoes, but half have rotted.

Rensselaer County, N. Y.—Many undug potatoes frozen on 30th October.

Washington County, N. Y.—Potatoes are rotting badly.

Lewis County, N. Y.—Many potatoes frozen in the ground.

Oneida County, N. Y.—The potato crop is good, except such as did not ripen.

Wayne County, N. Y.—Potatoes rotting.

Ocean County, N. J.—The drought seriously affected the potato crop.

Hudson County, N. J.—The potato crop is large, and of good quality.

Elk County, Pa.—The potato crop is poor generally. Some are so poor or so much affected by the rot that farmers have not taken them from the ground. I find by careful experiment this season, that for this county, the Early Rose, the Goodrich, and the Garnet Chili are the best varieties for the early crop, and the Harrison for a late crop. Peach blows a total failure.

Delaware County, Pa.—Potatoes remarkably fine in quality. Some varieties which last year were very indifferent, are this season very good—owing, perhaps, to the dry weather.

Beaver County, Pa.—Potatoes are rotting to some extent.

Chester County, Pa.—Where potatoes were dug in hot weather, or were allowed to lay in the sun for several hours, they have rotted; but where carefully dug and kept out of the sun, there has been no decay. Where the rot set in among sun-exposed potatoes, it was arrested by sprinkling them with air-slacked lime.

Clinton County, Pa.—Potatoes are beginning to rot.

Bucks County, Pa.—Potatoes were mostly out of the way of the drought. Some instances of over four hundred bushels to the acre.

Wayne County, Pa.—Best potato crop in several years.

Clearfield County, Pa.—Potatoes rather a light crop.

Prince George's County, Md.—The potato crop suffered greatly from the heat and drought. The Orono and the Early Rose have yielded best in this section.

St. Mary's County, Md.—About half a crop of corn.

Queen Anne County, Md.—Potatoes were nearly all destroyed by the drought and the bugs.

Norfolk County, Va.—Sweet potatoes are a failure.

Nelson County, Va.—Late potatoes in northern exposures and light rich soil improved rapidly after the rains set in in September. Those

on lands exposed to the direct rays of the sun, and planted early, were failures.

King George County, Va.—Potatoes yield badly, and the tubers are unusually small.

Middlesex County, Va.—The drought reduced the late potato crop three-fourths, but owing to the large early spring crop, the aggregate product is greater than ever before in this county.

Hertford County, N. C.—Sweet potatoes almost a failure.

Stewart County, Ga.—Heat and drought have nearly ruined the potato and the pea crop. The potato crop has not been so poor, perhaps, in twenty years.

St. Helena County, La.—The sweet potato crop, an important interest in this county, is especially good.

Walker County, Texas.—Potatoes turning out well, and selling at twenty-five cents per bushel.

Kanawha County, W. Va.—There is a deficiency in the potato crop.

Graves County, Ky.—Potatoes of both kinds fall ten per cent. below the crop of last year, both in quantity and quality.

Lewis County, Mo.—Very fine crop of potatoes.

Worth County, Mo.—Nearly half the crop of potatoes lost by freezing in the ground.

Adair County, Mo.—Potato crop reduced twenty per cent. A great many frozen in the ground.

Johnson County, Mo.—Some potatoes frozen in the ground.

Callaway County, Mo.—A finer yield of potatoes was never known in the county—five times as many planted as last year.

Polk County, Mo.—Potatoes never were finer.

Grundy County, Mo.—Potatoes very abundant, with no market.

Holt County, Mo.—The potato crop of this year has never been surpassed, if equalled, in this county.

Hancock County, Ill.—Potato crop half dug when overtaken by frost. One-third injured by the freeze.

Rock Island County, Ill.—Many potatoes frozen. Not more than half dug at beginning of cold weather.

Madison County, Ill.—Potato crop larger and of better quality than last year.

Boone County, Ill.—Potatoes partly frozen in the ground.

La Salle County, Ill.—A fair yield of potatoes, but many have been frozen in the field.

Effingham County, Ill.—Potato crop above an average.

Tazewell County, Ill.—Potatoes in the ground October 25th one-half ruined.

Macoupin County, Ill.—One-tenth of the potato crop frozen in the ground.

Putnam County, Ill.—One-half of the potato crop ruined by the freeze in October.

Jackson County, Ill.—Potatoes injured by early frost.

White County, Ill.—Potato vines killed by frost before the roots fully matured, hence they are small.

Winnebago County, Ill.—The yield of potatoes is extraordinary, but about one-half the crop was in the ground at the time of the cold snap, 24th October, and about one-third of those were spoiled by the frost.

Clay County, Ill.—Large quantity of potatoes damaged by freezing.

De Witt County, Ill.—The potato crop is very large, but a large proportion was injured by frost.

Bureau County, Ill.—Three-fourths of the potato crop damaged by frost.

Harrison County, Ind.—The yield of patatoes, per acre, will fall short one-half; but the large increase of acreage will bring the aggregate product up to that of last year.

Johnson County, Ind.—Potatoes in the ground the latter part of October were injured to the extent of one-fourth by the cold weather.

Bartholomew County, Ind.—Potatoes injured by frost.

Elkhart County, Ind.—One-tenth to one-twentieth of the potato crop lost by freezing.

Union County, Ind.—Many potatoes not dug when overtaken by the cold weather the end of October.

Tippecanoe County, Ind.—The potato crop is perhaps the largest and best ever raised in the county.

Owen County, Ind.—One-eighth of the potato crop frozen and ruined.

Boone County, Ind.—Potatoes, where dug but not securely housed, were damaged by the cold weather in October; those in the ground suffered less.

Warren County, Ind.—Potato crop better than for many years. They are being cooked to fatten hogs to supply the place of corn.

White County, Ind.—A considerable portion of the potato crop was destroyed by frost in October—one-fourth being frozen in the ground.

Steuben County, Ind.—An unexampled yield of potatoes, and of the finest quality.

Delaware County, Ind.—Quantities of potatoes frozen in the ground.

Logan County, Ohio.—Potatoes very abundant and very fine.

Geauga County, Ohio.—Potatoes have rotted badly.

Portage County, Ohio.—A heavy potato crop, but not more than half harvested when covered with the snow of 26th October.

Holmes County, Ohio.—An unusually large potato crop.

Brown County, Ohio.—Potatoes injured by the freeze.

Union County, Ohio.—Potatoes superior in yield and quality, with a large increase in acreage.

Ottawa County, Mich.—Potatoes average about two hundred bushels per acre, and are well ripened and free from rot.

Manistee County, Mich.—The potato crop is largely in excess of that of last year, when the crop was almost a failure.

Ontonagon County, Mich.—Most of the potato crop is covered by snow, but as the ground does not freeze they can be dug next spring.

Oakland County, Mich.—A large proportion of the potato crop is still in the ground.

Leelenaw County, Mich.—Nearly all the potatoes are snowed up and frozen.

Hillsdale County, Mich.—Potatoes on loose soil much injured by frost.

Polk County, Wis.—Potatoes have rotted badly.

Marathon County, Wis.—Half the potato crop rotten and useless.

Walworth County, Wis.—Fully one-half the potato crop frozen, mostly before digging.

Outagamie County, Wis.—Potatoes rotting badly.

St. Croix County, Wis.—Potatoes are late and some have been frozen in the ground.

Chippewa County, Wis.—A heavy crop of potatoes, but the wet weather has caused many to rot, and those left in the ground late have been frozen.

Brown County, Wis.—Many farmers planted no potatoes; those who planted in sandy soil realized good crops.

Meeker County, Minn.—Potatoes almost a failure.

Mille Lacs County, Minn.—Potatoes have rotted more than ever before.

Watonwan County, Minn.—Some complaint of potatoes rotting in the hill.

Goodhue County, Minn.—Potatoes injured by the bug.

Floyd County, Iowa.—Many potatoes frozen in the ground.

Black Hawk County, Iowa.—An unprecedented yield of potatoes, both in quantity and quality; but a large portion of them are frozen up in the ground.

Clinton County, Iowa.—Potatoes that were not dug before October 26 were frozen, and some that were dug but not sufficiently covered were destroyed.

Madison County, Iowa.—About half the potato crop lost by freezing in October.

Palo Alto County, Iowa.—Potatoes rotting badly.

Emmett County, Iowa.—A heavy potato crop and of fine quality except on flat or wet land, where they were attacked with the dry rot.

Montgomery County, Iowa.—An early frost has destroyed one-third of the potato crop.

Harrison County, Iowa.—Potato crop almost a failure; many rotted in consequence of the wet weather; and many were frozen in the ground in October.

Brenner County, Iowa.—The ground frozen to the depth of two inches in October, with most of the potato crop undug.

Page County, Iowa.—An extraordinary crop of potatoes. One farmer dug 350 bushels from 136 rods.

Cherokee County, Iowa.—Potatoes have suffered much from rot; the peach-blows were nearly exempt.

Pocahontas County, Iowa.—About one-third of the potatoes have rotted.

Linn County, Iowa.—Some potatoes rotted and large quantities were injured by frost.

Monona County, Iowa.—Up to within ten days of digging time there was promise of a most remarkable potato crop, when the rot commenced and destroyed a great quantity, and then the freeze destroyed a large portion of those that escaped the rot.

Buchanan County, Iowa.—Large crop of potatoes, but much injured by early frost.

Jefferson County, Kans.—Potatoes badly frosted in October—large quantities yet in the ground. The yield in many instances has been from 300 to 500 bushels per acre. Prices, 20 to 25 cents per bushel.

Ottawa County, Kans.—Potatoes damaged one-tenth by cold weather.

Atchison County, Kans.—One-third of the potato crop frozen in the ground.

Cloud County, Kans.—Heavy crop of potatoes—250 bushels to the acre.

Coffey County, Kans.—Many potatoes frosted.

Washington County, Kans.—Large quantity of potatoes frozen in the ground.

Douglas County, Neb.—Potatoes rotted to some extent in low grounds.

Merrick County, Neb.—Half the potatoes frozen in the ground.

Pawnee County, Neb.—Potatoes in the ground injured by October frosts.

Otoe County, Neb.—A great many potatoes frozen in the field.

San Bernardino County, Cal.—A large crop of potatoes.

TOBACCO.

Baltimore County, Md.—The culture has been almost entirely discontinued in this county.

Buckingham County, Va.—A short crop of tobacco; quality inferior.

Nelson County, Va.—Tobacco, late as it was, rapidly improved in September and October. Where it had been forced early in the growing season, on high dry land by fertilizers, it was a complete failure.

Iredell County, N. C.—The weather being so dry the tobacco crop was cut short, but will make more than has ever been produced in this county before. The farmers have turned their attention to tobacco culture, and this is likely to become the chief crop.

Yadkin County, N. C.—The tobacco crop has turned out much better than was expected early in the season.

Caswell County, N. C.—The tobacco crop is short in quality and quantity, compared with the crop of last year.

Sevier County, Tenn.—Tobacco crop light, but of very good quality.

Smith County, Tenn.—The tobacco crop is larger and of better quality than for years.

Carroll County, Ky.—The cold weather of October entirely destroyed one-twentieth of the tobacco crop of the county and injured much of the remainder.

Livingston County, Ky.—Late tobacco much injured by frost in the house.

Hopkins County, Ky.—The severe frost in October has injured the tobacco crop, probably to the amount of one-tenth.

Gallatin County, Ky.—Tobacco crop seriously injured by the late freeze—to such an extent that not more than one-half of the crop made will come into market.

Ohio County, Ky.—The late frosts have seriously damaged the tobacco crop of this county.

Butler County, Ky.—All the late cut of tobacco was frozen quite hard in October—much in the house and some on scaffolds.

Henry County, Ky.—The October freezes, which commenced as early as the 20th, greatly damaged the tobacco crop of the county, large quantities of which were unhoused, hanging in a comparatively green state upon scaffolds in the fields.

Trimble County, Ky.—The tobacco crop was seriously injured in the field, out he scaffolds, and in the house, by the freeze of October. The damage will amount to hundreds of thousands of dollars.

Pendleton County, Ky.—Tobacco was put in the house in fine condition, but the crop was much injured by the October freeze.

Pulaski County, Ky.—But little tobacco planted this season.

Graves County, Ky.—Tobacco crop reduced ten per cent. as compared with the product of last year, both in quality and quantity. Causes: scarcity of plants, dry weather, and early frost.

Vinton County, Ohio.—The drought shortened the tobacco crop, but the quality is so much better than usual that the money product will be nearly equal to that of last year.

Brown County, Ohio.—About 25th October tobacco was seriously injured by freezing in the barns; loss estimated at from one-third to one-half of the crop.

FRUIT.

Waldo County, Me.—The great gale in September seriously damaged the apple crop.

Androscoggin County, Me.—Apples and pears almost a complete failure; grapes not more than half a crop.

Plymouth County, Mass.—The September gale stripped our trees of nearly all their fruit.

Suffolk County, Mass.—The fruit was all blown off in the September gale.

Kent County, R. I.—The violent gale of September 8 almost totally destroyed the apple crop in this county and State.

Niagara County, N. Y.—A heavy crop of apples. Grapes almost a total failure; the Isabella has not ripened, the Delaware is very poor, and the Hartford Prolific is the only variety which has matured.

Monroe County, N. Y.—Apples seriously injured by the hard freeze of the 26th of October.

Genesee County, N. Y.—One-half the apple crop has been exposed to the cold weather.

Erie County, N. Y.—Nearly all the grapes and thousands of bushels of apples frozen.

Orleans County, N. Y.—Apples injured by frost.

Ocean County, N. J.—The cranberry crop has been shortened (by the hot sun scalding the berrries) about one-fifth, so that the crop is not much above an average.

Berks County, Pa.—Apples more abundant than for years.

Delaware County, Pa.—Our apple crop is the finest grown for years.

Queen Anne County, Md.—Grapes have been abundant, the Concord proving the best.

Nelson County, Va.—Apples are small and defective.

King George County, Va.—Apples are fine in quality and plentiful.

Martin County, N. C.—The grape (Scuppernong) crop was never better. This county is especially adapted to this culture.

Currituck County, N. C.—Cranberries grow wild in the swamps, and have this year produced more than an average crop.

Chowan County, N. C.—The grape crop is very fine. There is a black Scuppernong vine in Mr. Cannon's vineyard that measures four feet in circumference two and a half feet from the ground. It is forty-five years old from the seed and is supported by 70 posts; yields 105 bushels of grapes, from which Mr. C. makes 315 gallons of wine.

Buxton County, W. Va.—The apple crop is very good both in quantity and quality,

Lewis County, Mo.—A great crop of apples, but many were frozen upon the trees.

Moniteau County, Mo.—Great quantities of apples were frozen on the trees in October.

Adair County, Mo.—Grapes, apples, and pears will average 20 per cent. more in quantity than last year.

Johnson County, Mo.—Thousands of bushels of apples frozen.

Callaway County, Mo.—A very heavy apple crop, but many bushels have been injured by cold weather.

Polk County, Mo.—One-fourth of the apple crop frozen on the trees the latter part of October.

Cass County, Mo.—Grapes rotted badly, and apples and other fruits were injured by hail early in the season.

Buchanan County, Mo.—Half the apple crop was frozen in October.

Cooper County, Mo.—The apple crop is larger than ever before known in the county, but many have been destroyed by frost. A large proportion will be made into cider.

Grundy County, Mo.—Many fruit trees injured by blight and scab. Grapes mildewed. Pears and apples inferior.

Cole County, Mo.—Apples frozen on the trees.

Hancock County, Ill.—Large quantities of apples frozen on the trees, so that they are useless, except for cider.

Rock Island County, Ill.—Concord grapes good; nearly all others failures.

Madison County, Ill.—A medium crop of apples only in a few orchards. Grape crop diminished by rot, particularly on the Catawba. Concord and the Norton's Virginia suffered but little.

Warren County, Ill.—Early frosts have done much damage to the apple crop.

Tazewell County, Ill.—Apples frozen solid on the trees, October 25.

Clay County, Ill.—Many apples injured by frost.

De Witt County, Ill.—Thousands of bushels of winter apples ruined by frost.

Bureau County, Ill.—About half the apple crop damaged by freezing weather.

Johnson County, Ind.—Apples on the trees injured by the October freeze. The sour varieties seemed to stand the cold weather the best.

Bartholomew County, Ind.—One-third of the apple crop injured by frost.

Union County, Ind.—Many apples frozen on the trees.

Owen County, Ind.—Nine-tenths of the winter apples so badly frozen as to be fit for cider only.

Dearborn County, Ind.—October 27, apples frozen upon the trees.

Boone County, Ind.—Thousands of bushels of apples were frozen upon the trees the latter part of October. Those in heaps on the ground, covered with snow, were not injured.

Warren County, Ind.—There is a cranberry marsh in this county of two hundred acres. The crop is immense, the wet season having been favorable.

White County, Ind.—About two-thirds of the winter apples were destroyed by the freeze in October.

Posey County, Ind.—A great many apples frozen on the trees.

Steuben County, Ind.—The heavy snow storm of 21st and 22d October ruined the winter wheat. Thousands of bushels of apples are being made into cider. The best sell at twelve and a half cents per bushel.

Park County, Ind.—Two-thirds of the apple crop frozen on the trees.

Brown County, Ind.—Apples frozen on the trees in large quantities; fit for cider only.

Fountain County, Ind.—A large portion of the apple crop frozen on the trees. Fit only for poor cider.

Franklin County, Ind.—Apples frozen on the trees.

Delaware County, Ind.—Fully half the apple crop frozen on the trees.

Vinton County, Ohio.—The apple crop is larger and better than any preceding crop in this county. Grapes were badly damaged by insects.

Logan County, Ohio.—One-third of the apple crop destroyed by freezing.

Geauga County, Ohio.—Some varieties of grapes have not ripened as well as usual, owing to rust.

Jackson County, Ohio.—Many apples frozen on the trees.

Greene County, Ohio.—Best apple crop in several years.

Columbiana County, Ohio.—The grape crop almost an entire failure.

Harrison County, Ohio.—Grapes badly frosted. Apples, about half a crop, and inferior in quality.

Athens County, Ohio.—A good apple crop, but many thousands of bushels have been frozen on the trees.

Lucas County, Ohio.—One-third the apple crop frosted upon the trees.

Branch County, Mich.—Nearly one-half of the winter fruit injured by freezing.

Van Buren County, Mich.—Best crop of fruit generally for ten years, but poor season for grapes, they not having ripened well. More cider than ever before made in the county.

Calhoun County, Mich.—One-third of the apple crop ruined by frost, except for cider. Not less than one hundred thousand bushels frozen in the county.

Ontonagon County, Mich.—A large crop of apples, but the early frost injured them before ripening.

Oakland County, Mich.—Not more than half the apple crop gathered, and the apples are frozen so hard as to be worthless, except for cider or vinegar.

Hillsdale County, Mich.—The apples were shaken down into the snow to save them, but about half were frozen on the trees.

Leelenaw County, Mich.—Nearly all the apples snowed up and frozen.

Allegan County, Mich.—The apple crop yet on the trees and frozen.

Warren County, Iowa.—There are in the county double the number of bearing apple and pear trees that have been reported heretofore.

Jefferson County, Kans.—The fruit crop, with the exception of peaches, has been abundant. Apple trees only four to six years old yield one to five bushels. Pears very fine. All well saved.

Franklin County, Kans.—Several years' observation and experience convince our correspondent that the light-red soil of the upland prairies of that county is well adapted to grapes. Grapes planted on black soil, somewhat stony, inclining to moisture, blighted, while those only a few rods from them, on the former, produced well.

San Bernardino County, Cal.—Fruits of all kinds, except grapes, abundant. Grapes not quite an average.

Tuolumne County, Cal.—The grape crop suffered severely from mildew, caused probably by late spring rains. A poor year for fruit. Considerable attention has been paid this season to starting mulberry nurseries.

Napa County, Cal.—The vintage was twenty to thirty days earlier this year than last, and the grapes became much shriveled before being gathered. In many localities mildew seriously affected the crop. The aggregate crop will be about nine-tenths the product of last year, there being more vines in bearing.

Santa Clara County, Cal.—The fruit crop has been above an average in quantity and quality.

Mendocino County, Cal.—Fruit yield below an average, but the growth of the young orchards has more than made up the deficiency.

Lane County, Oregon.—Apples yield well, but the general product does not increase, for the reason that people have just discovered that trees are short-lived, and orchards have not been sufficiently replanted.

MISCELLANEOUS.

Kennebec County, Me.—The yield of buckwheat is small, but the quality is excellent.

Franklin County, Me.—October was unusually wet, and the freshets did very heavy damage to farms and crops. Whole crops of corn, beans, and pumpkins were swept off, beside buildings well filled with hay, &c.

Addison County, Vt.—Buckwheat yields an abundant crop. The hay crop is one of the largest ever produced in the county; increased in most localities by the great growth of red and white clover. The freshets of October swept away entire fields of buckwheat and corn, cut and stacked.

Grand Isle County, Vt.—Buckwheat, as far as threshed, yields heavily.

Jefferson County, N. Y.—There is an abundance of hay of good quality. Our hay is improving in quality and quantity every year, in consequence of farmers top-dressing meadow-land.

Schenectady County, N. Y.—Broom-corn yields an average crop, and is well cured.

Ocean County, N. J.—Buckwheat crop seriously affected by the drought.

Sussex County, N. J.—The amount of butter made in this county will fall very considerably short of the average, owing to the shortness of the grass in summer and the early frost.

Elk County, Pa.—Buckwheat falls below the average in quality, owing to the wet season and early frost.

Westmoreland County, Pa.—Buckwheat proves almost an entire failure. The wet weather almost entirely destroyed the grasses over a large portion of the county.

Bradford County, Pa.—Buckwheat, on threshing out, proves an average crop.

Bucks County, Pa.—The culture of tobacco is annually increasing in the lower part of the county. The crop is very remunerative.

Lawrence County, Pa.—Not more than half a crop of buckwheat, the hot suns of August killing the plant while in bloom.

Cecil County, Md.—Buckwheat seriously injured, especially in the southern part of the county.

Wythe County, Va.—The buckwheat crop is scarcely worth reaping, owing to the drought.

Fairfax County, Va.—The drought cut off nearly the whole of the winter cabbage and turnip crops.

Middlesex County, Va.—A large black and yellow worm, one and a half to two inches in length, attacked the turnip crop in some sections, and nearly or quite destroyed the tops.

Georgetown County, S. C.—A great deal of rice planted in June has suffered from the frost, and the crop will be short and of inferior quality.

Richland County, S. C.—The pea crop is almost a total failure.

Barnwell County, S. C.—Crops short. The best land was selected, and more manure used than last year, and the crops were generally well cultivated; but the season was too dry.

Orangeburg County, S. C.—Owing to the extremely dry fall, the pea crop is a failure.

Pickens County, Ga.—Tobacco is nearly a full crop and of good quality.

Pulaski County, Ga.—Sugar crop reduced twenty per cent. by the drought. Peas reduced forty per cent.

Johnson County, Ga.—Sugar-cane, peas, and potatoes were severely injured by the drought.

Putnam County, Fla.—The only crop with us that exceeds an average is the orange crop, and the quantity upon the trees is truly surprising and is without precedent. Of lemons and limes there are scarcely any, the frost having destroyed the fruit-buds, though it did not generally injure the trees.

Attala County, Miss.—Corn is poor; no mast; and the hog prospect is perhaps as bad as we ever had. Enough stock, but a lack of feed.

St. Helena County, La.—The cultivation of broom-corn has attracted considerable attention, and the culture has proved a marked success. The average yield has been about one thousand pounds per acre, worth $100 to $140.

Perry County, Tenn.—The peanut crop injured to some extent by frost. Product for this county, about 150,000 bushels, which are readily selling to speculators at $1 60 per bushel. The average product per acre this year is eighty bushels where good stands were secured.

Smith County, Tenn.—There is good mast in the woods, and all the hogs will be fattened, though the number is much less than last year.

Laurel County, Ky.—The mast is good in this county, and hogs are fattening upon it.

Logan County, Ohio.—Hog crop good in quality, but below an average in quantity.

Union County, Ohio.—Sorghum is inferior; but few patches have ripened sufficiently to make good sirup.

Polk County, Wis.—The season has been very wet, and much hay has been damaged; hundreds of tons totally destroyed.

Walworth County, Wis.—The most marked loss of crop for years in this county is the failure of the clover-seed crop. This crop is usually large, but this year it is an entire failure; no seed in first or second crop.

Outagamie County, Wis.—Thousands of tons of hay on the marshes have been left uncut on account of the high water.

Monroe County, Wis.—The crop of wild cranberries in this county will probably reach 3,000 bushels.

Jackson County, Wis.—A great quantity of hay has been destroyed by the fall rains, and much more damaged.

Rock County, Wis.—I am fully persuaded that the yield of wheat in Rock County will not exceed seven bushels per acre; oats, twenty-five bushels; corn, fifteen bushels of No. 2 Chicago grade; and I am equally confident that Rock County is fully up to any county in Southern Wisconsin or Northern Illinois.

Chicago County, Minn.—About half the hay crop destroyed by October floods. Hay scarce and poor.

Meeker County, Minn.—Hay is scarce, but much grass was cut after the first frost, which, though scarcely to be called hay, will help out.

Watonwan County, Minn.—The sorghum crop is a complete failure.

Washington County, Iowa.—The yield of honey in this locality is greater than for the past six years.

Palo Alto County, Iowa.—Sorghum has not done well the past season; the wet weather caused much of the seed to rot. Sorghum will grow well in this county, but the seed is not good, being a mixture of different varieties.

Harrison County, Iowa.—A good crop of sorghum.

Page County, Iowa.—Sorghum culture is declining.

Osage County, Kans.—Prairie fires frequent and terrible; much hay and many animals burned.

Woodson County, Kans.—The buckwheat acreage was double that of last year, but the yield per acre will not be more than half an average. A large area was sown for bee range, and the honey crop has been enormous.

Jackson County, Kans.—Honey more abundant than usual. The Italians excel.

Pawnee County, Neb.—This county will this fall turn out about twenty-five thousand gallons sorghum sirup.

San Bernardino County, Cal.—An immense crop of barley with increased acreage.

San Diego, Cal.—The yield of barley and wheat is the largest ever harvested in this county.

Siskiyou County, Cal.—The wool clip this year has been good, with the prospect that next year the clip will be larger than for many years.

Benton County, Oregon.—It is estimated that one-fourth of the wheat grown in this county will be unfit for bread, on account of the grain swelling before it was threshed.

Lewis County, Washington Territory.—Fall grazing better than ever before. Cattle in good condition.

EXTRACTS FROM CORRESPONDENCE.

EXPERIMENTS WITH SEEDS.

Agricultural College, Centre County, Pa.—The oats and barley received from the Department of Agriculture in the winter and spring of 1868–69 were committed to William C. Huey, assistant superintendent of the Central Experimental Farm connected with the college, for trial upon the experimental plats, each of which contains exactly one-eighth of an acre. The results, extracted from his interesting report, are given in the following table, showing the time of sowing, cutting, and housing, and the product in pounds in the sheaf and in the grain:

	Sown.	Cut.	Housed.	Product—pounds.	
				Sheaf.	Grain.
EXCELSIOR OATS.					
Plat No. 105	April 14	July 30	August 2	700	257
Plat No. 106	April 14	July 30	August 2	690	260
Plat No. 501	May 3	July 30	August 2	725	237
WHITE SCHONEN.					
Plat No. 503	May 3	July 30	August 2	780	257
[illegible] OAT.					
Plat No. 505	May 3	July 30	August 3	525	206
SANDOMAN BARLEY.					
Plat No. 502	May 3	July 30	August 2	650	192
PRUSSIAN BARLEY.					
Plat No. 504	May 3	July 30	August 2	520	170
COMMON FOUR-ROWED BARLEY.					
Plat No. 104	April 12	July 30	August 2	505	209

From this table it will be noted that the several varieties produced are as follows:

Excelsior oats, plat No. 105 ..... 64¼ bushels per acre.
Excelsior oats, plat No. 106 ..... 65 bushels per acre.
Excelsior oats, plat No. 501 ..... 59¼ bushels per acre.

White Schonen oats, plat No. 503.....64¼ bushels per acre.
Somerset oats, plat No. 505.....51½ bushels per acre.
Saxonian barley, plat No. 502.....32$\frac{40}{47}$ bushels per acre.
Probstier barley, plat No. 504.....29 bushels per acre.
Common four-rowed barley, plat No. 104.....35$\frac{27}{47}$ bushels per acre.

The Pennsylvania State Agricultural Society, at the exhibition in Harrisburg, October 1, 1869, awarded to Mr. Huey the premium for the best bushel of barley—Probstier; also the premium for the best samples of newly introduced grains valuable to farmers, embracing the Excelsior, Somerset, and Schonen oats, and the Probstier and Saxonian barley, produced as above stated. The Excelsior oats and the Probstier barley were also severally awarded the first premium by the Centre County Agricultural Society at the exhibition in Bellefonte, October 8, 1869. The White Schonen oats matured later than the other varieties, and were cut a few days before they were fully ripe. This variety and the Excelsior are likely to prove very valuable additions, and the Commissioner of Agriculture is entitled to the thanks of the community for their introduction.

Opelika, Ala.—I herewith report the result of an experiment with soluble Pacific guano applied to cotton. I left three rows without guano in the center of a two-acre lot. As the surface is inclined at an angle of 20 degrees, and as the movement of the top is therefore down this inclined plain, rendering appreciably more productive each succeeding lower row, nine rows were used for the test, three rows next above and three rows next below the rows in which no guano was used. The rows were 300 feet long. There were 185 stalks in each of the three rows without guano, and 200 stalks in each of the rows to which the guano was applied. The stand was poor; the weed was so small that at least 400 stalks to the row would have been sustained. The rows were three feet apart; seed common; planted April 15. The culture was deep, but I am convinced that shallow culture would have been better. Land, poor, sandy, pine woods. Nearly the entire crop was in boll before August. No late crop, in consequence of the drought. One hundred and sixty pounds of the guano was used to the acre. The result was as follows, showing an increase of nearly one hundred per cent. attributable to the application of guano:

	Three upper rows. (With guano.)	Three middle rows. (Without guano.)	Three lower rows. (With guano.)
	Lbs.	*Lbs.*	*Lbs.*
First picking, September 7	11¼	1½	12½
Second picking, September 14	5	1½	6
Third picking, September 24	6	7/8	6
Fourth picking, October 21	4½	4½	4½
Fifth picking, November 1	2½	2½	2½
Sixth picking, November 20	3½	3½	4
	32¾	17⅞	35½

Piscataquis County, Me.—Sowed one quart Saxonian barley. Owing to heavy rains soon after it was sowed, fully one-third of the seed was lost. Every farmer who has seen it pronounces it ahead of anything hitherto seen. Arnautka spring wheat: The ground was wet and many

kernels failed to grow. Then the worms attacked it, and at one time I would have been willing to sell the entire crop for the seed, but by a liberal distribution of ashes I saved enough to harvest a little more than six for one. I am very hopeful in relation to this variety; so are my neighbors, who would buy it at extravagant prices, but that wheat is not for sale. Black Swedish oats: The crop was an average. As their appearance is so different from other varieties they would be less saleable, and therefore I do not think they will be profitable. Onions: Of the many varieties several did passably well, but the best crop was raised from the Weathersfield large red.

Sullivan County, N. H.—From two quarts of the Arnautka spring wheat the yield was thirty quarts. From one quart of barley received from the Department the product was one bushel, weighing 51 pounds.

Addison County, Vt.—I herewith most respectfully report the product of four packages of Arnautka spring wheat, received in April last, sown the 1st of May on clay land plowed the fall before, highly manured and harvested the second week in August. When threshed it produced 176 pounds, nearly three bushels. The straw stood strong, the heads were heavy, and the berry was long and full, and not in the least injured by the wheat midge. If it continues to produce as well, it may prove as valuable to this section of country as the Black Sea wheat, which was originally introduced from near the same place. One package of black oats received and sown was a perfect failure; they fell and did not head. One package of single rowed barley produced highly, and is not considered as valuable here for malting as the double rowed barley.

Windham County, Conn.—The Polish wheat sent me last fall was sowed October 10, a month later than usual for winter grain. It barely appeared above ground before winter set in and, as might have been expected, it was badly winter-killed. A portion survived, and I harvested one and a half bushels of good wheat, and have sown the whole of it under more favorable auspices. The English oats you sent last spring did finely. We have saved all for seed. The black oats did not do so well. The Six-weeks turnips were inferior in quality.

Cumberland County, N. J.—The English rough-chaff wheat received from the Department proved an entire failure in this county. The Schonen oats did well.

Dauphin County, Pa.—The rough-chaff wheat received from the Department in the fall of 1868 came rather late in the season. I however put it out in good ground. It was late in maturing, and was almost entirely destroyed by the fly, while our red (Lancaster) Mediterranean was not in the least affected. The white Swedish and Schonen oats are remarkably fine, yielding largely and weighing nearly forty pounds to the bushel. For this latitude I could wish for nothing better. The black oats are also superior to those in common use here, but I judge not equal to the varieties above named. The Saxonian barley also did exceedingly well with us, and I judge it to be a variety worthy of the most extensive distribution.

Prince George's County, Maryland.—The Talavera wheat received from the Department yielded at the rate of fifteen bushels per acre, though from some cause the grain was shriveled more than usual. The barley proved fine, and yielded at the rate of thirty bushels per acre. The quart of Black Swedish oats yielded one bushel of clean oats, weighing twenty-nine pounds. The White English oats proved poor; both sown on similar land, with similar culture; both land and culture good.

Tazewell County, Virginia.—The twelve pounds of Tappahannock wheat received from the Department about the middle of October, 1868, pro-

duced two hundred and fifty pounds of most beautiful wheat; in fact, the finest grain ever seen in this county. The straw was a beautiful golden color, the grain plump and very fair. It ripens some ten or twelve days earlier than any other kind, and the number of stalks from a single grain is from twelve to fifteen. It was injured in various ways by fowls, rabbits, &c., and should have been sown at least one month earlier.

Grayson County, Texas.—The Tappahannock wheat sent me last fall yielded about forty bushels per acre, weighing sixty-three pounds per bushel.

Montgomery County, Arkansas.—One bushel of Tappahannock wheat from the seed (one peck) sent from the Department last fall was exhibited at the State fair held at Little Rock, on the 12th to the 15th instant, and obtained the *first premium therefor.*

Polk County, Tenn.—The peck of Tappahannock wheat received from the Department one year ago was sowed in stiff mulatto soil, without manure, and the yield was fourteen fold better than other varieties on the same soil.

Edmonson County, Ky.—The peck of Tappahannock wheat sent me by the Department last fall was sown in tobacco ground, and yielded five and one-fourth bushels of No. 1 cleaned wheat, which is an extraordinary yield for our county for any kind of wheat.

McCracken County, Ky.—My Tappahannock wheat was very fine, probably better than any other variety among us. I sowed all I saved (one and a half bushel) in fair land, and hope to get seed of it for next fall. Of the oats and barley sent, none is good here but the White Schonen oats, which produces tolerably.

Sangamon County, Illinois.—The Goodwin's Imperial watermelon seed received from the Department, March, 1869, was planted for trial. The melons are excellent. They were of medium size, round, light green, and with a very thin rind; flesh red, fine grained, and very sweet; seeds small and red, with black eyes. A few of the melons differed from the above description by being larger and of a dark green color. The Goodwin's Imperial is certainly the best watermelon I ever tasted. The only objections to it are that it is not quite so early as some others, the Mountain Sweet, for instance, and for show in market it is rather small. The Early Bassano beet, the New Pine-apple beet, and the Dwarf Deep Blood Red beet, received from the Department last March, were planted April 17. The New Pine-apple is the best of the three.

Seeds of the following varieties of turnips were received from the Department last June: 1. Dicken's Yellow Stone; 2, Dicken's White Stone; 3. Dicken's Green-top Yellow; 4. Dicken's Mammoth Red Globe; 5. Dicken's Hardy Green Round; 6. Dicken's Defiance Purple-top Swede; 7. Dicken's Purple-top Yellow; 8. Pomeranian White Globe. They were planted on the 6th of August, side by side, and the same time with the Purple-top Strap-leaf turnip, which variety we had grown before and knew to be good. They were all harvested on the 29th of October. The Purple-top Strap-leaf did first rate, but none of the others made a very good stand. There were, however, some very good-sized specimens of each of the other varieties, except the Defiance Purple-top Swede, which was an entire failure. No. 4 were mostly small; so also Nos. 7 and 8. Nos. 1, 2, 3, and 5 were very good in size and quality and handsome in appearance. Nos. 1 and 3 were very much alike, the former being perhaps the harder and the latter the sweeter of the two. Nos. 2 and 5 seem to be the best of the whole lot. What strikes me as most remarkable is that each variety is apparently so true

to name. The seed seems to have been unusually pure for turnip seed. Perhaps the most important result of this experiment is to beget confidence in the source from which the seeds were obtained.

Yellow Springs, Ohio.—Last season I received from the Department five small papers of sorghum seed. It was planted in tolerably rich clay land, and well worked. The stalks were large and smooth, and generally well headed. It yielded No. 1 molasses, very clear and sweet, at the rate of two hundred gallons per acre. The yield might have been greater had the growth not been impeded by drought. I have saved five bushels of pure seed.

Erie County, Ohio.—From the one quart of Tappahannock wheat received from the Department three years ago, I have now on hand one hundred and fifty-six bushels of most splendid wheat, raised from six bushels sown last fall. I believe this wheat will prove to be just the thing for this section. It does not lodge, and it ripens early. The Brewer's Delight barley does not do for this section. Two years' trial shows that it lodges and rusts.

Bay County, Michigan.—The Tappahannock wheat sent me last fall was sown on the 6th of October, and in the spring it bid fair for a good crop, but as soon as it headed out it was attacked with the rust and midge, and so much injured that it was hardly worth threshing. The Arnautka spring wheat did well, and is the best spring wheat I have ever seen. The White Schonen oats did remarkably well; the straw was very stiff, the heads large, and the oats weigh forty-six pounds to the bushel. The Black Swedish oats did not do well. The Boston Marrow squash, Tilden tomato, and Early Yellow beans, were excellent. Carter's Leviathan peas, and the Imperial Wonder peas, yielded ten-fold, fine flavored. The Lenormand Short-stemmed cauliflower is the best I ever saw.

Pierce County, Wisconsin.—Eight pounds of Arnautka spring wheat, sown April 26, threshed September 20, produced thirty-one pounds of excellent berry. Black Swedish oats cannot recommend on account of color.

Rock County, Wisconsin.—From the ten pounds of the Arnautka wheat received from the Department I have threshed out nearly four bushels of seed fit for re-sowing.

Canton, Lewis County, Missouri.—I send you a report of seeds experimented with the past season. The oats and barley were sowed thinly in one corner of my oat field broadcast, April 6. The Saxonian barley was not more than a foot high, and so much poorer than the Probstier growing near by, that I only saved the latter. Of oats I saved three pecks Early Surprise, that I raised the year before from one quart of seed, which yielded nine and a half bushels, weighing thirty-two pounds per bushel. These were about three days earlier than our common black oats, and about a foot higher, averaging five and one-fourth feet in height, but yielding no better and weighing just the same per bushel. The Schonen, one pint, yielded eight and a half, measuring eleven quarts, which would be twenty-four and a half pounds per bushel; they were taller than any other, and about a week later than the Surprise. Black Swedish, one quart, yielded eighteen pounds, measuring twenty quarts, which is twenty-eight pounds per bushel; they are very late, a week later than any others, but they may be earlier as they become acclimated. The yield for these varieties was as follows: Early Surprise oats, from one pound, fourteen and a half pounds; Schonen oats, from one pound, eight and a half pounds; Black Swedish oats, from one pound, nine pounds. Narraganset sweet corn, very early, but

small; Asylum sweet corn, large and good. Egg-plant did not succeed, the season being too cold. Purple Vienna Kohl-Rabi, not very good, too long and slender. Large Early York, Matchless, and Superfine Early cabbage, small and early; could hardly be told apart except for the labels, though I think the Matchless the best. Brunswick Short-stemmed, Schweinfurt Quintal, Large Lake Bergen, American Drumhead, Red Dutch, and Lenormand's cauliflower, were all planted the same day, and transplanted the first week in June. Of these varieties the Brunswick nearly all formed solid good-sized heads; the Schweinfurt Quintal, large and loose heads, very tender and fine flavored; none of the other kinds headed at all. I have planted the Red Dutch cabbage several times, but never could raise a head. Of about one hundred cauliflowers set out, I raised two small heads. I never could succeed in growing them in this climate; they will not head, no matter how I treat them. The Mangel-wurzel and the white French sugar beet promised to be first-rate until taken by the potato bugs. Student parsnips were nice but small. Of tomatoes, the Tilden was much the best; Feejee, very late and much wrinkled. French Breakfast radish, very tender and nice, but soon became pithy. Peas were all planted May 6th; the earliest were Carter's First Crop, five days earlier than the Philadelphia Extra; the Eugenia were the best flavored, and the Peabody the poorest eating; the Advancer—all the crop can be picked at the same time—very fine flavored; the Surprise and Leviathan yielded heavy crops of very large peas. The past season has been very favorable for peas; I never saw them yield heavier nor last longer. The turnips were sowed in a carefully prepared piece of new ground, and came up finely, but were all eaten by the turnip fly.

Marion County, Iowa.—The nine pounds of Arnautka wheat received was sown on the 10th day of April, on newly turned sod ground, threshed out one hundred and sixty pounds of No. 1 wheat, weighing sixty pounds per bushel. On account of our extreme wet season, the barley and oats were a failure. The garden seeds were good, especially the Early tomatoes; the Dwarf Blood beet, Scarlet carrot, Yellow Danvers onion, Premium Dutch cabbage, and Winter Drumhead cabbage, all yielded largely.

Esmeralda County, Nev.—The Probstier barley produced one hundred. The product is better than the seed planted; both are two-rowed and superior to any variety of barley here. The White Schonen oats and the Black Swedish oats are both superior to any oats we have had here, by three fold. The White oats are rather the best, with a large, strong straw, not liable to fall down or lodge. The Cream-colored beans are of superior quality, ripening much earlier than any other variety here; the yield is very large and they are considered a valuable acquisition.

Los Angeles County, Cal.—Planted Crosby's New Sweet corn, April 10; it was well filled out in eight weeks and ready for use—a fine variety, exceedingly early and very sweet. Newcomb's Sugar corn, planted same time, matured about two weeks later, very large well-filled ears—an excellent variety. Carter's Warden Orange Globe Mangel-wurzel beet, and Demar's Eine Dark beet, planted at the same time, have made rapid growth; many of them now measure eight inches in diameter, and they are still growing. Student's parsnip, and Scarlet carrot, have each made a vigorous growth, and appear to be excellent varieties. Phinney's Early watermelon has done remarkably well, attaining a large size, and being of most delicious flavor; in fact, I may say I have found none to equal it, even here, where the melon

grows to perfection, and where the varieties are very numerous. All other seeds came too late in the season for a fair test.

Riley County, Kansas.—Saxonian barley, sowed in drills, thirteen inches apart, March 29, putting the grains about one and a half inches apart in the drill. When it came up and commenced stooling I found that I had at least twice too much seed for the ground. I never saw anything stool so much, nor grow so well, till it commenced filling; then it lodged badly, and I despaired of saving any at all; however, I got about a peck, and shall give it another trial next season. I think barley is going to be one of the best paying crops, and believe the Saxonian will do well with us.

Tripoli onion, sowed March 27, in drills, sixteen inches apart, grew very large, several measuring fifteen inches in circumference when pulled; not superior to Yellow Danvers in quality, but they grew somewhat larger. Vilmorin's Sugar beet, sowed April 21 and May 12. Good size, rather rough, but of excellent flavor. Dwarf White celery did not grow at all. Early White Flat Dutch turnip grew to good size, but very strong. Madeira lettuce, very fine and tender. Drumhead Savory cabbage, sowed in seed bed, April 5; medium size and fair quality, but not superior to Improved American Savoy, nor near so profitable as the Marblehead Mammoth Drumhead. Schweinfurt Quintal cabbage is an excellent variety; the heads were very large and tender, some of them weighing twenty pounds. Valentine beans, sowed May 6, did well and proved to be a very fine variety. Long Green okra, very tender when young. Dwarf Deep Blood beet, very difficult to grow, being tender, of slow growth; few grew large enough for the table, and were stringy; a few seeds of another kind grew in the bed, some of the heads from which weighed fourteen pounds. Student parsnip, very large, and of good quality. James's Scarlet carrot, large and of excellent quality.

Osage County, Kansas.—The Tappahannock wheat was frozen out by severe wet winter. Probstier and White Saxonian barley, together with Black Swedish, and White Schonen oats, all did remarkably well, but were mostly all rotted by constant rains before harvest. The Arnautka wheat came too late for a fair trial. It grew and headed out splendidly, but nearly all blighted.

The Large Madeira, Weathersfield, Yellow Danvers, and Tripoli onions, did wonderfully, some of the specimens weighing nineteen ounces each, and measuring fourteen and three-fourths inches in circumference; but they seemed disposed to grow and not keep well. The White Lisbon and Early Nocera grew small and separated into cloves like garlic. The English Dwarf beet proved entirely worthless, as did also the Flat Dutch turnip, while I raised on the same ground from other seed, variety not known to me, turnips weighing from four to five pounds each. Carter's First Crop peas were very fine. The Mammoth Sweet corn did well, while the Asylum, Brill's Extra Early, and Stowell's Evergreen did only middling. The Drumhead Savoy cabbage was an entire failure. The Quintal and York cabbage did well; also the Purple Kohl-Rabbi. The Large White lettuce is far inferior to the White Cabbage lettuce.

Dixon County, Neb.—The Arnautka spring wheat did remarkably well in this neighborhood, turning out at the rate of thirty bushels to the acre. The grain is considerably larger than the other varieties, and ripens from four to six days earlier, even when sown later. Its introduction into this county will be attended with good and profitable results. The fall wheat mostly froze out, owing principally to late sowing.

FRUITS IN IOWA.

Knoxville, Marion County, Iowa.—Many of our fruits were injured by the wet season; but it brought with it its lessons, for while some varieties of apples, for instance, were utterly worthless, a few kinds were never finer. Red Juneating, White Winter Pearmain, White Bellflower, Rome Beauty, and Fall Wine, were so scabby as to be almost worthless; while Williams's Favorite, Cole's Quince, Red Astrachan, Monmouth Pippin, Roman Stem, Winesap, Talman Sweet, Jonathan, Mother and Miller apples, were never finer; thus plainly indicating the different effects of extremely wet weather upon different varieties of this fruit.

Upon grapes, the deleterious influences of the excessive rains were still more apparent and fatal. Out of about seventy-five varieties of grapes which fruited with me the past season, not more than eight or nine varieties escaped uninjured, (and even those kinds not affected otherwise injuriously, were from ten days to two weeks later than usual in ripening,) while eight-tenths of the remainder were a total failure, by reason of the leaf-blight, mildew, and scab. Those not affected with any disease, or in the least injured, except as above stated, were Christine, (the best early grape I have,) Rogers Hybrids, Nos. 1, 13, (as I obtained it,) 34, 39, 41, 43, and 44, Union Village, and Isabella. These kinds fruited this year. Then I had a few kinds which have not yet fruited in my grounds, the vines and leaves of which are entirely healthy. These were Martha, Salem, Ives, Florence, Una, and Cottage.

While I shall remember the experience of the season, I would by no means discard all grapes which failed or were seriously injured this year. Many such have never previously shown any signs of disease. Among these were Concord, (partial failure,) Hartford, (total,) Delaware, (total,) Diana, (total,) Rogers Hybrids, Nos. 3, 4, 9, 19, 37, and 42, and many others, more or less injured, which I would still retain in my list.

Pears did better with me than usual. I had no blight and a very fair crop, all on quince stock. I commenced a year ago, and am experimenting quite extensively with pears on various stocks, such as *Lorbus*, (Mountain Ash.) Among those on which many kinds of the pear seem to grow very freely are *Aucuperia* Americana and *Quercifolia*. I am also using different varieties of the *Crataegus* (thorn,) and the *Lorbus, do. Mestica*, (service or June berry.)

FRUITS IN UTAH.

St. George, Utah.—The present year has been very unpropitious for grapes, and we have had only about one-half the quantity anticipated, though more than the crop of last year. Many have been injured by the spittle-bug, the mildew, and the myraids of small white flies which have appeared, sucking from the leaf the nourishment belonging to the fruit. Another reason was the failure of our usual July showers that wash and moisten the leaves. The White Chasselas in my garden was ripe the first week in July; and the Old Mission, the Isabella, and other varieties, are still abundant in some vineyards. Of the hundred varieties of foreign grapes we have imported and have growing, the White Muscat of Alexandria, the Bowood Muscat, and the White Malaga seem almost identical; the fruit is large, sweet, pulpy, and luscious, and when properly ripened and cured, make a large and most excellent raisin, and, so far as we can judge, are superior to any we have tested for raisins. For wine, we have fruited none superior to the Mus-

cat Hamburg, the Black Hamburg, and the Old Mission, (Los Angeles.) The Isabella is much grown here, and makes a rough keeping wine superior to that produced from it in its own climate and soil. After fruiting and making many experiments with American grapes, I feel fully warranted in saying that we need none here but the finest and best of foreign grapes.

Apples, peaches, plums, figs, and especially pears, have done splendidly, giving altogether a long fruit season. We had ripe peaches in June. The pomegranate is really a lovely fruit to look upon, and not bad to eat. They have been quite common this season, and may still be seen the highest adornment of the garden. The raspberry, the gooseberry, and the strawberry do well here, but the blackberry and the currant seem to require cooler climate. Sweet potatoes have been very prolific and of large size this year; and the experiments with Chinese upland rice and the peanut have been satisfactory and very encouraging. The Tappahannock wheat is in high favor as an early-ripening variety, and one requiring the least water.

MELONS AND FRUITS IN CALIFORNIA.

A correspondent, writing from Chico, California, in reporting his success with seeds sent from this Department, states that "several varieties of the cantaloup seed produced melons which the world cannot surpass, the 'Japan White cantaloupe,' the 'Cassaba cantaloupe,' and the Phinney's Early watermelon, being particularly fine. The 'Cassaba' (imported from Smyrna) produced the finest melons ever grown on this continent, being as far superior to the choice Hunter melon as the latter is to the common muskmelon. The whole appropriation made by Congress for your Department is repaid by the introduction of this one excellent variety of melon." In reference to the shipping of California fruits to eastern markets, he adds:

Without a railroad our choicest fruits command one and a half to three cents per pound, while with a railroad we could obtain six to twelve cents per pound. The railroad will soon be completed to Chico. Shipping fruit East has been a failure thus far. This result is owing entirely to want of knowledge on the subject. Most of the fruit shipped has been picked while *green*, and being poorly packed, has been lost before it reached the eastern markets. There can be no question that our apricots, cherries, pomegranates, pears, and grapes can be laid in New York in good condition and command high prices, but the science of picking and packing must first be understood.

FRUIT SHIPMENTS FROM VINELAND, NEW JERSEY.

Vineland, N. J.—The following, obtained from the railroad shipping books, shows the amounts of the shipments of the principal products of Vineland during the past season:

Strawberries, quarts	209,844
Raspberries, quarts	39,622
Blackberries, quarts	32,353
Peaches, packages	7,904
Melons, pounds	629,470
Grapes, pounds	254,203
Sweet potatoes, barrels	5,678

SURPLUS PRODUCTS OF IOWA.

Dr. J. M. Shaffer, secretary of State Agricultural Society of Iowa, furnishes the following statement of surplus agricultural products shipped from that State by the several railroads (not including ship-

ments eastward from McGregor and Dubuque) during the year ending April 30, 1869:

Wheat, bushels	9,296,648
Corn, bushels	2,210,603
Other grains, pounds	35,476,854
Other grains, bushels	1,808,047
Other agricultural products, pounds	27,608,767
Flour and other agricultural products, pounds	324,753
Wool, pounds	2,866,196
Horses	1,628
Cattle	80,287
Hogs	412,357
Sheep	52,733
Dressed hogs, pounds	13,418,776
Lard and pork, pounds	7,582,579
Animal products not otherwise specified, pounds	10,983,101

"Other agricultural products" include flour, potatoes, and beans; and "Animal products not otherwise specified" include eggs, butter, tallow, and hides.

CROPS IN HOLT COUNTY, MISSOURI.

Holt County, Mo.—The present year, despite the ravages of the grasshoppers in the spring and early part of the summer, and the extraordinary fall of rain, has been one of unusual prosperity to this county. Many new citizens have been added to the population, towns have sprung up, as if by magic, and thousands of acres of land have been fenced, and brought into cultivation. The staple products of the county have increased in many instances more than one hundred per cent. Fully 1,000,000 bushels of good corn have been produced, the average price of which will not be less than forty cents per bushel. The product of wheat, rye, oats and barley, although injured to some extent by grasshoppers, will not fall short of 200,000 bushels. The crop of apples for the year is estimated to exceed 50,000 bushels. Fifteen years ago, the product was less than 2,500 bushels—very little more than is now produced by the town of Oregon alone. The number of bushels of pears will exceed 2,000, the average price of which will be at least $3 50 per bushel. Of other fruits, including grapes, cherries, plums, &c., our farmers and gardeners have produced large quantities of the very best quality. The clip of wool is estimated to reach 30,000 pounds annually, a considerable portion of which is manufactured in the county. At the close of the season, not less than 30,000 head of hogs will have been marketed, netting an average per head of at least $16, making an aggregate of $480,000. Add to this the cattle, sheep, mules and other stock sold during the year, and we have a total of sales of live stock for the year 1869, largely exceeding a half million dollars. To this may be added the surplus fruit, grain, fire-wood, saw-logs, &c., and we find that our sales for the year are more than a million dollars.

CROPS IN HANCOCK COUNTY, ILLINOIS.

Hancock County, Ill.—Hancock County had returned on the assessment rolls for the year 1869:

Wheat in cultivation, 38,662 acres; corn, 99,242 acres; other products, 45,548 acres. Total, 183,452 acres. Wheat, estimating fifteen bushels

average, 579,930 bushels; corn, estimating eighteen bushels per acre, 1,786,356 bushels. In respect to corn, the great staple product, if we take half the acreage returned for 1869, to wit, 49,621 acres, at thirty bushels per acre, we have for total yield 1,488,630 bushels, which will be as near an approximation to the actual product as can be estimated. Many hundreds of acres of corn are not worth cutting up for the fodder.

TOBACCO CROP IN INDIANA.

Evansville, Ind.—The largest crop of tobacco, and perhaps the best ever sent to market here, will be shipped to this point this season. The crop sent last year was about 12,000 hogsheads, of which 3,856 were sold here at public sale at good prices. The shipments to be made this season will increase the amount fully one-half, as estimated by the dealers, and with the additional ground used in planting, within fifty miles of this place, which is the best section in the West for tobacco, the crop is annually increasing. The tobacco shipped here is principally from the Green River, the Tennessee, and the Cumberland.

IMPROVEMENT OF STOCK IN KANSAS.

Riley County, Kansas.—Our farmers have just commenced to pay some attention to improving their stock. Last fall I purchased a thorough-bred short-horn bull calf, which is so much larger and finer for his age than our natives that my neighbors can see it, and don't propose to be behind in good stock. Four of my nearest neighbors have just sent for one each, of full-blooded Durhams. Some sent to Chester County, Pennsylvania, and others to Illinois. There is nothing that needs improving more than our native cattle.

DISEASES AMONG STOCK.

Knox County, Tenn.—Hog cholera, that fatal malady, still prevails. I cured one bad case by giving calomel, forty grains, and afterward magnesia. Mine were bound up in the bowels without any operation; this is very common. The hog pants as with summer heat, lingers two to four days, turning almost purple as to color of the skin, and dies. No disease among other stock. Chickens are nearly all dying with what is called cholera.

Cherokee County, N. C.—A disease known as black tongue prevails among cattle and deer in this county. Few cattle have died in proportion to the number of cases; but it appears to be fatal to the deer—they are found dead in the woods and on the plantations When attacked they seem to make for the farms.

Greene County, N. C.—Hog cholera is prevalent in this county. One farmer has lost one-half his stock; several others have lost one-third or one-fourth their number. No remedy.

Union County, S. C.—Hogs are still dying from some disease, probably cholera. I have used a little tar, sulphur, and copperas, and have lost none. A neighbor in an infected district has been giving a little arsenic once a week to some young hogs, and they keep well and thrifty.

DeKalb County, Ill.—In many parts of the county hogs are diseased and dying. The lungs after death have a dark appearance; in some instances traces of inflammatory action are manifest. The first indication of disease is wheezing and apparent difficulty in breathing.

STOCK IN BOONE COUNTY, ILLINOIS.

Boone County, Ill.—The assessor's returns for 1869 for this county report 6,465 horses, 98 mules, 14,882 cattle, 5,679 hogs, and 24,008 sheep; showing an increase over the preceding year of 372 horses, and 2,091 cattle, and a decrease of 2 mules, 1,512 hogs, and 4,093 sheep. Fine-wooled sheep are decreasing, and middle and coarse wools are increasing.

ADVANCE ON LANDS IN ALABAMA.

Greene County, Ala.—Lands have risen fifty per cent. in this section within the past six months, owing to projected railroads. Our cotton planters are rapidly becoming solvent, and the general prospect is encouraging. Northern emigration is desired, and every facility will be extended to settlers. Lands are cheap, good crops may be made, and high prices realized for products.

THE SOUTHERN FAIRS.

In most of the southern States agricultural organizations have held exhibitions this year, for the first time since 1860. At those of Virginia, North Carolina, and Georgia, the Department of Agriculture was represented. Aid in organizing these useful associations, and in stimulating agricultural inquiry and improvement, has been cheerfully and zealously accorded, and their first public exhibitions were deemed worthy of special notice, not only as an indication of official interest in the work, but as a means of learning the actual status of practical agriculture in that section, and of understanding more fully its immediate wants and unrealized capabilities.

These exhibitions were interesting, not so much for the intrinsic excellence of the products and animals exhibited, or for the extent and variety of the entries, as for the indication that a new era is dawning, that many of the old things of agriculture are passing away, and that all things industrial must be undertaken with new energy and a progressive spirit. These fairs gave evidence of an awakening activity in mechanical invention, of a coming popular conviction of the importance of improvement in farm stock, and of the necessity for a wider range of production, superior culture, richer soil, and a higher order of farming generally. It is true that this conviction is by no means general; and it is certain that enlightened views must obtain slowly and encounter many rebuffs, as they have heretofore, and do now, in other sections of the country. It must be admitted that lack of knowledge, want of system, and the existence of narrow views and prejudices, are serious hindrances among the masses of farmers of our whole country, to true and rapid progress of agricultural and national development.

The Virginia exhibition, at which this department was represented by the Commissioner, the superintendent of gardens and grounds, and the chemist, was more complete in matter and management than the others; its entries of improved stock and agricultural implements attested a growing tendency to appreciate and improve the rare pastoral capabilities of Virginia, and to initiate a more rational sytem of culture; its show of minerals prognosticated the wealth of mining and manufac-

turing which will at some time enrich the State; and its fruits, cereals, and garden products, illustrated the wide range of soil and climate between the sands of the eastern coast and the peaks of the Alleghanies.

The North Carolina fair was attended by the superintendent of the garden and the statistician. Unpropitious weather greatly interfered with its success, yet a creditable effort was made; an interest was awakened in competition, not merely for the distinction or advantage of an award, but as a contribution to the general good; a decided tendency toward the improvement and the enlarged use of agricultural machinery was evinced; and a determination was manifested to make the "Old North State," which produces naturally all forms of vegetation, from the semi-tropical to the Alpine, a storehouse of nearly all the productions natural to any portion of North America. The meetings of the State society were replete with zeal, interest, and activity, and its reports, essays, and transactions should be made a matter of public record and distribution.

The Georgia exhibition was remarkable for the number and character of its visitors, and for the extent of country and variety of interests which they represented. Its material characteristics were in some sense similar to those of the fairs above mentioned, with a larger variety of contributions from other States, and an indication of a more decided and absorbing centralization of cotton-growing. Interest in this important culture is natural and proper, but the comparative neglect of other industries of the farm is greatly to be deprecated, as prejudicial to the true interests of agriculture and *to the ultimate success of cotton-growing itself.*

The following address, delivered by the Commissioner of Agriculture, during the Georgia exhibition, presents the salient points to be considered in the present status of agricultural reconstruction, under the free labor system and the diversification of industry which is not only permitted but absolutely impelled by the destruction of the former system and the natural capabilities of this section:

It is with pleasure that I have responded to your kind invitation, which I have accepted in the spirit in which it was tendered—a spirit of mutual concession, sympathy, and encouragement. This pleasure is enhanced by a knowledge of the great resources of your State—a soil rich in all the elements of fertility, and suited in its variety to the entire circle of the productions of the farm, orchard, and garden; phosphates and marls, in many localities, to repair the waste of continued cropping, and minerals useful in the arts; water power enough to manufacture all the cotton grown in the State, and the implements of agriculture and of other industries; and a climate in which the cereals and fruits of temperate zones may flourish side by side with semi-tropical forms of vegetation, and in which man may exercise, in highest health and vigor, all his mental and physical energies in subduing nature, enlarging production, increasing wealth, and enhancing human happiness.

With such resources at your command, with active invention to plan, and an indomitable will to work, who can set a limit to the career of activity and enterprise upon which you have entered? I have come among you with some knowledge of these natural advantages, and with a full appreciation of the laudable ambition that impels you, to speak a word of encouragement, to present the allurements of new hopes and new aims, and ask that, extirpating ancient prejudices, forgetting the things which are behind, you press forward to those which are before, aiming to advance the united interest and brighten the consolidated glory of a great and growing nation.

The change in your labor system involves a radical change in the manner and appliances of cultivation, a necessity which many of you fully realize and thoroughly understand. Free labor, to be most efficient, must be educated labor—in a certain degree, skilled labor; it must be supported and supplemented by improved machinery, so that every dollar expended in the exercise of human muscles may become *two* by the magical augmentation of rural mechanism. It is thus that our lands must be cultivated and crops grown, in part by *brawn*, in part by *brains*.

This change in labor also involves the necessity for smaller farms, better culture, the use of manures, rotation in crops, and a larger *working capital* in proportion to permanent investments.

Broad acres of impoverished soil, without abundant means for needed fertilizers and fixtures, machinery, and farm animals are not only non-productive, but absolute sources of cost and discouragement—a mill-stone upon the neck of enterprise. Without a working capital at least equal to that invested in land, recuperation must be tedious, and the profits of farming small; with its aid in utilizing the labor at command, that which is more efficient and intelligent will naturally flow in.

The result will be a rapid development, a higher condition of fertility, larger crops, valuable and creditable improvements, good neighborhood, roads, larger profits, wealth, comfort, and contentment.

As a natural sequence to this system of industry, variety in production will take the place of an unceasing culture of cotton and corn. The broad capabilities of soil and climate will have free scope and exercise, and while the product of cotton will be greater than now, there will be corn enough for man and beast, an abundance of beef, pork, and mutton, the finest of vegetables, and rarest of fruits, not alone for home consumption, but for the supply of less favored regions. Sugar, in favoring soils, may take the place of cotton as an export crop; sorghum may yield its sweets for local use of dwellers among the hills; a multitude of new and profitable crops may swell by millions the grand aggregate of the cash receipts of agricultural labor. Ramie, introduced, in 1855, in the Botanic Garden at Washington, and propagated for years in the experimental garden of the Department of Agriculture, promises to vie with cotton in profit and usefulness, if the manufacturers succeed in improving and cheapening its fabrication, and thus create a great and permanent market for the new fiber, which can be produced in unlimited quantities at reasonable rates.

You have also an immeasurable source of wealth in the cultivation of fruits. Even that most valuable of all domestic fruits, the apple, can be produced here in the highest perfection. It is true that failures have resulted from introducing varieties of northern origin, but your pomologists have collected native varieties fully equal in flavor and keeping qualities to the best of those from any other section.

Merely mentioning the pear and the peach—the latter especially revelling in your bright and lengthened summers—allow me to direct your attention to the fig and grape. The former of these probably requires less skill in propagation and care in culture, or in drying or other preparation for market, than any other fruit of value.

The grape, more capricious as to climate and locality, can here enjoy its favorite region. On your hill-sides the best table and wine grapes of the northern States will attain perfection, and it is prophesied that only on the elevated lands and mountain slopes of the southern States will the region be found that is to yield wines equal to a Johannisberger, a Tokay, or a Margeaux; while in your lower lands you have the famous Scuppernong, that even now is highly esteemed, both here and in foreign countries. Vast developments await you in this direction; and when you reflect that even on your worn-out land, unfit for corn or cotton, fruits and vines may be produced in the greatest abundance and perfection, the propriety of giving attention to these crops will become apparent.

Nor will this measure of diversity suffice. Manufacturers must occupy the sites of water-powers, and the surplus forest products be used in propelling machinery by steam, thus beautifying your State and enriching your people, not only by the products and profits of this industry, but by the stimulus it will afford to agriculture in the consumption of its products and the enhancement of their values. I hope to see the day when, with the help of manufactures in other States of this country, we may be able to manufacture every pound of cotton that we can produce. You may in self-defense be compelled to do it, as Great Britain is already preparing to colonize India with the skilled laborers of Lancashire, as teachers and directors of the teeming millions whose services may be had for a remuneration scarcely appreciable. Ship abroad among the nations of the earth, at little cost for freights and commissions, all your cotton in yarns and fabrics, bearing the added value of much cunning labor, ready for the markets of the world, rather than depend upon the wants or the caprices of other nations for the sale of the raw material.

The small beginning of five and a half millions of pounds of cotton manufactured in this country in 1791, increasing to fifty millions in 1821, has augmented to four hundred and fifty millions in 1868—one million bales of four hundred and fifty pounds each—a consumption greater than that attained in 1860. It will continue to increase, and, with its swelling volume, change the whole current of trade, advancing our national wealth and prosperity.

We must not ignore the efforts of the British cotton commission to attain independence of foreign markets through their Indian empire. It is true that the fiber known as "Surats" sells at lower rates than our uplands, but it should be remembered that it is owing more to careless handling than to any defect in the staple itself, and that strenuous and systematic efforts are producing a cleaner and better fiber. If the "Dhers," with their clumsy machinery, have produced from this cotton—with careful manipulation of the fiber from the beginning—the finest thread known, measuring one hundred and fifty miles to the pound, and running to No. 200 in fineness, may not the teachings

and practice of skilled English laborers in India yet incite a sharper competition than we have heretofore encountered? Portions of India possess some of the most productive soil of the world, peculiarly adapted to the growth of cotton. Their production is indicated by the following statement. The annual consumption for the whole of Europe at present is about 3,800,000 bales—it has been greater—of which

	Bales.
America sends about	1,500,000
India sends about	1,400,000
Egypt sends about	250,000
Brazil sends about	500,000
Other countries send about	350,000
	4,000,000

as reported by the Indian commissioner. Yet I do not believe we are to lose the first rank as a cotton producing nation. Our opportunity lies in a better and more perfect cultivation of the soil, its thorough aeration, draining in heavy lands, and liberal manuring; a more complete adaptation of the implements of its culture to their peculiar work, the invention of labor-saving expedients and processes, and the reduction to a minimum of the costly use of human muscles; a regular rotation system of cropping, by which the soil may be constantly improving rather than continually "wearing out;" and finally, a proper manipulation of the fiber for market, by which uniformity of length, freedom from foreign admixture, and perfect cleanliness, may be secured. These are the points in which India cotton is deficient, and in which ours must continue to excel.

To secure a longer, finer, and evener staple is entirely practicable. It, however, can only be accomplished by observing the great laws of reproduction on which all improvement in animal and vegetable species is founded. The key to this progress exists in a single word—"pedigree."

Select a plant producing abundantly a superior fiber; plant its seed in a genial and well-cultivated soil; select again and again from its progeny the finest and the best, discarding all else, and few years will elapse ere marked results will prove the great utility and exceeding profit of the effort. In this connection I present the suggestion of an experimental farm, established by your State government, and conducted by an experienced and intelligent planter, where new varieties of cotton may be produced and foreign varieties tested. I would also commend to each individual planter the necessity of a constant regard to this principle of selection in the planting of every crop he may attempt to cultivate.

I desire also to call your attention to the importance of a system of co-operation among planters for the destruction of the cotton caterpillar when it first makes its appearance, either as a caterpillar or in its perfect state. While their numbers are few, any expense necessary for their extirpation would be a profitable outlay; when they swarm by millions in every field their presence is disheartening, and their destruction impossible.

Let these considerations be regarded, with intelligent labor and a personal supervision by the observant planter, and you may defy the competition of the world, produce a fiber unsurpassed, and realize a profit ample for any want and satisfying every requirement of luxury.

In such views of progress I personally feel a deep and untiring interest. To assist in forwarding them you may command my constant endeavors as Commissioner of Agriculture, and co-operation and aid so far as the limited means at command may permit. The magnitude of the interests involved, and the effective manner in which the Department may advance them, lead me to believe that larger appropriations by Congress will hereafter permit wider and deeper usefulness, and that while hundreds of millions are given to railroads, a mere moiety at least may be accorded to advance the progress of agriculture. This Department now consists of divisions of statistics, agricultural chemistry, botany, (to which is attached an herbarium,) natural history, and practical horticulture.

The first is the office of publication, from which are issued the annual report of nearly a quarter of a million of volumes, and a monthly report of 25,000 copies, embodying official data from thousands of correspondents and nearly every county in the Union.

In connection with a museum of natural history, as allied to agriculture, is an economic collection exhibiting the processes of manufacture of the raw products of agricultural industry, in which the textile arts, the making of sugars and dyes, and the utilization and extension of the primitive products of the earth are illustrated and described.

The experimental garden, to which has lately been added an arboretum, is a theater of active and intelligent effort, including the test and propagation of exotic fruits for

your own favored section, and the introduction of new and promising plants suited to every climate.

The chemical section of the Department is occupied with the examination of the natural sources of agricultural wealth in mineral deposits. The knowledge of the composition and food of plants is being increased by scientific investigation. A series of analysis of cereal grains is contemplated for the purpose of determining the amount of influence which the latitude, soil, and climate of different localities exert upon the growth of our food plants. A collection of specimens representing our agricultural and economic geology and mineralogy will afford a valuable display of the rock strata of the whole country, and serve to complete the efficiency of this division.

The library of the Department, though not extensive, is receiving large additions by purchase and exchange with numerous scientific and agricultural societies in Europe, Asia, Africa, and even the islands of the Pacific.

A system of exchange of seeds and plants is in operation, embracing societies, industrial colleges, and botanical gardens throughout the world. An extensive correspondence is conducted, embracing nearly the entire country, and the whole range of practical agriculture. All these parts of our organization are working harmoniously, and I hope in some degree effectively, and all are laboring for the advancement by equal steps of every section and every rural interest in our broad land; and in the coming general prosperity and universal progress I hope and pray your favored State may have its full and generous share.

RAMIE.

Messrs. Wade & Son, manufacturers, of Bradford, England, who forwarded the specimens of manufactured China grass to the museum of this department in 1865, write as follows relative to the status of the manufacture:

We have pleasure in acknowledging the receipt of your communication of the 25th August, and shall be glad to give you any information now, or at any time, on the question of ramie or China grass.

1st. The machinery employed in manufacturing China grass has been greatly improved during the last few years, but owing to the limited supply of raw material the manufacture of this fiber has not yet been very much extended.

2d. Respecting the prospect for future demand, it is our opinion that, with a large and regular supply of raw material at a moderate price, say about £45 to £50 per ton in Liverpool, this article would in the course of time be a staple fiber in English manufacturing, taking to some extent the place of cotton, wool, or silk (with both the latter articles, we may say, it can often be advantageously mixed.)

3d. The amount of grass imported into this country varies considerably. During the last twelve months little has come forward, and the market is entirely cleared; there is now a demand for it at £70 per ton, but no great quantity could be consumed at this price. During the past year we have had many inquiries from the United States (some of them of a very enthusiastic nature) regarding ramie, &c., to all of which we have replied by sending samples and giving the best *bona-fide* information in our power.

We may say that we consider your planters are injuring their interests by the manner in which they are getting up fiber. It is well known that China grass when cut and dried has an outer bark on it, which the Chinese remove by hand; now, as this would be impossible in the States, it must be taken off by machinery, and in this state exported to England.

The next process, probably the most important in the manufacture, that of discharging the gum, is one that has taken a great many years to develop, the manner in which it is done making the grass either valuable or almost worthless. The object to be kept in view in discharging, is to retain the strength, elasticity, color, and luster of the grass, and the samples of ramie we have had sent from the States are all spoiled in discharging, being made tender, many of them almost rotten, a bad color, and entirely without luster; therefore we see no success in the exportation of ramie but in the rough state with simply the bark taken from it.

We are preparing, as requested, a small case of samples which will be ready in about six weeks, and shall be forwarded without delay.

C. F. Dennet, of Boulogne, France, writes concerning a new process for separating gum and gluten from the fiber, and for bleaching it without danger or injury from chemicals. He also says there is a new ma-

chine for spinning and twisting threads and yarns, of which the spindles are worked by conical friction, instead of bands and drums, running with small power and great speed, and twisting a uniform and perfect thread. He reports the scarcity of ramie fiber, referring to one mill fitted up expressly for the purpose of working China grass, which is unemployed for want of material, and gives the opinion of a lace manufacturer, that if ramie can be treated to retain its strength, softness, purity, and brilliancy of color, it will find a ready sale.

The *Petite Presse* of Paris, under date of July 31, of the present year, thus presents the history and utilization of *L'ortie de la Chine*, or white nettle of China:

In the Su Chuen there is a great commerce made in cloth called *hia-pon*, which is made from several varieties of nettle, but principally from *Urtica nivia*, a white nettle; this herbaceous plant, which flourishes in a damp soil, resembles greatly our hemp, and gives a brilliant whiteness, and is of great strength; they use it to make summer clothes, bed curtains, handkerchiefs, sacks for grain and ropes. There is no textile material in existence to be compared with the white nettle (*L'ortie blanche*) or China grass, as the Americans call it, for the fineness and firmness of its fibers and their strength. It has been imported into France, where it has become perfectly acclimatized through the pains taken by Father Voisin, missionary of China, who was the first to understand its importance, which is so great that the Society of Acclimatization gives a prize for these fibers. Those who occupy themselves with this matter have only to take the Chinese for models to know how to draw from the nettle tissues as fine as cambric. But the Chinese have nothing to teach as to twisting; they have remained stationary, and are still pursuing the same old system, perhaps dating from the dynasty Tchang or Tcheon.

The seeds are small and easily transplanted. The method of preparing this plant is very simple. As soon as it is cut down, it is passed through a crusher, to separate the fibers and pulverize a portion of the gummy matter, after which it is soaked in water to purge it from the residue of gum; then repassed into the crusher, and finally plunged into a bleaching bath, when, once a day, it is sent to the manufactory. Now that the utility of the plant is proved, why not introduce it into California, where the other varieties of orties grow abundantly in a wild state? The farmers exhaust their soil in growing one kind of grain, when they might give the soil rest by producing other products, which would prove more profitable. Cultivation of the nettle would bring them a certain return more uniform and advantageous, because they would gather three crops each season, and the influences of weather would not affect it. Acclimation of this plant would prove a new branch of industry in California.

Absurd statements, by interested and ignorant parties, touching the botany and practical value of this plant, are publicly made, and the public mind has been greatly mystified. As to the demand for the fiber, all depends upon its condition. It must be very small for worthless samples manipulated by some of the machines and processes employed. It may be very large if the fiber can be easily and perfectly separated from the wood and its own bark, at slight expense. The business of *propagating* plants has been very lucrative, but no one is known to have made a fortune by producing the fiber, nor will such a case be reported until inventive genius and mechanical or chemical skill has perfected its proper and *cheap* preparation. It would be well to extend its *culture* slowly, till this result is more nearly attained than at present. The Department of Agriculture has investigated this subject carefully, has disseminated seeds and plants, and encouraged the experiment of its culture, and would stimulate invention and effort to a successful issue, and at the same time shield the unsuspecting from losses through the greed of gain.

STATISTICS OF THE COTTON MANUFACTURE.

At the annual meeting of the Cotton Manufacturers' Association, held in New York, June 30, 1869, the Statistical Report embraced returns from seven hundred and ninety-four cotton-mills, having over ninety-nine per cent. of all the spinning machinery in the country. The details and results of the statistics thus obtained appear in the published proceedings of that meeting. We here repeat the statement then made of the home consumption of cotton, North and South, for the year 1867–'68, and have, for the greater facility of comparison, changed the quantities from pounds to bales of four hundred and sixty-six pounds each, that being the actual average, as shown by the table of weights appended to this report:

Consumption of cotton for the year ending August 31, 1868.

	Mills.	Spindles.	Bales of cotton used for spinning.
NORTHERN MILLS.			
Mills returned	693	6, 452, 974	855, 007
Mills estimated	43	50, 000	6, 833
	736	6, 502, 974	861, 840
SOUTHERN MILLS.			
Mills returned	101	247, 583	76, 955
Mills estimated	7	13, 000	4, 430
	108	260. 583	81, 385
USED IN MILLS OTHERWISE THAN FOR SPINNING.			
Quantity returned			24, 165
Quantity estimated			30, 043
Total	844	6, 763, 557	54, 208
Aggregate			997, 433
Deduct for exceptional cases in which the quantity reported was the consuming capacity, and not the actual consumption			31, 767
Actual home consumption, North and South, 1867–'68			965, 666

Synopsis of new returns to October 1, 1869.

State.	Mills.	Spindles.	Yarn.	Cotton spun.	Average per spindle.	Otherwise used.
Maine	19	490, 424	23⅜	25, 090, 047	51. 20	.....
New Hampshire	43	745, 930	26	39, 394, 541	52. 81	680, 431
Vermont	11	22, 168	30½	1, 071, 867	48. 73	112, 534
Massachusetts	143	2, 366, 025	28⅞	124, 298, 128	52. 54	168, 674
Rhode Island	89	906, 681	33⅜	36, 593, 689	40. 39	375, 000
Connecticut	73	514, 549	30	25, 559, 591	49. 67	267, 820
New York	43	439, 911	32½	18, 791, 162	42. 71	749, 500
New Jersey	17	136, 002	36¼	5, 328, 718	39. 18	.....
Pennsylvania	50	271, 946	19	18, 725, 056	68. 85	457, 909
Delaware	7	35, 108	20⅞	1, 986, 886	56. 60	.....
Maryland	8	33, 802	12⅞	4, 994, 237	147. 75	.....
Ohio	3	13, 270	10¾	1, 648, 608	124. 24	100, 000
Indiana	1	10, 800	14	1, 447, 908	134. 07	.....
Illinois	2	460	27	27, 882	60. 61	126, 500
Missouri	3	12, 064	11½	1, 793, 644	148. 68	.....
North	512	5, 999, 140	28½	306, 751, 964	51. 13	3, 038, 368
Virginia	7	27, 148	14½	2, 263, 168	83. 80	.....
North Carolina	15	20, 743	12⅝	2, 486, 741	120. 13	.....
South Carolina	5	29, 084	12⅛	3, 582, 595	123. 54	.....
Georgia	26	73, 556	12¼	9, 909, 947	133. 92	.....
Alabama	8	27, 364	15½	2, 460, 738	89. 94	.....
Mississippi	3	3, 332	8⅜	242, 000	72. 63	.....
Texas	2	1, 716	9⅜	209, 300	121. 97	.....
Arkansas	1	516	10	95, 363	184. 81	.....
Tennessee	7	9, 800	11⅛	735, 071	75.	.....
Kentucky	2	4, 500	9	788, 795	175. 29	.....
South	76	197, 759	12¾	22, 773, 718	115. 02	.....

RECAPITULATION.

North	512	5, 999, 140	28½	306, 751, 964	51. 13	3, 038, 368
South	76	197, 759	12¾	22, 773, 718	115. 02	.....
Total	588	6, 196, 899	28	329, 525, 682	53. 17	3, 038, 368

The mills embraced in last year's report that have not now reported were generally of small capacity, having in the aggregate only 678,689 spindles.

The returns from five hundred and eighty-one mills last year and this year compare as follows:

	Pounds.
Five hundred and six northern mills, which for 1867–'68 reported 5,827,947 spindles, consuming	331,559,311
Report for 1868–'69, 5,977,684 spindles, consuming	305,484,085
Showing a falling off of 7.86 per cent., or	26,075,226
Seventy-five southern mills, which for 1867–'68 reported 195,921 spindles, consuming	27,390,108
Report for 1868–'69, 195,659 spindles, consuming	22,678,718
Showing a falling off of 17.20 per cent., or	4,711,390
Together, 581 mills, which in 1867–'68 reported 6,023,868 spindles, consuming	358,949,419
Report for 1868–'69, 6,173,343 spindles, consuming	328,162,803
Showing a falling off of 8.57 per cent., or	30,786,616

These 581 mills reported for 1867–'68, as cotton used otherwise than for spinning	4,705,600
And report for 1868–'69	2,761,876
Showing a falling off of 41.30 per cent., or	1,943,124

It is fair to assume that a ratio afforded by returns from ninety per cent. of the spindles reporting last year, and eighty-nine per cent. of all in the United States, taken as they come, will be a just and true ratio for the whole manufacturing power in the comparison of the last and the preceding years' work. It is therefore applied to all the mills reported and unreported in the following statement of the home consumption in the mills, North and South, for the year 1868–'69, reckoned as last year, in bales of 466 pounds each:

	Mills.	Spindles.	Bales used for spinning.
North	736	6,670,346	767,512
South	108	260,000	64,998
Used in mills, but not for spinning			31,744
Totals, (1868–'69)	844	6,930,346	864,254
Against, (1867–'68)	844	6,763,557	965,666
Showing a reduction in northern mills for spinning			65,448
Showing a reduction in southern mills for spinning			13,500
Showing a reduction in cotton otherwise used			22,464
Total			101,412

As the result of inquiries concerning the average weight of bales, it was found that in the returns from the northern mills a bale averaged $465\frac{3}{10}$ pounds; in invoices from southern markets, $466\frac{1}{2}$; in Liverpool, 465; in Boston invoices, $473\frac{1}{2}$. The following averages are obtained from local markets:

	Bales.	Average.	Pounds.
New Orleans and Texas	943,022	463	436,619,186
Mobile	230,726	497	114,670,822
Savannah	357,253	475	169,695,175
Memphis and vicinity	344,545	472	162,625,240
Charleston	198,943	440	87,534,920
Nashville, &c., (inland)	131,000	460	60,260,000
Virginia and North Carolina	65,420	425	27,803,500
Total	2,270,909	466.8	1,059,208,843

BEET-SUGAR MANUFACTURE.

Dr. G. W. Hulse, formerly a sugar planter in Louisiana, writes to the Department as follows in reference to the practicability of sugar production from the beet in Colorado:

Since my arrival in this Territory my attention has been attracted to the large, apparently sound, and perfect growth of the beet root of the country. Specimens of ten and fifteen pounds weight are no uncommon sight, and I have been told by reliable farmers that roots are occasionally found of even twenty pounds in weight. Both soil and climate seem well adapted to their perfection of growth, and in many localities they attain great size without irrigation, although this section of the Territory is already provided with irrigating ditches to a considerable extent. Many of the farmers say that the beet requires on the bottom lands little or no irrigation after being well started in growth.

Among those grown here I do not recognize any of the true white Silesian varieties nor any of those that are cultivated for sugar-making purposes in Europe. Still such as are grown here are generally very sweet and good flavored, when prepared in the ordinary way for table use. This induced me to make a trial to ascertain if any contained sugar equivalent to, and identical with, cane sugar, and from the short red turnip, (garden variety,) which I found very juicy, but exclusively loaded with coloring matter, I had no difficulty in obtaining true sugar, well-granulated rhomboidal crystals of good size and identical with cane sugar in every physical aspect, and I doubt not they would prove so under trial of the most perfect saccharometer.

With one hundred and twelve pounds of juice from a large white variety, (not the Silesian,) I obtained over twenty-five pounds heavy sirup, but did not succeed in obtaining good crystals, as the appliances for boiling the juice were ill-suited to the process of evaporation, and no lime was used (as none was at hand) for defecating or cleansing the juice.

Consider for one moment the advantages of such products for purposes of alcohol and potash, in addition to sugar products. The production of alcohol from the refuse of beet-sugar works, and from the inferior qualities of beet, would naturally interfere with the distillation of grain, as few could afford to cultivate grain for purposes of distillation in competition with beets.

The additional production of potash from the refuse of beet-sugar factories would be a new industry of great national importance. You are doubtless aware that there exist large establishments in France whose exclusive business is the product of alcohol and potash from the beet roots, and I have often wondered if much of our fine French brandy, as imported into this country, was not the product of the beet rather than of the grape.

Before our late unfortunate and desolating war I had long been engaged in cane culture and sugar making in the State of Louisiana, and had also improved opportunities of examining into the process of beet-sugar making as well as the processes of alcohol and potash making from beet roots in different places in Europe. I do not hesitate to say that I saw no place in France, Belgium, or Germany, where beet roots grew to such seeming perfection as they do in this Territory, nor do I know any portion of the United States (unless it be Oregon) where they will in any way compare with those found in Colorado.

When our soil is carefully examined in reference to its elementary constituents one is struck with the amount of its saline compounds, especially with its large amounts of potash and soda. Potash is the glory of beet-root food—where sugar is an organic compound or organic product, the result or phenomena of vital functions. A glance at those immense mountain barriers will explain the source of those inexhaustible supplies of potash and soda. Feldspathic (decomposing) rocks characterize much of the mountain upheaval on this side of the main range, consequently the waters incessantly descending from the sides are the grand transporting agents, heavily freighted with both of these substances, potash and soda, in some of their various forms, and perpetually renewing the supplies of food so congenial to the taste and growth of the beet root.

Farmers, as before remarked, have already done much in the way of constructing ditches for purposes of irrigation, and I believe no country on earth has advantages like this if a proper system of irrigation be adopted equal to its capabilities and requirements. The streams descending from the mountains of almost perpetual snow are numerous and may be conducted over a vast extent of rich upland soil. The expense of turning all the mountain streams from their natural beds and conducting them by ditches or canals over the main average hills of the plains will be a mere drop in the bucket compared to the expense of levees required for the protection of Louisiana and Mississippi. Vegetables, excellent in quality, will soon be so abundant that the supply will exceed the demand, and even wheat, though excellent in quality, will only bear transportation to an eastern market when railroads become more moderate in charges. But sugar, alcohol, and potash, may be produced almost beyond competition for the eastern or foreign market. I should not speak so confidently on these particular items had I not examined with some care all subjects necessary to their production. Fuel, of course, is an important matter, especially to a country that has no timber (wood) or forest growth. But for her immense forests Louisiana never could have engaged in cane-sugar production. The forests here have been wisely preserved; they are all safely stored in the earth and easily accessible. Coal is abundant in the country of the kind known as dry coal, a species of lignite, and of a superior quality—I believe I am safe in saying the best of the kind known on earth. I consider it as good if not better for generating steam and for evaporating purposes than even bituminous or anthracite coal. The formation is evidently extensive, and, though it has been subject to great disturbances and may in many places have been destroyed or moved away, enough has been discovered to prove that it still exists in great quantities.

I am firmly of the belief that beets may be produced here from twenty to twenty-

five tons per acre; some farmers of experience say fifty and some say even a hundred tons per acre. If such immense yields can be obtained anywhere on earth I believe it may be done here.

BEET-SUGAR MANUFACTURE IN ILLINOIS.

In a recent letter, in reference to the beet sugar enterprise commenced several years since at Chatsworth, Illinois, by the Gennert Brothers, Mr. M. L. Dunlap states that the operations of these gentlemen having come to a stand-still through want of capital, and more from want of practical knowledge of the business, Messrs. Bunn, Reynolds, and others took hold of the business with the purpose of redeeming the enterprise and to test thoroughly the practicability of making sugar from the beet in competition with the sugar-cane. They secured the services of William Wiferling, a native of Saxony, who has had twenty years' experience as a sugar maker in the best factories of Europe. He at once remodeled the works and successfully made up the crop of 1868, amounting to six hundred barrels of granulated sugar. The beets having been badly grown yielded only about four per cent. of pure sugar. This year one thousand two hundred acres were planted to beets, but the season was an unfortunate one for the experiment; the deluging rains sweeping away the plants and ruining the crop. Only two hundred and fifty tons of beets, or about the ordinary yield of twenty-five acres, were saved. Not discouraged by this failure, wholly due to an unpropitious season, the company is making preparations for further experiments. During the fall one thousand six hundred acres have been plowed; but whether the land will be planted to beets or to farm crops may depend somewhat on the results of certain new processes in separating the nitrates from the beet juice, now undergoing trial in some of the German factories. An excess of nitrates in the prairie soils of the West is complained of, and it is thought that, in the absence of these, it would be only necessary to wash the beets, reduce them to pulp, press out the juice, and boil it down to the point of crystallization. Mr. Wiferling is quite sanguine that this result will be reached. Thus far, however, the experiment has not resulted in establishing any practical facts, yet this failure has proved nothing against the enterprise. The beets are rich in sugar, but, as in all new soils, contain an excess of the nitrates. All that is needed to insure success is some cheap and certain mode of separating the nitrates; that obtained, the other difficulties will soon be overcome. At present the process is an expensive one, and requires great skill in the manipulation.

BEET-SUGAR MANUFACTURE IN WISCONSIN.

The enterprise at Fond du Lac, Wisconsin, appears to have been more successful. Mr. A. Otto, a practical German sugar maker, last year planted four acres of beets, near Fond du Lac, and fitted up cheap and simple apparatus for manufacturing. The crop turned out well and proved rich in saccharine matter, yielding a good quality of sugar. This year eighty acres were planted, and, notwithstanding the unfavorable season, the peculiar fitness of the soil secured a good crop of beets. More machinery was obtained, and the manufacture is now being successfully prosecuted; about one thousand pounds of a good quality coffee sugar being turned out every twenty-four hours, with improving results as the work progresses. The crop of beets is sufficient to occupy the works for at least four and a half months, which will give an aggre-

gate of one hundred and twenty-five thousand to one hundred and thirty-five thousand pounds of sugar. The process of manufacture is similar to that followed at Chatsworth, Illinois. The locality of Fond du Lac is said to embrace all the requisites to make the manufacture of sugar a prominent feature there.

SUGAR MANUFACTURE IN CALIFORNIA.

In California, the Sacramento Valley Company have established a complete sugar mill, though of small dimensions, and are now at work extracting sugar from one hundred and fifty tons of beets. Counting success certain, the company intend to enlarge their works for an extensive production in 1870. An experimental crop of Louisiana sugar-cane will also be planted on Twitchell Island, which has just been reclaimed. If the cane thrives a factory will be established on the island.

FISH CULTURE.

Mr. E. S. Woodford, of West Winstead, Connecticut, writes as follows upon this subject to the Commissioner of Agriculture:

My attention has been turned, for a number of years, to the subject of fish culture from the fact that there are more than one thousand ponds and small lakelets in New England, covering an area of over one hundred thousand acres, most of them nearly worthless now as food producers. Into almost all of these the voracious pickerel has been introduced, annihilating the trout, and, like the Kilkenny cats, their own species as far as possible, making no discrimination, in their sharkish propensities, between their own progeny and that of any other fish; and as the pickerel is only passable food in cold weather, the question for consideration is, what fish can be introduced into these thousand ponds that will make them productive of a large amount of delicious and wholesome food—for I believe that every acre of water is worth two acres of land if properly cultivated.

My experiments with the black bass during the past seven years have convinced me that it is the only good fish that can be propagated to any considerable extent where the pickerel abounds. I stocked the small lake (about three miles long) in this place, seven years since, with black bass, and had them protected by statute for four years, since which time immense numbers have been taken, varying in weight from half a pound to nearly five pounds. During the bass season (they only take the hook from May to September) it has been estimated that over one hundred pounds per day have been taken. Our commissioners on fisheries, aided by a liberal appropriation of the legislature of Connecticut, are doing all in their power to stock the ponds of our State, and make these waste waters produce, as they soon will, a large amount of wholesome food. Under their direction, I have stocked many of the ponds of this State with nearly two thousand black bass this season, beside taking them to Bangor and other places in Maine, for the commissioners of that State, and also to the little lakelets of the Catskill Mountain House, and many private ponds. Frank Forrester says of this fish:

"It is one of the finest of the American fresh-water fishes; surpassed by none in boldness of biting, in fierce and violent resistance when hooked, and by a very few only in excellence upon the board. It is in the swift glancing waters of the St. Lawrence, among the exquisite scenery of the Thousand Islands, that it affords the greatest sport to the angler. As the black bass attains to the weight of six or eight pounds, and is excelled in vigor, speed, and agility only by the brook trout, the salmon trout, and the true salmon, the sport which he affords when thus hooked can very readily be imagined; nor can he be brought to the basket by anything short of the best tackle and the most delicate and masterly manipulation."

The bass I have furnished were all taken with the hook, and were one, two, and three years old; they are kept in fish cans a few weeks, and only those suffer whose gills have been injured from being hooked. I have contrived an apparatus for aerating the water while transporting them, and find no difficulty in moving them any distance.

The black bass are incredibly prolific; they pair and spawn at one year old, making their bed in the gravel near the shore in shallow water, from the middle of May to the middle of July. The female, after spawning, retires to deep water to recuperate, while

the male guards the bed until the spawn is hatched, fighting away every intruder, thus securing the eggs from the depredations of other fish.

Robert B. Roosevelt, author of "The Game Fish of the Northern States," says:

"The black bass, belonging as they do to the perch family, have many of the habits, and can be captured in the same manner, as their congeners. But as they are infinitely superior in flavor, they are equally so in game and sporting qualities. They make their appearance from deep water in May and June, grow to great excellence in July and August, and are in their best condition in September and October."

Seth Green, the most successful pisciculturist in America, says: "Spend one-thousandth part of the sum spent in tilling the land in tilling the water, and fish may be sold in our market at two cents per pound. I have contracted to furnish our commissioners with one thousand or more bass for the next season. The selectmen, in towns where they wish ponds stocked, make application to the commissioners, who order the necessary number placed therein. From fifty to two hundred fish that will spawn the next season will, in a few years, produce an incredible number, and ponds that have heretofore produced only a scanty supply of pickerel will furnish a large amount of delicious and wholesome food."

To the disciples of Izaak Walton we say, the game qualities of the black bass (which are not equaled by any fish in New England) do not diminish in his new habitat, the picturesque and enchanting lakes of New England; nor his excellence upon the board; and as they can safely be transported to any part of New England (even those of eight to twelve inches in length,) philanthropists should aid in stocking all its waste waters, thereby supplying its people with the cheapest and most wholesome food indigenous to the country.

AMERICAN SUMAC.

A late dispatch from Liverpool states that the importations of sumac from Sicily in one day amounted to 6,417 bags, and that in the same time 1,200 bags were shipped to the United States. These are daily occurrences, and invite attention. If it is not singular that American sumac is not exported to Great Britain; it is really surprising that such large quantities should be imported into the United States. The value of this article, as is well known, is in the proportion of tannin it contains, and its freedom from sand, grit, or vegetable fiber. Liverpool authorities state that numerous well-certified tests, of both Sicilian and American sumac, prove beyond question that the American is superior, to the extent of ten to twenty per cent., to the Sicilian. The varieties compare as follows: Finest Sicilian: tannin 23.65; sand 1.00; vegetable fiber 75.35—100. Finest American, Virginian: tannin 30.00; sand .50; vegetable fiber 69.50—100. Adding the fractional differences in these disparities the result shows 20.70 per cent. in favor of the Virginia product. This superiority is not confined to Virginia, however; an analysis of Tennessee sumac showing of tannin 26.00; sand 1.50; vegetable fiber 72.50—100.

THE GREAT RAIN STORM.

James B. Francis, engineer of the proprietor's locks and canals on the Merrimac River, has been collecting data concerning the depth of rain collected in several rain-gauges during the storm which ended in Massachusetts October 4, 1869. He reports for the following places:

Places.	Inches.	Places.	Inches.
Newport, R. I., Fort Adams	0.90	Springfield, Mass.	7.50
Providence, R. I., Brown University	0.83	Dover, N. H.	3.20
Boston Harbor, Mass., Fort Warren	0.90	Concord, N. H.	7.40
Boston, Mass., Office Sup't of Sewers	1.76	Weirs Landing, Lake Winnipisseogee.	6.40
Kingston, Mass.	1.75	Lake Village, N. H.	6.77
Milton, Mass.	1.15	Hanover, N. H., Dartmouth College, Shattuck Observatory	5.88
Jamaica Plain, Mass.	1.45	Hartford, Conn., Water Works Reservoir.	8.43
West Roxbury, Mass.	1.46	Middletown, Conn., Wesleyan University.	8.96
Lake Cochituate, Boston Water Works	4.00	New Haven, Conn., (R. gauge overflowed).	4.30
Cambridge Observatory	1.58	New Haven, Conn., (R. gauge overflowed).	4.30
Waltham, Mass.	1.65	Wallingford, Conn	5.95
Topsfield, Mass.	1.77	Brookfield, Conn	5.50
Lawrence, Mass., Pacific Mills	3.56	Colebrook, Conn.	8.44
Lowell, Mass., Office of Locks and Canals	2.84	Lisbon, Maine	2.70
Lowell, Mass., Merrimack Manuf'g Co.	3.02	Standish, Maine	4.31
Lunenburg	7.60	Burlington, Vt., University of Vermont	3.71
Fitchburg	7.53	Woodstock, Vt.	6.35
Worcester Lunatic Hospital, (R. gauge overflowed)	4.75	Middlebury, Vt., (to 11 a. m., October 5)	3.98
Amherst College, (R. gauge overflowed)	5.83	New York, N. Y., Bureau of Sewers	4.11
Chicopee, Mass.	8.71	West Point, N. Y., Military Academy	5.25
Springfield, Mass., U. S. Armory	8.05	Montreal, Canada, Water Works	1.46

MICHIGAN STATISTICS.

The following facts are collated from local reports:

In the Saginaw region 577,569 barrels of salt were made in 1869. The amount of money invested in the business is $2,432,500; number of men employed, 781. In the lumber districts of the eastern shore there are 212 saw-mills, with an invested capital of $6,822,000, which in 1869 cut 738,641,700 feet of lumber, 149,901,000 lath, and 243,820,000 shingles. Number of men employed at the mills, 5,204. In the lumber wood it is estimated that 10,250 men were employed last season, at wages varying from $20 to $25 per month, with board. Mill labor, $2 and $2 25 per day. The western shore lumber region includes the districts of Muskegon, Manistee, Ottawa, and Oceana. About 1,000 men are employed in the mills at Muskegon, exclusive of men in the woods. In that district 260,000,000 feet of lumber were cut in 1869. The products of the other districts in 1869 are not given, but they produced, in 1868, 480,000,000 feet of lumber and 250,000,000 lath. The season's work on the Black River, it is estimated, will be about 100,000,000 feet of logs, including a few million feet left over from last season.

From 12,000 to 15,000 acres of land are devoted to fruit culture in Western Michigan, the greater portion of which is planted to trees not yet in bearing. The average prices of fruit during the season were about as follows: Strawberries, per quart, 10 cents; raspberries, 12 cents; blackberries, 8 cents; apples, per bushel, 80 cents; pears, $3; cherries, $4; plums, $3; quinces, $4; peaches, per box or basket, 75 cents; grapes, per pound, 10 cents. The value of the fruit crop of the season is estimated as follows: apples, $113,392; peaches, $563,722; pears, $11,262; cherries, $2,520; grapes, $7,110; blackberries, $107,705; raspberries, $50,617; strawberries, $12,737; and plums, $1,100; total, $870,165. The total shipments from twelve ports in the region named

are stated as follows: Apples, bushels, 141,740; peaches, baskets, 751,630; pears, baskets, 3,754; plums, baskets, 490; cherries, baskets, 630; quinces, baskets, 446; grapes, pounds, 71,100; blackberries, quarts, 1,346,324; raspberries, quarts, 421,812; strawberries, quarts, 127,372; cranberries, bushels, 370; cider barrels, 660; tomatoes, baskets, 145.

NOTES ON THE AGRICULTURE OF COLORADO AND NEW MEXICO, No. 2.

The troublesome factor in the great problem of settling the vast trans-Mississippi plains is the supply of water. Furnish this in sufficient quantities, and such a stream of emigrants would pour across the "Father of Waters" as was never before witnessed. Furnish this, and the "Great American Desert" of old geographers would ere long compete in the grain marts of the world for precedence. What is now a vast meadow-like expanse, would in time become a field of waving grain. This is no exaggerated picture, for the soil of these plains is rich in the mineral elements which render it peculiarly adapted to the growth of the cereals.

Must this vast area be forever consigned to comparative inutility? Or, is there reason to hope, from any present indications, that it will, in the future, become sufficiently moist for agricultural purposes? And is there any influence within human grasp which can be wielded in aid of its redemption?

Although I cannot attempt a thorough discussion of these important questions in a brief article, yet I propose to present some thoughts in regard to them, and state a few facts ascertained during my recent tour through Colorado and New Mexico with Dr. Hayden's geological expedition. I am aware that the observations made during one trip through the country can furnish but slender data upon which to found a satisfactory conclusion on so important a subject. But I wish to bring the matter before the public that those in a situation to do so may be induced to collect the facts bearing upon it.

When we reached Cache à la Poudre Creek, going south, one of the teamsters, who had repeatedly crossed it during the past eight or ten years, remarked that it has contained more water for the last two or three years than when he first became acquainted with it. Although, at the time, I attributed this opinion more to the man's imagination than to a real increase in the volume of water, yet it suggested to my mind the possibility of a gradual increase of moisture, and I determined to make this subject a matter of inquiry and observation during our journey. Following up this intention, the result has been the clear conviction, in my own mind, that, since 1862 or 1863, there has been a gradual increase of moisture along the plains bordering the east flank of the mountains, from the northern limit of Colorado to Las Vegas, in New Mexico.

It is a common expression among the Mexicans, that the Americans bring rain with them. I understand the Indians express the same opinion. All of the older settlers with whom I consulted on this subject—and the number was considerable—stated without hesitation that, for six or seven years, there has been a continued increase of moisture throughout that portion of country. This was often mentioned without my calling attention to it. Knowing that the present year was an unusually

wet one in some sections, I called attention to this, that it might not influence their answer, questioning them in regard to prior years.

Not feeling satisfied with this evidence, I asked that creeks might be pointed out to me which, previous to 1863, usually went dry at given points, but since that time had been constantly running at those points. This was done in a number of instances. Even the Arkansas, as late as 1862, was dry from the Pawnee Fork to the Cimarron crossing, and previous to 1863 the Pecos dried up, so that the inhabitants were compelled, at points, to dig for water. I find in Emory's Reconnoissance of New Mexico the following remarks: "We rejoined it at the crossing of the Little Cimarron. * * * The grass good, and water plenty, *though not flowing.*" Again, in speaking of the Moro Valley, he says: "The plains are almost destitute of vegetation." Yet this is now one of the richest and best wheat-growing sections in the Territory.

In founding Denver, a mistake was made in building in the dry bed of Cherry Creek, supposing that, like an extinct volcano, it had heaved its last throe. But a sweeping flood taught the inhabitants to respect its slumbering powers, and bridges now span its bed, through which water occasionally runs, though mostly carried off above by ditches.

Another creek, north of the Platte, the Huerfano, the Roya Pecos, and others, may be named, all of which are now constant runners, which, previous to 1863, were accustomed to dry up during the summer and autumn. There are two instances where new streams have been formed, small, it is true, but now constant runners.

Acequias, in some cases, have been allowed to go to decay, because they have not been needed for the last two or three years. In others they have been but partially used. Near Boulder City, on the divide near Fort Union, and at other points, I saw fields of excellent oats and corn, where there was no chance for irrigation, showing clearly that the farmers not only *believe* in the increasing moisture, but act upon that belief.

Along the Rayada, last year, the rain was so excessive as to do considerable damage to the crops; and Colonel McClure, of Santa Fé, tells me the same thing has occurred in another valley this season.

With these facts before them, (for they are undeniable,) is it strange the citizens of these Territories claim that there is a gradual increase of moisture? Is it strange that many of the thoughtful ones look forward with hope to the time when an ample supply of water will rush down the valleys to make the broad plains and ridges yield as abundant crops as the valleys now afford?

Has the introduction of an active population into the country anything to do with this increase? I believe it has. But I am met with the objection that the amount of population is so very small, compared with the extent of the country. I admit the force of this objection; yet, until the climatic conditions of the country, and the relation of population to these conditions have been more thoroughly studied, the objection should not be allowed to prevail. We know not how nearly counterbalanced the contending agencies of aridity and moisture have been. The effect of opening mines in the mountains, stripping and burning the pine forests, making roads along the cañons and over the plains, plowing up and planting the valleys, building towns, &c., &c., has not been sufficiently studied in the Rocky Mountain regions to decide what number of individuals is necessary to disturb the climatic condition. Be this theory right or wrong, the facts showing an increase cannot be denied.

It may be contended that this increase belongs to the latter half of a

cycle of years, which, terminating with 1869 or 1870, will begin to decrease. Although I do not think this theory will fully explain the facts, yet there are some grounds for supposing this to be the case, and as I have no desire to sustain a theory, if erroneous, I will name these grounds.

It is clear that 1862 was dry throughout the section of country under consideration; 1869 was a wet season in the same section. This would indicate seven years as the half and fourteen as the full cycle, (supposing the increase to terminate with 1869.) Counting back, 1855 would be rainy, 1848 dry, and 1841 rainy. The rain registers of Forts Garland and Massachusetts, the only ones I examined, (and these are defective, 1864, 1865, and part of 1866 wanting,) show the greatest number of inches in 1855 and smallest in 1863, reaching no further than 1853. Frémont's journal of 1842 indicates a rainy season east of the mountains. Emory's journal of 1846, which indicates a dry season, would somewhat conflict with this theory of a cycle. A more thorough examination of the records than I have the opportunity of making at this time may bring to light sufficient data to settle this point. But be this as it may, certainly it is a subject worthy of some attention. If the introduction of the present active population has a tendency to disturb the climatic conditions and cause even the smallest increase of moisture, then we may hope for an ultimate redemption of the broad plains which sweep out from the Rocky Mountain base. And an increase of moisture may arise not only from an increase of rain but also by retaining on the surface that which falls.

CYRUS THOMAS.

AGRICULTURAL RESOURCES OF JEFFERSON COUNTY, COLORADO.

Mr. E. L. Berthoud, of Golden City, Colorado, furnishes the following statement of the agricultural and the mineral resources of Jefferson County, Colorado:

Jefferson County, which was formed by an act of territorial legislature in 1861, lies between 105° and 105° 20′ of west longitude, and between 39° 11′ and 39° 55′ north latitude, having an altitude from 4,850 feet on its east boundary to 8,500 feet above the sea on its west boundary, in the Rocky Mountains.

The surface of the county lies about one-half in the prairie sedimentary formations at the east foot of the main mountain range; the other half lies wholly in the foot hills and in the igneous or primitive formation of the main range.

Population in 1869 is estimated at about 2,800. Valuation of all property in the county for taxation this year amounts, upon a very low assessment of value, to a total of $917,907, made up of the following items: 48,447¼ acres of land, valued at $356,799; 1,204 town lots, valued at $137,668; 1,297 horses, valued at $84,925; 131 mules, valued at $13,445; 4,006 cows and calves, valued at $95,242; 1,916 oxen, valued at $57,342; 1,126 sheep, valued at $2,612; 437 swine, valued at $2,149; 24 musical instruments, valued at $1,400; 182 clocks and watches, at $3,925; all other property, including money and credits, valued at $162,400.

There are in the county about one hundred and forty miles of large irrigating ditches, drawing their water from Clear Creek, Bear Creek, Ralston Creek, and South Platte River; besides several hundred miles of smaller, private ditches, used by each farmer for his own crops.

There are now located and partly completed fifteen miles of railroad from Golden City, the capital of Jefferson County, to the valley of South Platte River, where it is designed to make connections with the Union Pacific and the Kansas Pacific railroad, by which freight can reach this county and the main mining regions of Colorado Territory west of us, in Gilpin County, Clear Creek, Park, and Summit; and also carry eastward, to Denver and the valleys of Platte and of Smoky Hill, the lumber, coal,

grain, flour, and other supplies of the agricultural and pastoral resources of this county to these valleys, which must depend upon us for these supplies for a long time to come. Indeed, all the fuel consumed in Denver, and generally in the whole Platte valley, comes from the county of Jefferson and of Boulder, whether it is coal or common firewood.

As the county lies both in the plains extending east to the Missouri and in the Rocky Mountain range, the resources are three-fold: 1. Agricultural and pastoral. 2. Mining—coal, iron, copper, gold, fire-clay, plaster of Paris, building stone, lime and sand. 3. Lumber, firewood, charcoal, and miscellaneous manufactures.

There are now in the county sixteen saw-mills, one planing-mill, six shingle-mills, one brewery, one large tannery, three first-class flour-mills, one paper-mill, one pressed-brick press, with kilns complete; two potteries, manufacturing fire bricks, stone ware, biscuit ware, tiles, &c.; one fire-brick works; six coal mines opened, each producing two hundred tons to five hundred tons of excellent coal per annum; two stone-cutting yards; and one plaster of Paris mill.

Extending parallel with the mountain range—that is, north to south—and upheaved at a large angle, is a succession of not less than three beds of altered cretaceous coal, of excellent quality, almost entirely free from sulphur, and mined with great ease. These beds are from eighteen feet in thickness down to nine or even to four feet, with one, if not three, other beds of much less extent, and not over two and one-half feet thick. Beds of magnetic and of bog iron ore are found, of great thickness and in abundance; also copper, both sulphuret and gray copper, and chrysocolla; zinc blende, argentiferous galena, specular iron ore, saccharine gypsum, and selenite; silica or glass sand; enormous veins of valuable potter's and of fire-clay, alum sandstone; coal oil on Turkey Creek; nitrate of soda, and also soda, or alkali as we call it, both of which are deposits in our low valleys and on Platte River, formed perhaps from the decomposition of the soda or potash feldspars and alum rocks of our foot-hills.

Placer or wash-gold deposits occur to a limited extent on Clear Creek. They yield annually, in all, perhaps $1,500 currency, of a very pure quality of gold; but the limited extent of the gold-producing gravel, the more certainly lucrative returns of agriculture, manufacturing, and coal mining, make it but a very insignificant portion of our computed mineral wealth; and, though the whole bed and cañon of this creek are known to be full of rich, coarse gold, yet the great cost and difficulty of mining the bed of the streams have thus far baffled all attempts.

Although situated near the fortieth parallel of latitude, and at an altitude varying from four thousand eight hundred and fifty feet to eight thousand five hundred feet above the sea, yet the proximity of the high ranges of mountains west, and the vast plains of the Missouri east render us less subject to extremes of heat and cold than the same parallels on the Atlantic coast. The general rule is, open, mild winters, beginning in December and ending in April; a cold snap in December—if not in December in January—and again in March. Our snow-fall is in March and April. Frost is rare outside of the mountains after May 1st; and our rain-fall almost entirely from the end of May to August. During my residence of ten years in this territory and the great plains east, I have observed that, at the foot of the mountains, and especially in our newly cultivated and recently occupied farming valleys at Clear, Bear, Ralston, Boulder, St. Vrain, Thompson, and Cache à la Poudre Creeks, our rain-fall has more than doubled since 1860; and that our dry and formerly arid, sterile plain between South Platte and the mountains west, which incloses an extent of country averaging twenty miles wide by one hundred long, and cut crosswise by these valleys, has since been furrowed by innumerable irrigating ditches and high prairies farmed with most encouraging results. This cultivation, by increasing the growth of grasses, weeds, and bushes, has also created greater evaporation and moisture in our atmosphere, which return to us, when our east winds blow in summer, in most valuable, fertilizing showers. This year, 1869, no irrigation has been needed until late in the month, when most of the wheat and the best part of the oats, barley, and rye, were so far advanced that irrigation would not benefit them. It is a matter of universal remark here, among old settlers, that our high prairies, miles away from any stream, can this year be mowed with profit for hay, where a year ago grazing in July and August was only indifferent, the soil bare in many places, and parched or covered with worthless cactus or prickly pear.

Another erroneous impression which prevailed in the first settlement of this county nine or ten years ago, in respect to the great altitude of the lands above the plains, also retarded agriculture in our mountain regions by deterring many from attempting the culture of small grains, and even potatoes, upon the mountain farms, which were used only for hay and dairy produce. This, too, has passed away, and now our best potatoes, oats, and barley, grow from six thousand five hundred to seven thousand four hundred feet above the sea, and our turnips can not be surpassed in quality or quantity. Three hundred to three hundred and fifty bushels of most excellent potatoes are frequently raised to the acre.

The best small grains raised here for profit are wheat, oats, and barley. Pumpkins,

squashes, and corn are also raised. Rye does very well, but is yet not in much favor. As a general rule Indian corn does not do so well, and is not ranked as a paying crop north of the Arkansas valley. Our cold nights and freedom from dews are not favorable for its growth, and consequently reduce its yield; while irrigation apparently does not succeed so well as with the class of smaller grains, or with root crops. Of vegetables, our valley farms produce tomatoes, beets, parsnips, radishes, cauliflower, cabbage, lettuce, carrots, onions, strawberries, currants, rhubarb, &c., in abundance and of most excellent quality, with little expense in cultivation. Sweet potatoes do well in sandy soil, but require vigilant attention and continued cultivation. Orchards have not thus far been successful. Peaches and grapes would ripen well here, were our late frosts kept from injuring the buds by planting in more cold, sheltered, north slopes.

TABLE OF AVERAGE YIELD PER ACRE OF CEREALS IN JEFFERSON COUNTY.

Year.	Wheat.	Corn.	Barley.	Oats.
	Bushels.	*Bushels.*	*Bushels.*	*Bushels.*
1866	33. 0	33. 5	34. 25	44. 25
1867	29. 5	29. 0	21. 0	31. 10
1868	26. 4	42. 0	.....	33. 30
1869	24. 25	(*)	28. 0	38. 0

*None yet ripe.

METEOROLOGICAL OBSERVATIONS MADE IN 1867.

March.—No rain whatever; total snow-fall, ten inches; maximum cold observed, 20° Fahrenheit; maximum heat, 50°; the coldest month of March ever known in Colorado Territory; mean temperature for the month, 27.9°.

April.—No rain whatever; total snow-fall eleven and one-half inches; maximum cold observed, 28°; maximum heat, 78°; coldest day, mean temperature, 35°; warmest day, 69°; monthly mean temperature, 50.4°.

May.—Rain-fall, two and five-eighths inches; snow-fall, twenty-one inches; coldest day, mean temperature, 34°; warmest day, 67°.

June.—(Up to the 17th day of month.) Rain-fall, two and one-fourth inches; snow, none; monthly mean temperature, 67.4°; mean temperature of coldest day, 48.7°, June 7; mean temperature of warmest day 80°, June 13.

Thermometer used, by Tagliabue, Philadelphia, Pa.; altitude of point of observation 5,242 feet above the sea; latitude 39° 44′ north; longitude 105° 8′ west.

REGISTER OF PERIODICAL PHENOMENA.

Plants.	First appearance of—		Remarks.
	Leaf.	Flower.	
	1867.	1867.	
Berberis aquifolium	Evergreen	February 27	February cold and tardy.
Carex Willdenovii	April 9	April 17	
Agrostis alba	March 29	April 7 to 10	
Anemone multifida	May 5	May 19	
Erigenia bulbosa	April 17	April 20	April backward and cold; season three weeks later than usual.
Claytonia Caroliniana	April 9	April 11	
Prunus serotina	May 1 to 7	May 13	
Prunus Americana	May 10	May 10	
Ribes rotundifolium	April 13	May 10	
Saxifraga Virginiensis	May 5	May 10	
Negundo aceroides	May 13	May 10	May opens warm, yet very backward; Vasquez Fork begins its yearly rise the 10th to 12th.
Senecio tomentosus	May 10	May 10	
Cerastium arvense	May 3	May 10	
Viola pubescens	May 1	May 10	
Astragalus Plattensis	April 25	May 10	
Betula pumila	May 7	May 10	
Mertensia Sibirica	April 27	May 8	

The cold snap in March, from the 11th to the 15th, set all vegetation back from two to three weeks. Many April flowers have been retarded into May. Our grain crops also, from the cold snow-storms of April and May, were seriously retarded.

Aristida purpurea, Agrostis vulgaris, Agrostis alba, Alopecurus aristulatus, Bromus secalinus, Bouteloua curtipendula, Danthonia spicata, Elymus Virginicus, Calamagrostis Nuttalliana, Bouteloua oligostachya, Cenchrus tribuloides, Festuca elatior, Festuca nutans, Poa annua, Panicum capillare, Panicum crus-galli, Spartina juncea, Setaria glauca, Buchloë dactyloides, Stipa avenacea, Panicum sanguinale, Phleum Alpinum, Triticum repens, Brizopyrum spicatum, Aira cæspitosa, Glyceria pauciflora, Pleuraphis Jamesii, Festuca scabrella, Poa arctica, Sporobolus cryptandrus, Avena striata.

EASTERN OREGON AND WASHINGTON TERRITORY.

Philip Ritz, an intelligent settler in the Walla-Walla Valley, Washington Territory, supplies the following facts in regard to the agricultural resources of the great Columbia Plains:

The great Columbia Plains, lying east of the Cascade Mountains and west of the Blue and Bitter Root ranges, and parallel with them, and parallel with and about 300 miles east of the Pacific Coast, constitute one immense grazing ground, stretching from mountain to mountain, about 150 miles in width, and from the Klamath Lake on the southern boundary of Oregon in the south, far into British Columbia in the north, more than 400 miles in length, covered with the finest grass in the world, well watered in many places, with rivers and streams making down from the heavily-timbered mountains, through the plains, and drained by the noble Columbia.

Walla-Walla City and Walla-Walla Valley lie just north of the forty-sixth parallel of latitude, and about in the center of this country. This country is composed of a series of valleys, which are drained by the Deschutes, the John Day's, the Umatilla, the Walla-Walla, the Yakima, the Palouse, Spokane, and the Colville.

The soil throughout this vast region presents a great uniformity of character, being chiefly a light loam, with more or less alkali in all of it. Along and near the base of the mountains there are more loam and clay, and, consequently, more moisture retained in the soil than farther out in the valleys, although all the bottom lands along the streams contain a large amount of decayed vegetable matter, which, with the moisture arising from the streams, renders them extremely productive.

One of the great peculiarities of this country is its mild climate. At this place, in latitude 46°, we seldom have snow before Christmas, and throughout the fall, for more than two months, we have the most delightful weather, generally frost at night, but bright, warm days, with the thermometer ranging from 55° to 70°.

Singular phenomena, peculiar to this country, are the periodical warm breezes through the fall and winter, which spring up away down in the valleys of California, break through the low passes of the Sierra Nevada range, on the head of the Sacramento, and, passing through by the Klamath Lakes, sweep along the base of the Blue Mountains, and warm up the whole atmosphere beyond the 49th parallel. Such a breeze is now blowing, and at this writing, November 2d, 6 o'clock a. m., the thermometer stands at 73°.

This mild climate, with the abundance of the nutritious bunch grass everywhere, renders this pre-eminently a grazing country. Cattle and horses are seldom fed here during the winter, even as far north as the 49th parallel, but graze all winter on this dry grass, which, through the dry fall, has become cured standing, so that it is nearly equal to timothy hay; hence, even up to the very summit of the mountains, on the headwaters of the Columbia and Missouri, we can drive up cattle in the spring, from the range, equal to the best eastern stall-fed beef; and many of them have not tasted a morsel of hay or straw.

The atmosphere is salubrious and remarkably free from miasmatic impurities. In the summer the heat is rather intense during the day, but every evening brings with it a refreshing coolness, which is perfectly delicious.

Wheat, rye, oats, and barley grow finely, without irrigation, in all our soils which contain clay and loam, and can be raised on the sandy portions of the valley with irrigation. Three years ago, when our valley contained a population of less than 6,000 souls, all told, we raised about 1,000,000 bushels of grain, 700,000 of which was wheat.

I have seen large fields of wheat average 56 bushels to the acre, and weigh 62 pounds per bushel; and have seen fields which yielded 40 to 50 bushels per acre from a "volunteer" crop, that is, produced the second year from grain shattered out during harvest, sprouting during the fall and growing without even harrowing.

We generally raise the variety known as "Club," and sow it in the fall or spring.

We produce about 40 bushels of corn to the acre, of the large Yellow Dent variety, and it ripens nicely by the first of September.

The potato is perfectly at home here, growing large, fine, and mealy. I let a neighbor have nine pounds of the early Goodrich variety last spring, from which he raised 1,575 pounds. Sweet potatoes yield finely, but they are not so sweet as farther south. Turnips, beets, cabbages, tomatoes, peas, beans, onions, are all raised with ease and in great abundance.

Although this country has been settled but a few years, there are already a number of fine-bearing orchards. I commenced here six years ago last spring on ground that had never been fenced or plowed. After thoroughly plowing up about five acres of ground, I planted it in orchard with small yearling trees. This season I had 1,000 bushels of the finest peaches that I ever saw grown—fully equal to the best Delaware and New Jersey peaches—besides large quantities of apples, pears, plums, cherries, apricots, grapes, and every variety of small fruits. Fruits of all kinds are perfect in every respect in this climate, particularly plums, the curculio having never been seen. I have 100 bearing plum trees; one Imperial Gage, two years ago, produced 400 pounds of delicious rich fruit, which brought 8 cents per pound in gold; last year it had about the same amount of fruit, which sold for 12½ cents per pound, gold; many other trees did nearly as well. There are a large number of orchards just coming into bearing in the country, which will, of course, bring down the price of fruit.

The climate is so dry that we never see anything like mildew or rot on the grape. I had grapes last summer ripen and have a fine flavor, which lay entirely on the ground.

Fencing on these plains is an important item. We go to the mountains for all our fencing and lumber, from 8 to 20 miles. We can buy good fir rails in the mountains for $1 50 per hundred, with a good road to haul them out. There has been a large amount of fencing done in this valley by ditching, but it soon wears down, and farmers are now building good rail fences.

There is yet a large amount of good land to be had in the Columbia Basin, by going back a little from the settlements, at $1 25 per acre.

The facilities for getting here from the east are, by Union Pacific road to Kelton, 80 miles west of Salt Lake, or Promontory Point, thence by daily stage, 500 miles, through Idaho and Western Oregon, to this place; or by rail or Panama to San Francisco, thence by steamship to Portland, Oregon, thence by steamboat by Columbia River to Wallula, and thence by stage, 30 miles, to this place.

THE FOOT AND MOUTH DISEASE.

The following circular letter has been sent to the collectors of customs at the principal ports of the United States:

SIR: The department is advised that a contagious disease, affecting the hoof and mouth of neat cattle, is now prevalent in Europe, and as it is of the utmost importance that the introduction of this disease into the United States should be prevented, you are hereby instructed not to allow the landing of any animals brought into your port from England, or from the continent of Europe, except upon the production of a consular certificate that they are free from any contagious disease, and that no such disease prevails in the country from whence exported.

All regulations heretofore issued, which are inconsistent with these instructions, are hereby rescinded. I may also mention that under the date of the 29th of October last, the Secretary of State was requested by this department to instruct consular officers not to give certificates to persons shipping cattle to the United States, except in case where the animals have been examined by a government inspector, or other expert, and pronounced free from disease, and further, that no animals coming from the vicinity of the disease are to be certified by the consul.

GEORGE S. BOUTWELL,
Secretary of the Treasury.

W. C. Bland, veterinary surgeon, of Spunhamland, England, recently read a paper upon this disease, before the Newbury Farmer's Club. He states that this malady has been termed by medical authorities eczema epizootica and epizootic aphtha. The common name, however—"the foot and mouth disease"—is deemed the most expressive, because the eruption or vesication that forms the eczematous phase of the disease

has for its seat certain portions of the mouth, and the skin and tissues connecting the hoofs together. In its nature it is febrile; a fever, characterized by certain local manifestations; but it is a fever of a low type, distinguished by depressions of the vital powers. It is highly contagious, but actual contact between the healthy and the diseased is not essential to its contraction, as it may be communicated through the medium of the atmosphere or conveyed by the clothes of attendants. It is, therefore, infectious as well as contagious. The opinion is expressed that the epizootic eczema of England and the epizootic aphtha of France are one and the same disease, and evidence is adduced to show that the disease has been imported into England.

The causes of the disease are held to be twofold, predisposing and exciting. Predisposing causes may be defined to be those that bring about such a state of the system as renders it apt to take on any diseased action when the exciting cause is applied. Among these causes may be enumerated bad or insufficient food, over-crowded, ill-ventilated, and ill-drained sheds, and the presence of other diseases of a weakening or debilitating character. Exciting causes may be defined to be those which actually produce disease; thus, damp and cold air are the exciting causes of catarrh, common cold, and inflammation. The exciting cause of the disease is a specific poison conveyed from the body of a diseased animal to that of a healthy one. The disease is ushered in by a cold fit, manifested by a slight erection of the coat, cold extremities, frequent shifting of the limbs, and diminution of appetite. This cold fit passes off very quickly, frequently within half an hour, and is often so slight, and present for so short a period, as to escape observation. This is quickly followed by the hot fit. The coat resumes its natural appearance, the roots of the horns are unusually warm, the mouth presents a slight increase of saliva, the nose is dry, the pulse increased in number, (say to 70,) the feet tender, the animal occasionally shaking them, as if attempting to dislodge some offending body. From six to twelve hours after the commencement of the chill-fit, an effusion of fluid takes place under the cuticle or outer skin, at those places where it is most dense and void of hair. This effusion raises the cuticle in the form of four tensive vesicles, namely, on the dorsum, or top, and around the point of the tongue, under the upper lip, and on that portion of the gum on the upper jaw which is opposed to the incisor teeth. These vesicles sometimes form upon the end of the nose and around the nasal openings, upon the skin connecting the hoofs, and around the tops of them, and just at the heel of the horny sole; also upon the teats of cows. In about twenty-four hours the vesicles burst, giving to the ruptured cuticle a torn and ragged appearance, and through the fissures thus formed may be seen the true skin, reddened and inflamed. In the case of milch cows, at the commencement of the desiccation or drying up of the cuticle, a very troublesome and painful task is begun, it being necessary to remove the incrustation from the opening of the duct at every time of milking, thus causing unavoidable irritation, ulceration, and extended inflammation. The duct becomes swollen and impervious, and finally the whole gland becomes seriously affected. Under such circumstances the small milking syphon is of great use. If carefully passed (first smeared with olive oil or lard) up the duct, all the milk will run through it. From the bursting of the vesicles to the end of the third day, sloughing of the ruptured cuticle is carried on, during which period the animal is prevented from feeding to any extent, by the extreme soreness of the mouth. At the end of the third or fourth day, in severe cases, the animal presents a wretched appearance, looking empty, the coat

partially erect, head drooping, a constant flow of saliva, eyes sunken, and lying down most of the time, both from debility and tenderness of feet. From the end of the third or fourth day the process of recovery commences. The sloughed cuticle is gone, or nearly so, and the true skin is forming a new cuticle. By the end of the tenth or twelfth day recovery may be said to be complete, except, for a few days, a slight discharge of saliva and a tenderness in the feet.

Happily, the disease is not fatal. The consequences most to be dreaded are, loss of one or more quarters of the udder, from inflammation caused by retention of the milk, and the sloughing of the hoofs, which not unfrequently occurs where the cattle are driven from market to market while laboring under the disease. Other serious consequences are the temporary loss of milk in cows, and in the condition in all cattle.

As this disease has a distressing effect upon the vital powers, care must be taken not to use measures or to give medicines that will debilitate the system. Bleeding must not be thought of; drastic purgatives do much mischief; gentle aperients are admissible, combined with medicines calculated to allay fever without prostrating the animal; nitric spirit of ether, the acetated liquor of ammonia, cinchona bark, and gentian, will be found useful. A dose of these given, in combination, every second or third day, taking care to guard against constipation, will carry the patient through the disease. The general treatment will consist chiefly of good nursing. The best locality for cattle suffering from the disease, so long as the weather is not excessively cold and wet, is the open field.

AGRICULTURE IN THE NETHERLANDS.

From a report to the Department of State by Hugh Ewing, United States minister at the Hague, upon the agricultural progress of the Netherlands, some interesting statistics are herewith presented.

The total area of the kingdom is 3,283,997 hectares. Population 3,800,000, an increase of over 500,000 since 1859. In 1859 there were 101 inhabitants to the 100 hectares in the kingdom, and in the country 60 to 100 hectares. Agriculture and its branches employed 229,422 men and 95,349 women. To this number must be added, of hired persons, 115,000 men and 47,000 women, forming a total of 486,000; this proportion is considerably less than that of the agricultural class of Belgium or of Great Britain.

The total area in 1859 embraced 21 per cent. of waste lands, 224,750 hectares of woods, and 15 houses to each 100 hectares of land. In 1832 the cultivated land amounted to 897,442 hectares; and the waters to 130,845 hectares, of which one-thirteenth was in lakes and ponds, many of which have since been drained. From 1832 to 1852 lands were drained to the extent of 120,000 hectares, bringing the area of arable land up to 940,000 hectares. It is stated that from the year 1500 to 1858 the conquest of land over water was 355,000 hectares. From 1815 to 1858 the annual average was 1,066 hectares. In 1862 there were, in pastures 1,310,000 hectares, in cultivation 791,000 hectares, wood 319,035 hectares, and uncultivated 704,049 hectares. The average area in cereals and other farm products from 1856 to 1865 was 691,700 hectares; from 1862 to 1865 it was 703,200 hectares; and in 1866 it was 722,000 hectares.

The annexed table shows the aggregate area and yield of the principal crops for the years named, the area being given in hectares* and the yield in hectoliters†:

Products.	Area.			Yields.		
	1860.	1866.	1867.	1860.	1866.	1867.
Wheat	83,200	84,128	78,893	1,774,000	1,561,234	1,329,296
Rye	194,400	202,854	200,016	3,758,000	3,698,794	2,309,477
Barley	44,300	41,980	46,833	1,425,000	1,330,670	1,532,540
Oats	89,060	94,132	105,435	3,201,300	3,381,733	4,019,688
Buckwheat	64,400	68,325	68,153	1,232,000	1,241,941	1,481,770
Peas	.....	11,191	12,828	173,000	262,806	320,849
Beans	.....	32,141	34,546	721,340	719,833	577,838
Potatoes	95,860	109,353	111,265	12,472,000	13,119,495	15,165,453

The yield of beets in 1866 reached 120,000,000 kilograms;‡ chiccory, 25,261,562 kilos; hemp, 1,110,297 kilos; flax, 7,194,499 kilos; madder, 6,804,468 kilos; tobacco, 3,900,000 kilos. The production of beets for sugar has largely increased since 1860, and the number of sugar establishments has increased from four in 1859 to eleven in 1866.

The aggregate value of the cereal and other crops in 1866 was 116,081,000 florins, and in 1867 it reached 176,605,000 florins. The average annual product from 1861 to 1865 is valued at 161,053,000 florins, including the straw. The value of the wheat crop of 1867 was 19,909,767 florins; rye, 27,766,469 florins; buckwheat, 13,947,379 florins; barley, 12,079,131 florins; oats, 23,349,806 florins; peas, 4,112,980 florins; beans, 5,125,815 florins; oil seed, 4,586,175 florins; potatoes, 47,467,868 florins; beets, 1,304,000 florins; flax, filament and seed, 11,791,061 florins; hemp, 344,670 florins; chiccory, 475,820 florins; madder, 2,651,139 florins; tobacco, 818,321 florins.

The imports and exports of leading farm products are given as follows, in hectoliters:

Products.	Imports.			Exports.		
	1860.	1867.	1868.	1860.	1867.	1868.
Wheat	1,131,330	1,012,353	945,011	577,380	236,977	277,850
Rye	2,711,670	3,055,879	1,962,168	859,680	930,846	455,257
Barley	1,176,930	1,277,883	1,136,194	703,320	422,795	533,761
Oats	70,530	67,734	253,086	411,060	581,845	993,538
Buckwheat and millet	242,310	578,052	359,797	9,690	18,943	14,044
Rice, (kilogs)	29,759,105	41,544,849	54,736,117	21,772,125	13,444,230	12,143,812
Peas	80,430	40,517	24,361	21,090	27,745	41,936
Beans	12,980	39,506	33,311	87,330	54,338	55,479
Potatoes	228,945	235,695	196,809	295,267	327,195	703,249
Flour	20,981,365	23,940,263	29,912,652	2,828,060	2,204,700	2,548,679

The average annual importation of butter for the same series of years was 1,036,000 kilograms; cheese, 658,000 kilograms; and of exportation, butter, 16[illegible],000 kilograms; cheese, 28,831,000 kilograms.

* Hectare, 2.4711 acres. † Hectoliter, 2.83732 bushels.
‡ Kilogram, 2.204737 pounds.

The number of farm stock in the kingdom in the respective years named was as follows:

	1860.	1867.	1868.
Horses	242,528	253,662	255,130
Mules and asses	.....	2,706	2,706
Cattle	1,286,954	1,271,563	1,360,779
Sheep	865,829	967,312	927,215
Hogs	270,587	128,273	302,557
Goats	114,389	321,534	132,928

The average annual imports and exports of live stock for years from 1861 to 1865 were as follows:

	Imports.	Exports.
Horses	3,087	4,464
Colts	760	2,333
Oxen and cows	12,733	110,459
Calves	1,878	66,732
Sheep	27,433	286,419
Lambs	660	15,875
Hogs	33,195	85,473

From the autumn of 1865 to the summer of 1867 the number of cattle lost by the rinderpest reached 115,354. The statistics of 1867 show a rapid recovery, the number, 1,360,779, exceeding by 58,772 the average from 1856 to 1865, the period preceding the pest. The area appropriated in 1859 to feed animals was estimated at 1,400,000 hectares, being double that given to food for man. The relative values of the products of that year was as follows:

Value of Products of Vegetation.

	Florins.
Cereals, (seed deducted)	45,000,000
Plants, (raw material)	25,000,000
Potatoes, &c.	35,000,000
Wood	5,000,000
	110,000,000

Value of Products of Cattle.

	Florins.
Milk, butter, and cheese	85,000,000
Meat	30,000,000
Wool, hides, poultry, &c.	9,000,000
Young horses	6,500,000
	130,500,000

The statistics of vineyards and orchards are meager. There is a heavy export of fruit and vegetables to England. Gelderland, the cherry-producing province, yields 180 to 400 florins per hectare profit. North Holland has a considerable product of strawberries, raised principally at Aalsmeer. In 1860 the total product from 10 hectares was 200,000 liters, and in 1866 from 16 hectares 378,000 liters. Apples and pears are cultivated in nearly all the provinces. In 1866 the product of apples in Gelderland was 250 hectoliters per hectare. In South Holland 1,512 hectares are planted in fruit trees, and in 1866 the product of 1,324 hectares in apples and pears was 63,000 hectoliters. Vineyards are extensive in Westland, a district of South Holland. The grape is not suitable for wine-making, but for the table is said to be superior to the "Chasselas" of Fontainebleau and Versailles. In the vicinity of Munster, a village of the Westland, there are 27 miles of wall built in the fields for grape culture, estimated to produce three kilos per meter of wall.

The statistics of the fisheries show that in 1861 the value of the product of the herring fishery was 548,000 florins, employing 1,228 men and 82 doggers. In 1868 the product was 23,240 tons, of which 13,023 tons were

exported. The red herring fishery yielded in 1865 the sum of 772,025 florins; in 1866 but 561,341 florins. The amount of sea-fish taken by the Vlaardingen fishery in 1866 was as follows: Cod-fish 16,407 tons; dried cod, 4,225 tons; haddock, 2,880 tons. The exports from this point in 1865-6 were of salt cod, 7,550 tons; stock fish, 1,338,000 kilos. The exports of red herring in 1866 were 66,072,000 pieces; fresh pieces, 1,914,000 kilos; shrimps, 498,000 kilos. The product of the Zuider Zee in 1866 was 37,000,000 red herring; flounders 2,213,200; ancovies 65,000 ankers. In 1866 six vessels were engaged in the oyster trade, in the North Sea, taking 85,000 oysters; from the interior banks 26,000—total catch, 111,000. Fish in the rivers and other interior waters having diminished of late years, the government has taken measures to increase the hatch, particularly the salmon, by pisciculture.

FACTS FROM VARIOUS SOURCES.

A Maine correspondent of the New England Farmer, in comparing the net profits of farming in that locality in 1849 and in 1869, states that twenty years ago he paid $25 tax; for a hired man six months $60; board for man, $39; newspaper $2 50, total $126 50. In 1869 he paid $50 taxes; hired man $150; board for man $78; newspaper $2 50—total $280 50. By taking the ruling prices of his market he estimates the amount of each of the products named required in 1849 and in 1869 respectively, to pay his taxes, his hired man and his paper, showing the difference in favor of 1869, as follows:

	Prices.		Amount required to pay.		Surplus.
	1849.	1869.	$126 50 in 1849.	$280 50 in 1869.	In 1869.
Potatoes, bush	$0 47	$0 50	759	561	198
Corn, "	62	1 69	203	187	17
Beans, "	1 50	3 50	83½	80	3½
Hay, ton	8 00	20 00	16	14	2
Butter, lb	12	40	10 37	681	356
Eggs, doz	10	34	12 05	875	390
A good cow	12 00	40 00	10½	7	3½

If he sells potatoes to pay the bills named, it will take 198 bushels less now than in 1849; if corn is sold, 17 bushels less; if hay, 2 tons less; if butter, 356 pounds less; if cows, the price of three and a half less. His farm is also worth an advance of twenty-five per cent. over the value of 1849.

In urging the more extended culture of flax, California papers state that the oil mills established on the Pacific coast have been compelled to import two-thirds to three-fourths of the flaxseed required to keep them employed, though the soil and climate of that country are admirably suited to the production of flax. One mill has imported two hundred and fifty tons of the four hundred tons of flaxseed used during the current year. In comparing the respective profits of flax culture and wheat production, it is stated that one farmer in Santa Cruz County raised more pounds of flaxseed to the acre than his neighbor did of wheat, the fields adjoining each other. The flaxseed sold for four cents per pound, the wheat brought one cent and a half per pound. The flax straw sold for fifteen dollars per ton on the ground, while the wheat

straw was comparatively valueless. It is held that the tendency to wheat raising has been too general, in view of the fact that the price depends entirely upon a foreign market, while the State has been importing many supplies from abroad which could be as well and as cheaply raised at home.

A Solano County, California, correspondent states that several gentlemen in that county have about seventy acres in flax, and have been experimenting for the past three years with a view to ascertain the best time for planting, the most favorable character of soil, &c. They have planted in December, January, February, and March, and give decided preference to the January sowing, as regards certainty of sprouting, strength of stalk, and yield of seed. They find that summer-fallowed land is decidedly preferable. As between the sandy and adobe lands there does not seem to be much choice. As a matter of experiment, they have allowed a portion of their seventy acres to produce volunteer crops for the past two years, and they say that the soil bears none of the marks of exhaustion apparent on heavy wheat-cropping, while the yield continues good. The average yield on the seventy acres is about eight hundred pounds per acre, and brings in the San Francisco market four cents per pound. An experiment with hemp was confined to one-half an acre, planting in December. The stalks grew five to six feet high, and yielded abundantly. The seed brings eight to ten cents per pound in San Francisco, and the fiber sells readily at eighty dollars per ton, when properly prepared.

The same parties have raised considerable quantities of canary seed, which yield eight hundred to twelve hundred pounds per acre, and bring five to ten cents per pound in the market. Another party has this year raised fifty tons of coriander seed, (used in the manufacture of bitters, cordials, &c.,) the yield being about one ton to the acre. The price ranges from four to ten cents per pound. This lot was contracted for at four cents, but the purchaser sold it at fourteen cents on a sudden rise in the market.

Farmers of Monterey County, California, have been experimenting with the Chinese, sugar-cane, with gratifying success. It is found that fair average land, planted with this cane, will yield three hundred and fifty gallons of sirup to the acre. About thirty acres was also grown near Gilroy, San José County, and the crop will be more extensively grown next year.

A San Francisco correspondent states that his company have ordered fifty thousand ramie roots from New Orleans, which will be planted in moist soil. The company have contracted with an English house to take all they can produce. The company are also setting out twenty thousand cuttings of yellow ozier. They also have a large quantity of madder seed coming from France, and six barrels of white Silesian sugar-beet seed, sugar-cane, and bamboo, from the Sandwich Islands and China, which are to be planted. It is stated that fifteen thousand gallons of fine sorghum sirup is now in the market.

The Buena Vista vineyard, California, has produced this year about fifty-four thousand gallons of wine, against ninety-eight thousand last year, when the grape crop was unusually large. The amount of sparkling wine put up this year is fifty thousand bottles.

It is said that mackerel of good quality can be taken in large quantities in the waters surrounding the islands of the Santa Barbara channel, California. Parties have been engaged, the past season, in catching and barreling them to supply the local demand of the southern coast. They make what is known in the trade as No. 2 mackerel.

A comparative statement of the assessments in the several counties of California for the years 1868 and 1869 shows that the mining districts are falling off, while the agricultural counties are increasing in wealth.

In Los Angeles a gentleman has been experimenting with cotton, and the result convinces him that it may be successfully grown in that county without irrigation. The bolls gathered are of good size, finely opened, and the staple is said to be remarkably fine.

The Standish steam-plow, a California invention, appears to be working successfully. It has taken two gold medals, valued at two hundred dollars each, at the mechanics' fair in San Francisco, and a prize of three hundred dollars at the State agricultural fair. A writer speaks of it: "Crossing back and forth over the adobe flats of Sonoma County, cutting its twelve-feet swath, tearing up the annis and soap roots, and leaving them free from dirt, to wither and die in the sun; plowing at times two acres per hour, and giving the tough, dry, sun-baked adobe such a cutting and turning, raking and stirring, mixing and whirling, airing and pulverizing, as it never got before; and this, too, with a plow not intended for anything like such heavy work. An acknowledged success in ordinary soil, it was doubted if it would work in adobe. The doubt is now exploded. The present plow does much better than the inventor has claimed for it. He did not expect to work in this land, for want of sufficient power and strength, but set the plow in operation for the purpose of getting the data necessary for the construction of a plow especially adapted to this stubborn soil; but by strengthening some of its weak parts, it does its work in such a manner that the proprietor has been urged to stay and break up several hundred acres. He has applications to plow thousands of acres of lighter soil in the San Joaquin valley. The grain is, in some instances, plowed in, no harrowing being necessary, the plow leaving the surface level and smooth."

A local estimate gives the total cost of wheat production in Tuolumne County, California, including plowing, seed, sowing, harrowing, heading, and stacking and threshing, as $4 80 per acre, with an average yield of fifteen to twenty bushels to the acre. A farmer in Minnesota estimates his wheat this year to have cost him $12 19 per acre, with a yield of eighteen bushels to the acre.

The secretary of the Esperanza Agricultural Association, Brownsville, Texas, writing to the Department in reference to the neglected condition of the whole region of the Rio Grande since its acquisition by the United States, says that the above-named association has purchased a square mile of land near Brownsville, after having secured the consent of no less than seven owners. The only plow hitherto used here is known as the Mexican plow, a rude wooden implement, shod with iron. A farm wagon is unknown. Neck-yokes for work-oxen are also unknown, the cruel Spanish yoke having been exclusively in use. The hoe has been the only cultivator, sparingly used, and man the only planter. He says that two, and sometimes three, crops of corn may be grown upon the same land in a single year. Cotton thrives well, and picking usually lasts from June to late in December. Sugar-cane thrives, but has been raised hitherto only for eating in the raw state by the Mexicans. The *Palma Christi*, or the castor-bean plant, grows in a wild state, and a single instance of the cultivation of the small East Indian bean has yielded abundantly. Potatoes, yams, onions, and other vegetables give a large yield. All the country needs is an improved system of agriculture, division of lands, and the application of capital and intelligence directed to labor, to render this region one of the best paying farming districts of the State.

Recent exploration has practically demonstrated that the St. John's

River, Florida, is navigable for steamers 375 miles. The steamer Pannasofka, with a party under Dr. Moragne, president of the Inland Navigation Company, landed engineers on Lake Washington, at the distance named from the mouth of the river. From Lake Washington the party made a tour of inspection to Indian River, six miles distant. The lake is about ten miles long and five miles wide. The lakes through which the party passed are described as beautiful, and the country as much diversified.

Some time since several bales of California "tule," *Scirpus validus*, were sent to Germany to be experimented with as a material for paper fiber, and samples of a good quality of printing and writing paper were subsequently returned. More recently a lot of these tules has been received at New York for the same purpose, and it is stated that they make a good quality of white newspaper and wrapping paper, and would make an economical substitute for paper material less plentiful. The tule belongs to the same family as the ancient *papyrus*, and grows all over the world.

Sir W. Miles writes to the Wincanton Petty Sessions, Somerset County, England, that after having had the pleuro-pneumonia hanging on his herd for nearly eighteen months, he has arrested its progress by causing the herd to inhale carbolic acid night and morning, which stopped the disease. The acid was mixed with water, and sprinkled with a watering-pot on saw-dust, put under the fore-feet of the cattle when tied up. Cures are also reported by causing the cattle to inhale the fumes of sulphur.

The Pioneer Oil Company, of Salem, Oregon, has contracted for 2,000 acres of flax for 1870, and a California company has contracted for 3,500 acres, to be grown in Oregon. The Bombay or large-seeded flax is likely to be almost exclusively used until there is a home market for lint. The Pioneer Oil Company has manufactured 60,000 gallons of oil during the past year, and it is expected that 100,000 gallons will be turned out the coming season.

The San Francisco receipts of Oregon products from January 1 to October 30 of the current year, are reported as follows: Wheat, 30,961 sacks of 100 pounds; oats, 55,820 sacks; barley, 240 sacks; salmon, 1,837 barrels, 2,309 half barrels, 18,729 cases, and 1,599 packages; bacon, 4,468 packages; beef, 439 barrels; butter, 729 packages; cheese, 12 packages; hams, 411 packages; lard, 1,497 packages; pork, 1,194 barrels; dried apples, 2,897 packages; pig-iron, 825 tons.

The auditor of Washington Territory states that the total valuation of assessed property in that Territory, as returned to his office for the present year, is $7,844,142, being an increase of twelve per cent. over the valuation of 1868. During the twenty months ending August 31, 1869, the amount of public land disposed of at the Olympia land office was 180,249 acres, and at the Vancouver land office over 70,000 acres. Of the public lands in the Territory, 5,258,694 acres have been surveyed, about half of which lies east of the Cascade Mountains.

A planter in Jackson County, Texas, states that the castor-bean has proved a failure in that locality in protecting cotton against the ravages of the army worm. On the other hand, several thorough tests in other localities have been made with favorable results. Planters on the Rio Grande think the value of the castor-bean in this regard has not been overrated.

Local estimates of the wool clip of Michigan for the current year make the product 10,500,000 to 11,000,000 pounds, against 14,000,000 to 14,500,000 pounds in 1868. It is believed that not more than fifteen per cent. of the clip remains in the hands of the farmers, it having been marketed earlier than usual.

The annual meeting of the Milk Producers' Association of Massachusetts and New Hampshire, organized for the protection of milk producers, and the regulation of the milk business generally, was held in Boston on the 7th December. An encouraging degree of success was reported, and a proposition made that all farm products be included in the scope of the society's protection. The directors report that from the most reliable information they are satisfied that an amount not less than twenty-five per cent. of the entire quantity of milk sold in Boston is manufactured by the dealers by adulteration.

It is stated that two millions four hundred thousand cans of sweet corn have been put up in Maine the past season. There have been canned in New York city and vicinity this year 1,440,000 cans of tomatoes, and 224,000 cans of pine-apples. The business of canning peaches is almost wholly done in Baltimore, and the quantity put up the past season has been enormous. In Burlington, New Jersey, there are three establishments in which all kinds of fruit, vegetables, pickles, &c., are canned and bottled, giving employment to over five hundred persons, and about one million cans and bottles have been filled during the season. At Bridgeton, New Jersey, there are three canning factories, which expect to reach two millions cans for the year. Notwithstanding these large figures, the demand for these supplies more than keeps pace with the increase of production. The stock of pine-apples is said to be already exhausted, while the stocks of peaches, tomatoes, and corn are much reduced. During the heaviest canning season the demand for coke tin, for the manufacture of cans, was so great that the market price was materially affected thereby.

A New Jersey farmer has experimented as to the depth of sowing wheat, with the following result:

Seed sown to a depth of—	Appeared above ground in—	Number of plants that came up.
Inches.	*Days.*	
½	11	Seven-eighths.
1	12	All.
2	18	Seven-eighths.
3	20	Seven-eighths.
4	21	One-half.
5	22	Three-eighths.
6	23	One-eighth

The cotton crop of Stoddard and Dunkirk Counties, Missouri, for 1869, which was estimated at eight thousand bales, it is now believed will reach twelve thousand bales. The crop of 1859 in these counties was twenty-six thousand bales.

A farmer in New Hampshire, who has been experimenting in shifting seed potatoes, states that he planted in thirty-four hills seventeen potatoes, weighing four and three-fourths pounds, which were raised two hundred miles from his farm; and in the same number of hills he planted the same number and weight of the same variety, which had been planted on his farm for twelve years. The rows were planted side by side, and received the same treatment. The yield was as follows:

	New seed.		Old seed.	
	Number.	*Pounds.*	*Number.*	*Pounds.*
Large marketable potatoes	428	102	350	82
Small potatoes	630	32	780	51
	1058	134	1130	133

The farmer concludes that while a change of seed may not increase the aggregate weight of product, it will pay in the increased value of the crop for market. Of course this single experiment establishes no rule in the matter, yet the result is suggestive and should lead to other experiments.

A western farmer states that he has secured his young apple trees from the depredations of rabbits and mice during the past four years by leaving shocks of corn in the orchard through the winter. He finds that these mischievous creatures will not gnaw the trees when such shelter and feed are at hand.

The assessor's returns for 1867 show the acreage in apple, peach, and pear orchards in Ohio to have been, in round numbers, about 340,000. Apples produced 10,000,000 bushels; peaches, 1,450,000 bushels; pears, 75,000 bushels; total, 11,525,000 bushels. For 1868 the figures are, number of acres, 342,512; apples produced, 11,637,512 bushels; peaches, 599,499 bushels; pears, 66,712 bushels; total, 12,203,736 bushels. Estimating the apples at fifty cents per bushel, the value of this crop for 1868 would amount to nearly six million dollars; the peaches at one dollar and fifty cents, to nearly one million dollars; and the pear crop at one dollar and fifty cents, to nearly one hundred thousand dollars; making an aggregate of over seven millions of dollars. The average product of the orchards of the State in 1867 was only thirty bushels per acre; and for 1868 only thirty-six bushels per acre. Allowance should, of course, be made for the young orchards not yet in bearing. In what are termed the "bearing years" the average product is about fifty bushels per acre; in the alternate years, only twenty; making a general average of thirty-five bushels to the acre. Adding five per cent. as allowance for orchards not yet in bearing, the average would be thirty-six and three-fourths bushels per acre.

Dr. M. M. Phillips, of the Southern Farmer, in a private note to the statistican, thus presents an idea worth millions to the south, which the people of that section are too prone to ignore: "I say better have plenty of food, school-houses, churches, good roads, factories, improved homesteads, and twenty cents per pound for cotton, than gullied and worn farms, no comforts, corn at $1 50, meat at 20 to 25, with cotton at 25 cents. These people are selling cotton now at 23½ cents, and, I venture my ears, they will not have meat in June, and not a dollar. Why not make meat and have plenty, and no cotton? Why make cotton and spend all the money before six months and then no meat? I never did run mad after a big crop. Bread and meat first, then all the cotton profitable."

A writer in Greenville, South Carolina, pronounces the making of sugar from sorghum molasses a complete success, and considers the crop a valuable acquisition, and one that will pay as well if not better than cotton.

The present consumption of wood in the United States is enormous. It is estimated that one hundred and fifty thousand acres of the best timber is cut every year to supply the demand for railway sleepers alone. For railroad buildings, repairs, and cars the annual expenditure in wood is thirty-eight million dollars. In a single year the locomotives in the United States consume fifty-six million dollars worth of wood. There are in the whole country more than four hundred thousand artisans in wood; and, if the value of their labor is one thousand dollars a year, the wood industry of the country represents an amount of nearly five hundred million dollars per annum.

It is stated that the destruction of timber in the Ballarat district of Australia has been accompanied by a corresponding diminution of rain-

fall. In 1863 the fall was 37.27 inches; in 1868 but 17.23. During the first seven months of this year, ordinarily the wettest season, the rain-fall has been but 11.20 inches. In consequence of this the Victorian authorities have appointed an inspector of state forests, whose duty it will be to prevent the wanton destruction of trees, and to establish nurseries for forest trees in various parts of the country.

In illustration of the value of trees in a rainless region, it is stated that following the refilling of the old dried up basin of Lake Timsah with water from the Nile by canal, trees, shrubs, and plants are growing rapidly, as the soil becomes irrigated and the artificial oasis widens. Accompanying this extraordinary transformation of the aspect there has been a corresponding change in the climate. At the present time, Ismalia, during eight months of the year, is probably the healthiest place in Northern Egypt. The mean temperature from June to September is ninety-four degrees Fahrenheit, the four months following seventy-four degrees, and the four winter months forty-five degrees. Until two years ago rain was unknown, but in twelve months ending in April last there were actually fourteen days on which rain fell, and lately there fell a tremendous shower of rain, a phenomenon which the oldest Arab had never previously witnessed. Rain ceases to fall on a country deprived of its forests, or only falls in violent storms. Here we see rain returning to the desert on restoring the trees.

Of the 713,000,000 pounds of coffee produced annually, Brazil furnishes 400,000,000 pounds, or more than half of the entire product; Java, 140,000,000; Ceylon, 40,000,000; St. Domingo, 40,000,000; Cuba and Porto Rico, 25,000,000; Venezuela, 25,000,000; Sumatra, 25,000,000; and all others, including the Mocha, 18,000,000. The United States is the greatest consumer. We use in the United States nearly one-third of all the coffee consumed in the world, using nearly seven times as much as Great Britain, with a population not very far from the same. Germany comes next.

The consumption of tea in the United States amounts to more than thirty million pounds per annum.

METEOROLOGY.

COMPILED IN THE DEPARTMENT OF AGRICULTURE FROM REPORTS MADE BY OBSERVERS FOR THE SMITHSONIAN INSTITUTION.

Table showing the highest and lowest range of the thermometer, (with dates prefixed,) the mean temperature, and amount of rain and melted snow, (in inches and tenths,) for October and November, 1869, at the stations named. Daily observations made at 7 a. m., and 2 and 9 p. m.

States and stations.	October, 1869.						November, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.
MAINE.		°		°	°	*In.*		°		°	°	*In.*
Houlton	2	73	31	15	45.5	10.90	21	56	26.29	11	31.2	1.32
Steuben	1	71	28	20	45.5	6.21	4,6	56	19.26	17	33.6	5.50
Williamsburg	1	72	28	22	42.0	15.10	4	50	26	12	28.8	3.50
W. Waterville	1	77	28	23	47.5	13.87	4	58	26	19	34.0	3.41
Gardiner	1	72	28	25	47.1	12.67	4	56	26	20	34.6	3.10
Lisbon	1	83	28	17	46.4	9.90	4	70	11,26	15	33.4	4.91
Norway	1	77	28	19	44.7	15.10	4	61	26	16	31.9	4.45
Cornish	1	75	28	19	45.2	13.29	4	63	26	16	32.0	4.20
Cornishville	1	74	28	24	47.4	11.89	4	63	16	18	33.2	4.20
Averages					45.7	12.11					37.6	3.84
NEW HAMPSHIRE.												
Stratford	2	75	28, 31	20	41.2	8.49	4	60	26	8	28.6	2.93
Whitefield	2	77	31	17	41.4	9.14	4	59	26	11	29.2	1.04
North Barnstead	1	83	28	25	48.1	13.17			26	9		
Tamworth	1	79	28	19	44.8	13.84	4	69	25, 26	9	31.3	4.15
Concord	1, 2	75	28	24	47.5		4	68	26	15	34.0	
Goffstown Center	7	72	28	26	47.9	15.71	5	63	16	18	35.1	2.84
Averages					45.2	12.07					31.6	2.74
VERMONT.												
Lunenburg	1	72	28	21	42.9	5.08	5	56	26	13	30.5	2.09
North Craftsbury	2	70	31	14	39.4	10.72	4	64	26	6	27.6	1.53
Randolph	1	77	28	21	43.3	10.45	4	59	25, 26	9	30.3	2.04
Woodstock	1	71	31	20	41.9	12.90	4	57	26	7	30.0	2.29
Near St. Albans	2	73	31	22	43.4		4	60	24	8	29.9	
West Charlotte	1	77	28, 31	26	46.5	11.38	5	60	25	19	34.7	1.53
Middlebury	1	68	28	27	45.7	9.28	4	56	25, 26	18	35.0	1.30
Panton	1	74	28	24	45.1	14.05	4	58	25, 26	18	33.9	1.49
Castleton	2	73	28	23	44.4	12.47	4	58	26	15	32.7	1.20
Averages					43.6	10.79					31.6	1.67

Table showing the range of the thermometer, &c., for October and November—Continued.

States and stations.	October, 1869.						November, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.
MASSACHUSETTS.		°		°	°	*In.*		°		°	°	*In.*
Kingston	3	80	28	26	52.2	6.29	5	66	16	22	40.3	1.55
Topsfield	2	76	28	19	46.9	5.22	4	64	16	16	36.2	1.73
Lawrence	1,2	74	28	23	47.0	8.21	4	64	16	14	34.8	2.34
Georgetown							4	63	16	17	36.0	2.85
Milton	1	83	28	24	51.9	4.59	4	72	16	18	41.1	2.02
Cambridge	2	71	31	27	49.2		4	76	16	21	40.1	
North Billerica	1	77	28	22	49.0		5	70	16	16	36.9	
West Newton	1	82	28	28	50.2	6.28	4	70	26	19	37.8	
New Bedford	1	73	28	23	49.5	6.73						
Worcester	1	74	28	25	47.9	9.81	4	69	16	18	33.0	2.43
Mendon	2	78	26, 28	26	47.3	7.50	4	66	16	13	35.4	2.51
Lunenburg	1	77	28	23	47.2	12.50	4	65	16	15	35.6	1.35
Amherst	1,2	71	25,26,28	27	46.7	11.36	4	57	26	17	35.9	2.59
Richmond							4	62	27	14	31.5	4.30
Williams College	2	72	28	23	40.7	10.68	4	60	26	13	34.1	
Hinsdale	1	76	26	21	43.0	12.15						
Averages					47.8	8.44					36.3	2.37
RHODE ISLAND.												
Newport	2	71	28	31	52.1	5.38	5	58	26	26	40.3	2.74
CONNECTICUT.												
Columbia	1	82	26	24	49.6		4	76	25,26	22	38.2	2.43
Middletown	1	81	26	23	47.4	14.51	4	63	26	18	36.9	3.06
Colebrook	1	76	26	21	44.4	12.46	4	67	26	12	33.2	4.03
Brookfield	1	77	26	27	50.6	9.90	20	65	26	25	39.6	5.60
Averages					48.0	12.29					37.0	3.78
NEW YORK.												
Moriches	2	79	21,26	30	53.4	12.86	2	64	19	25	42.0	4.91
South Hartford	1	78	28	27	48.0	13.85	4	64	26	14	35.6	2.50
Fort Edward	2	78	28	26	47.9		4	60	26	17	36.8	0.65
Hudson	1	79	27	29	48.6	14.40	4	65	1	24	38.5	2.72
Garrison's	1	74	26	25	48.6	10.49	4	67	26	22	36.1	4.27
Throg's Neck	1	72	22,23	31	50.1		4	60	25,26	24	40.5	
White Plains	1,2	72	26	26	49.8		4	64	25,26	23	39.7	
Deaf & Dumb Ins.	2	75	31	33	52.0	6.78	17	59	25	27	40.7	3.25
Columbia College	1	72	27,31	32	50.7	6.30	4	60	25,26	26	37.3	3.28
Flatbush	1	72	30	35	53.2	6.77	4	58	25	26	41.5	3.00
Glasco	1,2	72	26	24	46.8	9.15	4	50	26	18	35.8	4.10
Minaville	2	76	27	25	45.9	7.20	4	58	25	7	33.6	2.75
Cooperstown	2	75	27	22	43.4	6.10	5	59	25	6	33.1	1.91
Gouverneur	2	72	27	18	44.7	5.67			25	-3	29.9	3.85
North Hammond	2	78	27	25	48.9	7.24	4	65	25	4	32.9	3.77
Houseville	1,2	74	27	15	41.7	6.97	4	64	25	0	30.6	4.92
Leyden	2	70	27	16	39.9	7.60	4	59	24	13	28.5	4.90
South Trenton	2	71	31	27	43.2	5.63	3	64	25	6	32.0	6.61
Cazenovia	2	73	26,27,31	25	42.8		4	64	25	5	32.3	

Table showing the range of the thermometer, &c., for October and November—Continued.

States and stations.	October, 1869.						November, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.
NEW YORK—Con.		°		°	°			°		°	°	*In.*
Oneida	2	78	27	27	45.7	8.	.....	.....	.....	.....	.....	.....
Depauville	9	77	27	23	43.6	7.10	4	63	25	6	32.4	5.42
Oswego	2	75	31	30	48.6	5.10	4	62	25	15	35.4	2.93
Palermo	1, 2	75	27	23	43.1	5.10	4	60	25	5	32.2	3.10
North Volney	2	79	27	27	46.0	.....	4	65	25	11	34.3	.....
Waterbury	1	74	21, 31	18	41.5	.....	4	66	25	8	34.9	.....
Nichols	1	77	31	22	42.9	.....	4	61	25	6	35.3	.....
Newark Valley	1	76	21	20	45.6	4.10	4	65	25	0	34.1	2.70
Himrods	2	73	26, 30	28	46.6	3.19	4	72	25, 26	21	34.3	4.94
Rochester	2	73	26, 27, 30	30	45.5	2.83	4	66	24	22	36.3	3.58
Little Genesee	1	76	27	18	40.0	2.06	4	66	25	2	30.3	3.00
Suspension Bri'ge	9	78	27	25	46.2	.....	4	68	25	16	36.7	.....
Buffalo	9	80	27	23	45.1	3.30	4	68	25	16	35.2	3.25
Averages	.....	.....	.....	.....	46.2	7.03	.....	.....	.....	.....	35.1	3.60
NEW JERSEY.												
Paterson	2	75	26	26	48.1	8.04	4	61	26	24	38.2	4.00
Newark	1	72	26	29	49.6	6.82	4	60	25	25	38.9	3.09
New Brunswick	.....	.....	.....	.....	.....	.....	30	58	25	24	35.8	3.11
Trenton	1, 2	73	26	32	52.6	6.62	4	59	25	25	41.9	4.22
Rio Grande	2	82	25	26	50.7	6.75	3	62	26	21	40.3	4.13
Moorestown	2	75	26	26	48.7	5.66	4, 30	59	25	23	38.6	3.75
New Germantown	1	76	26	22	47.6	8.62	4	62	25	21	36.4	3.24
Readington	1	84	26	24	49.1	.....	4	60	25	22	40.1	.....
Haddonfield	2	77	26	27	49.1	6.63	30	59	22, 25	24	38.5	3.87
Newfield	2	81	26	22	49.0	.....	4	66	{10, 24 / 25, 28}	{22}	38.3	.....
Greenwich	2	74	26	29	50.6	5.43	4	58	25	26	40.1	3.48
Vineland	2	81	26, 31	27	50.2	6.75	4	63	1	20	39.0	4.42
Averages	.....	.....	.....	.....	49.6	6.81	.....	.....	.....	.....	38.8	3.73
PENNSYLVANIA.												
Nyces	1	71	31	18	41.0	9.70	4	58	19, 25	14	32.3	3.51
Hamlinton	1	78	26	24	46.8	8.06	5	60	24	21	36.7	3.40
Dyberry	1	75	26	17	41.8	6.40	4	67	25	13	33.2	2.86
Fallsington	2	76	26	30	49.7	6.10	4	57	25	25	39.0	3.70
Philadelphia	2	75	31	33	51.6	6.07	30	58	25	30	41.3	3.20
Germantown	7, 9	79	26	26	50.2	.....	30	59	10, 25	24	38.0	.....
Do	.....	.....	.....	.....	.....	.....	.....	.....	25	29	41.7	.....
Horsham	1, 2	74	26	27	50.0	6.49	4	60	25	25	37.6	4.50
Plymouth Meet'g.	2	76	26	27	48.6	7.70	4	60	13, 25, 26	26	38.1	4.06
White Hall	1	80	26	23	48.5	.....	5	58	19	22	37.2	.....
Factoryville	1, 2	74	26	18	42.8	6.97	4	61	25	13	34.1	2.41
Reading	1	71	26	29	49.5	9.49	5	61	25	27	40.2	1.81
Parkersville	2	73	26	29	45.1	5.78	5	60	26	24	38.2	4.05
West Chester	2	74	26	27	47.3	6.99	4	60	25	24	37.3	3.85
Ephrata	1, 2	70	27	30	50.1	8.97	4	66	25	26	40.5	3.19
Mount Joy	12	90	27	28	49.3	.....	.....	.....	.....	.....	.....	.....
Carlisle	1	78	26	26	48.0	0.30	4, 5	60	22, 25	26	38.7	2.70

Table showing the range of the thermometer, &c., for October and November—Continued.

States and stations.	October, 1869.						November, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.
PENN'A—Con'd.		°		°	°	*In.*		°		°	°	*In.*
Fountain Dale	1	69	25, 26	25	45.7	6.47	4	58	25	23	36.2	2.72
Tioga	1	74	26	18	42.4	2.65	4	66	25	10	35.1	2.90
Lewisburg	1	68	26	20	44.1	5.20	4	56	22	21	35.1	2.57
Grampian Hills	1	72	26	12	39.2	1.81	4	66	22, 25	4	28.3	3.27
Johnstown	1	72	26	16	44.0	2.28	4	64	25	11	33.5	4.07
Franklin	1, 9	75	27	17	43.8	1.97	4	67	22	10	33.5	4.52
Connellsville	9	74	25	20	44.3	.....	4	69	25	10	34.7	.....
Brownsville	.....	.....	.....	.....	.....	.....	4	68	25	20	39.1	.....
New Castle	2	70	26	23	44.8	.....	4	61	25	15	34.3	.....
Beaver	2	72	26, 27	26	46.5	0.40	4	65	11, 25	23	37.9	4.20
Canonsburg	1	81	26	18	43.6	2.00	4	69	25	16	36.1	2.35
Averages	.....	.....	.....	.....	46.1	5.61	.....	.....	.....	.....	36.6	3.33
DELAWARE.												
Milford	2	82	26, 27, 31	28	46.5	3.65	4, 30	62	25	23	39.1	3.50
MARYLAND.												
Woodlawn	2	74	26	28	48.5	4.79	5	62	25	24	38.3	4.20
Annapolis	2	77	25	31	52.9	7.19	4, 5, 30	60	12, 22, 25	25	42.8	3.51
St. Inigoes	2	78	31	31	54.0	3.50	5	63	24	25	42.3	2.51
Frederick	.....	.....	.....	.....	.....	.....	5	62	8	29	41.6	1.99
Mt. St. Mary's	1, 5	69	25	27	47.1	6.94	5	59	25	25	37.3	2.93
Averages	.....	.....	.....	.....	50.6	5.61	.....	.....	.....	.....	40.5	3.03
DIST. COLUMBIA.												
Washington	2	69	26, 31	32	50.6	7.33	5, 30	58	8, 12, 22, 25	29	40.7	1.68
VIRGINIA.												
Johnsontown	2	82	27	36	54.8	3.45	4	64	26	27	43.4	2.25
Hampton	2	78	27, 31	34	55.2	3.80	17	64	22	27	43.5	1.20
Zuni Station	1	80	27, 31	33	54.6	4.97	17	66	12	26	42.1	1.42
Bacon's Castle	2	82	27	32	55.6	.....	5, 17	65	12	24	43.3	.....
Comorn	2	77	27, 31	33	52.6	6.98	5	65	8, 22, 25	28	41.7	1.81
Vienna	3	77	31	34	52.2	5.30	.....	.....	.....	.....	.....	.....
Piedmont	.....	.....	.....	.....	.....	.....	5	63	9, 22	23	41.9	1.80
Piedmont Station	.....	.....	.....	.....	.....	.....	5	62	16	22	38.5	1.80
Staunton	1	69	27, 31	30	48.1	3.14	4	63	8	28	40.2	1.06
Lexington	1	78	26	31	52.3	3.88	4	70	12, 22	20	40.8	1.38
Lynchburg	2	69	27	33	53.7	.....	4, 5, 30	61	22	29	43.4	.....
Snowville	2	76	27	22	46.1	3.60	4	68	25	13	35.8	3.37
Near Wytheville	1, 9	68	27	25	47.1	2.70	3	65	25	18	36.3	1.60
Averages	.....	.....	.....	.....	52.0	4.20	.....	.....	.....	.....	40.9	1.77
WEST VIRGINIA.												
Cabell C. H	1, 6	72	24	24	48.2	1.10	4	54	14	33	40.2	2.30
NORTH CAROLINA.												
Kenansville	2	84	28	34	60.3	.....	30	70	8	26	47.2	.....
Goldsboro'	2	88	31	32	59.3	3.35	30	74	26	27	47.4	3.15

Table showing the range of the thermometer, &c., for October and November—Continued.

States and stations.	October, 1869.						November, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.
N. Carol'a—Con.		°		°	°	*In.*		°		°	°	*In.*
Mt. Olive	2	82	31	29	56.5	2.50	30	64	22	24	44.4	2.00
Albemarle	2	78	28	22	51.8	2.75	5	72	1	18	41.0	4.00
Statesville	3	73	28	22	48.8	1.75						
Asheville	3	70	27, 28	24	49.0	1.80	2	64	1, 22	24	40.7	2.30
Do	2, 3	68	27, 28, 31	24	48.5		2	64	1	24	41.4	
Chapel Hill	1	85	31	48	67.9		27	72	25	30	51.4	
Averages					55.3	2.43					44.8	2.86
South Carolina.												
Aiken	4, 12	76	27, 31	36	59.9	1.37						
Gowdeysville	3	78	31	30	59.2	2.37	3	67	22	27	47.5	3.85
Averages					59.6	1.87						
Georgia.												
Atlanta	21	75	27	27	53.1	1.87	4	69	22	26	45.3	6.03
Berne	3	80	28, 31	36	61.2		16	76	21	29	51.1	0.75
Penfield	3	77	31	30	57.8	1.22	5	70	22	30	48.5	4.45
Averages					57.4	1.55					48.3	3.74
Alabama.												
Opelika	3	84	31	35	61.3	0.56	4	76	21	29	52.6	4.19
Carlowville	2	82	31	32	60.2	2.40	4	74	20	32	48.1	5.93
Moulton	2	72	31	31	48.9	3.91	4	64	1, 20	30	46.8	4.83
Greene Springs	1	81	27	32	56.8	2.50	30	73	20	30	50.6	5.10
Near Havana	1, 2	80	27	33	57.5	2.90	30	77	21	28	53.0	4.30
Fish River	2	84					6	76	21	36		3.00
Mobile	2	86	28	36	62.3	2.40	4	75	1, 7	38	55.4	3.22
Averages					57.7	2.45					51.1	4.37
Florida.												
Port Orange	12	85	31	49	70.9		16	81	21	36	60.8	
Jacksonville	22	87	31	44	68.1	4.15	16, 30	78	22	34	58.5	1.65
Pilatka	5, 12, 22	84	28	48	68.8	4.34	16	82	21	36	60.1	2.06
Ocala	11, 21, 28	92	17, 18	40	69.7							
Manatie	1, 2, 3, 4, 5, 9, 10, 11, 12, 19	88	31	56	70.2	0.50						
Chattahoochee	20	85	31	40	66.7	0.90	28	79	20	30		1.80
Averages					70.1	2.47					59.8	1.84
Texas.												
Gilmer	14	86	31	31	59.1	2.18						
Houston							12, 14, 21	84	16, 17	38	65.2	
Blue Branch	27	88	16	40	63.2	1.30						
Lavaca	1, 10	85	23, 24	46	66.0	5.90						
Austin	14	86	24	40	62.1	2.72	4	82	24	36	62.5	1.54
Clinton	4, 21	86	24	44	65.0	1.75	5, 22	86	17	42	66.9	0.25
Palestine	1	86	24	42	64.5	2.00	4, 15	84	24	39	63.5	
Averages					63.4	2.64					64.5	0.90

Table showing the range of the thermometer, &c., for October and November—Continued.

States and stations.	October, 1869.						November, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.
LOUISIANA.												
		°		°	°	*In.*		°		°	°	*In.*
Benton	1	88	31	34	60.3							
MISSISSIPPI.												
Grenada	1	84	27, 31	28	57.3	3.75	4	76	21	27	51.6	5.15
Near Brookhaven	1	83	28	36	60.6	7.39	4	75	1.25	38	59.2	5.40
Natchez	1	81	31	34	58.3	4.62						
Marion C. H.	8	88	28	32	61.1	3.60	25	82	18	30	56.2	5.70
Columbus	1	81	28	30	55.5	2.11	4	71	20	29	49.5	5.65
Averages					58.5	4.28					54.1	5.48
ARKANSAS.												
Helena	11	81	24	30	52.7		29	72	20	27	50.0	
TENNESSEE.												
Elizabethton	8	78	27, 28	22	50.5	3.70	3	72	1, 8, 21 22, 25	22	41.7	2.73
Tusculum Coll'ge	1	75	27	27	52.0	2.70	30	68	8	24	41.8	1.50
Lookout Mount'n	2	77	27	27	53.8		2	72	20	29	45.6	
Austin	8	76	26	24	50.1	4.60	4, 20	70	23	26	43.7	5.17
Clarksville	1	78	27	24	48.2	2.74	4	73	18	28	42.7	3.40
Trenton	1	81	27	24	52.4	2.60	4, 26	70	7	27	47.0	5.50
Knoxville							4	69	1, 25	25	42.3	3.09
Memphis	1	83	27	24	50.4	3.99						
Averages					51.2	3.39					43.5	3.55
KENTUCKY.												
Pine Grove	2, 8	76	27	17	46.8	1.65	4	70	8	18	30.1	4.09
Danville	1	82	27	23	50.5	1.82						
Shelby City	1	75	27	19	46.6		4	70	8, 15	22	40.9	3.20
Louisville	1	74	27	27	49.2	1.79	4	72	15	27	42.5	4.81
Near Louisville	1	79	27	18	47.1	3.16	4	71	11, 15	21	40.7	5.95
Averages					48.0	2.11					40.8	4.51
OHIO.												
Steubenville	2	73	26	25	48.0	0.59	4	59	8, 11	23	37.3	2.71
Painesville	2	71	25, 26	28	44.6	6.09						
Gilmore	2	60	24, 25	26	45.1	2.90						
Milnersville	1, 2	74	25, 26, 27	18	41.9	0.60	4	64	7, 8	14	35.1	3.20
Cleveland	8	74	25	24	44.9	2.60	3	70	24, 25	17	35.0	3.58
Wooster	8	80	25	22	46.3	1.80	3	72	11	17	35.9	2.87
Gallipolis							4	73	2, 8 25, 28	24	38.3	3.26
Kelley's Island	1	74	25	29	47.0	1.93						
Sandusky	8	74	25	24	44.9	2.96	3	67	25	22	36.4	4.26
North Fairfield	1	78	25, 27	24	45.0	1.57	4	64	25	18	35.6	4.52
Gambier	2	68	25	21	42.9	2.49						
Westerville	1	74	27	21	44.3	2.23	4	67	11	19	36.3	4.22
N. Bass Island							3	68	7	23	36.5	4.87
Marion	1, 8	71	27	19	42.3	2.31	4	66	11	17	34.1	4.95
Hillsboro'	1, 8	69	27	20	43.4	1.58	4	65	8	20	36.3	4.43
Toledo	1	77	25	21	44.3	2.81	3	70	24	16	34.8	4.56

Table showing the range of the thermometer, &c., for October and November—Continued.

States and stations.	October, 1869.						November, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.
Ohio—Continued.												
		°		°	°	*In.*		°		°	°	*In.*
Bowling Green	8	78	25	16	44.2	3.95	3	72	24	6	35.5	0.45
Kenton	1	74	27	22	50.4	3.10	4	69	8	19	39.5	3.04
Urbana Univer'y.	1	76	27	20	43.7	1.89	3,4	67	11	16	34.5	4.21
Bethel	8	75	25, 27	20	44.7	2.00	4	69	8, 15	22	36.0	3.88
Jacksonburg	1	76	27	20	45.6	2.34	3	68	15	20	37.3	4.04
Mt. Auburn Inst.	15	89	24	26	54.7	2.90	30	57	28	26	38.2	3.96
Cincinnati	1, 8	78	25	21	45.4	1.80	4	71	28	23	38.6	3.30
Do	1, 2, 8	72	27	26	48.3	2.75	4	70	15	20	41.0	3.16
College Hill	2	76	27	20	46.8	2.63	4	70	15, 28	22	38.5	2.89
Averages					45.6	2.43					36.7	3.92
Michigan.												
Monroe City	1	66	27	21	41.9	0.90	3	68	24	10	38.2	1.90
Alpena	1	64	25	28	43.6	1.30	4	58	7	20	33.5	1.20
State Ag'l College	7	74	27	18	40.8	1.72	3	71	24	4	32.1	1.93
Litchfield	1	72	25, 27	20	39.3	2.78	3	65	24	.....	31.4	3.03
Coldwater	8	72	27	18	41.0	2.69	3	66	24	6	32.8	3.53
Grand Rapids	1	77	24,25,26, 27, 30	26	42.7	.....	3	60	21	17	33.8	.....
Northport	1	76	24	24	42.7	5.08		66	7	22	33.1	3.50
Pleasanton	1, 8	72	31	29	30.7	5.25	.....	.....	.....	.....	.....	.....
Muskegon	1	78	.....	.....	.....	.....	3	68	21	20	38.8	3.45
Otsego	7	72	31	30	44.0	.....	5	60	25	30	40.3	.....
Copper Falls	8	70	25	10	35.3	2.61	3	68	21, 23	13	27.2	2.75
Ontonagon	8	70	23, 24, 25, 26	26	41.8	.....	3	60	24	16	32.8	.....
Averages					41.2	2.80					34.0	2.74
Indiana.												
Aurora	1	78	27	20	45.5	2.36	.....	.....	.....	.....	.....	.....
Vevay		77	27	21	46.5	2.97	4	71	15	21	39.6	4.74
Mount Carmel	1	74	27	16	44.4	2.80	3,4	68	8, 21, 23	24	36.9	4.02
Muncie	1	75	25	15	43.2	1.50	3	66	15, 24	17	35.2	3.90
Laconia	1	76	27	18	46.0	2.32	4	73	15, 18	25	40.2	5.09
Columbia City	1	72	25, 27	18	45.1	1.30	3	65	24	16	37.9	1.88
Knightstown	1	76	25, 27	16	42.9	1.79	3	66	28	18	35.5	6.84
Indianapolis	8	74	26	20	44.0	1.60	.....	.....	.....	.....	.....	.....
Bloomington	1	73	25, 27	18	43.5	1.41	3,4	62	15	20	37.4	4.64
Near La Porte	1, 8	74	25	17	44.0	1.70	3	66	28	12	34.0	4.05
Rensselaer	1	75	25	15	44.0	0.95	3	65	14,25,28	20	33.7	5.20
Merom	1	76	25	17	44.1	1.55	4	66	7, 14	24	37.5	4.97
Kentland	8	79	28	15	44.5	2.30	.....	.....	.....	.....	.....	.....
New Harmony	1	78	27	20	46.8	1.48	2	67	7, 14	27	40.4	5.98
Harveysburg	7, 8	74	24	10	43.6	2.10	3	66	7, 15, 28	20	37.4	3.70
Averages					44.3	1.88					37.1	4.50
Illinois.												
Chicago	1, 8	78	25, 27	25	45.8	1.10	3	63	20	25	36.5	2.42
Near Chicago	1, 8	76	25	16	43.0	.....	3	62	28	16	32.0	.....
Evanston	1	76	25	19	42.6	0.72	3	59	21	18	33.7	4.46

Table showing the range of the thermometer, &c., for October and November—Continued.

States and stations.	October, 1869.						November, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.
ILLINOIS—Cont'd.		°		°	°	*In.*		°		°	°	*In.*
Marengo	1	76	25	13	38.5	0.97	3	61	21	6	30.0	2.39
Mattoon	8	76	24, 25	20	45.5	.....	2	72	7, 14	24	38.5	4.16
Louisville	1	80	24, 25	15	43.9	2.60	2, 4	70	7, 14	20	39.2	6.80
Golconda	5	79	27	10	52.5	0.60	3	68	19	19	43.6	1.10
Belvidere	7	76	25	13	39.8	0.88	2	65	23	-2	29.7	2.50
Sandwich	8	74	25	12	40.8	0.70	2	63	24, 28	8	29.6	3.18
Ottawa	1	83	23	23	49.7	1.18	2	69	20	18	35.1	1.88
Decatur	7, 8	80	24	16	44.2	1.91	2	72	20	18	35.2	4.95
Pana	8	75	24, 27	18	44.7	1.35	2	70	7, 14, 18, 20	22	36.8	4.55
Winnebago	8	74	25	15	38.4	0.83	2	61	24	4	29.3	2.76
Rochelle	7, 8	75	25	13	40.2	.....	3	65	21	6	31.4	.....
Wyanet	8	78	24, 25	17	42.8	0.81	2	68	23	5	33.9	3.88
Tiskilwa	1	76	24	17	41.9	.....	2, 3	58	21, 24	14	34.5	.....
Hennepin	1	78	24, 25	18	45.0	.....	2	67	20	12	35.0	.....
Elmira	8	78	24	13	40.8	0.35	.....	.....	.....	.....	.....	.....
Peoria	8	77	24, 25	18	45.2	1.52	2	63	21	14	35.6	3.13
Springfield	5, 7	78	25	20	45.5	.....	3	69	21	18	37.1	.....
Dubois	8	73	25	13	46.1	1.35	3	72	15, 20	22	39.3	4.60
South Pass	1	73	25	27	46.5	1.87	1	61	24	10	33.0	2.80
Galesburg	5	80	25	16	39.4	1.50	1	61	24	10	33.0	2.80
Manchester	7	79	25	11	44.0	1.67	2	69	20	17	37.8	2.89
Mount Sterling	3, 7	72	26	18	45.7	1.30	6	70	20	12	34.6	4.70
Andalusia	8	75	25	20	43.8	.....	.....	.....	.....	.....	.....	.....
Augusta	8	78	26	16	44.0	2.21	2	65	21	11	35.4	3.43
Warsaw	7	80	26	22	46.1	1.92	5	89	20	16	36.3	3.71
Averages	.....	.....	.....	.....	43.8	1.30	.....	.....	.....	.....	34.9	3.48
WISCONSIN.												
Manitowoc	1	62	24	20	40.8	0.60	3	56	21, 24	12	33.5	3.15
Plymouth	7	67	24	16	38.4	1.20	3	63	24	4	30.0	3.70
Hingham	1	70	25	16	40.2	.....	3	68	24	2	31.3	.....
Milwaukee	8	75	24, 25	20	41.4	0.46	3	62	24	14	32.9	3.35
Appleton	8	69	24	20	43.0	.....	3	60	24	12	33.0	.....
Geneva	8	78	25	12	40.8	0.65	2	64	24	9	31.5	2.75
Waupaca	8	73	26	18	41.5	.....	3	61	21, 28	15	32.5	.....
Embarrass	8	71	21	14	38.8	0.87	3	58	24	5	28.9	2.66
Rocky Run	8	73	25	12	40.3	0.38	2, 3	58	24	1	31.1	2.38
Madison	8	71	21	17	37.7	0.66	3	60	24	12	39.4	1.97
Edgerton	7	78	25	16	42.3	1.10	1, 2, 3	62	24	.....	32.8	2.50
Baraboo	7	74	23, 24, 25	18	39.4	7.00	3	49	22	.....	28.8	9.25
New Lisbon	9	80	26	14	42.5	.....	3	65	24	-4	30.1	.....
Averages	.....	.....	.....	.....	40.6	1.45	.....	.....	.....	.....	31.3	3.52
MINNESOTA.												
Beaver Bay	5, 6	62	23	15	36.9	1.11	.....	.....	.....	.....	.....	.....
Afton	7	73	23	15	34.9	0.92	3	66	21	2	28.3	0.90
St. Paul	6, 7	71	23	17	39.5	0.88	3	65	21	6	30.1	0.75
Minneapolis	7	73	23	12	37.3	0.65	3	67	21	2	27.5	0.68

Table showing the range of the thermometer, &c., for October and November—Continued.

States and stations.	October, 1869.						November, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.
MINNESOTA—Co'd.		°		°	°	*In.*		°		°	°	*In.*
Sibley	6, 7	72	23	11	39.5	0.03	3	68	3	1	27.3	1.01
Koniska	6	64	24	9	36.7	0.50	.....	.....	.....	.....	.....	.....
New Ulm	6, 7	70	23	16	39.7	0.61	3	70	30	1	28.8	0.60
Madelia	6	78	23	13	40.4	0.64	3	70	30	-2	27.9	1.46
White Earth	5, 6	72	22	10	33.9	6.55	.....	.....	.....	.....	.....	.....
Averages	.....	.....	.....	.....	37.7	1.32	.....	.....	.....	.....	28.3	0.90
IOWA.												
Clinton	7	80	27	12	41.6	1.50	.....	.....	.....	.....	.....	.....
Waukon	7	75	26	10	37.7	.....	2	62	21	4	29.2	.....
Dubuque	7, 8	74	26	20	42.3	1.50	3	60	21	8	31.7	1.69
Monticello	7	76	26	16	40.2	1.35	1	66	24	10	30.9	2.65
Bowen's Prairie	7	74	24	14	40.4	2.30	2	62	20	6	29.9	2.15
Muscatine	.....	.....	.....	.....	.....	.....	1, 3	56	21	3	32.6	.....
Fort Madison	8	76	26	16	42.5	2.60	3	67	20, 21	14	35.6	3.31
Guttenberg	7	81	25	8	38.3	.....	2	61	21	-4	29.1	.....
Mount Vernon	7	72	24, 26	16	40.5	.....	2	62	21	5	31.0	.....
Iowa City	7	78	26	16	42.7	2.07	1	70	21	5	32.1	4.49
Independence	7	77	26	12	39.9	1.50	2	66	21	-1	29.9	1.55
Waterloo	7	80	26	14	39.8	.....	2	68	21	.....	30.6	.....
Vinton	7	77	26	18	41.6	1.05	2	69	21	5	31.3	2.50
Rockford	7	71	23	18	41.8	.....	2	63	21	8	32.1	.....
Newton	7	80	26	12	41.2	1.50	2	65	21	-2	31.1	0.77
Algona	7	75	26	10	40.2	.....	3	57	21	3	29.4	.....
West Bend	7	76	26	12	37.8	.....	2	63	21	.....	27.0	.....
Mineral Ridge	7	81	26	13	41.8	2.30	2	65	21	7	31.4	3.90
Boonesboro'	7	75	23	13	40.3	.....	2	63	21	2	30.1	1.30
Fontanelle	7	79	26	13	40.9	0.63	.....	.....	.....	.....	.....	.....
Rolfe	7	84	26	8	41.1	0.30	2	66	21	-5	28.9	2.14
Grant City	.....	.....	.....	.....	.....	.....	2	70	23, 30	6	29.2	1.75
Logan	7	74	23, 24	12	40.5	0.80	1	64	13	4	31.6	1.30
Woodbine	.....	.....	.....	.....	.....	.....	5	72	13	4	34.5	.....
Averages	.....	.....	.....	.....	40.6	1.45	.....	.....	.....	.....	30.9	2.27
MISSOURI.												
St. Louis Univ'y	8	77	26	20	50.0	1.75	2	68	20	25	41.1	4.75
Allenton	7	86	25	14	45.6	2.74	1, 2	74	7, 20	20	39.8	5.66
Hematite	8	79	25	14	48.0	2.45	2	77	7	18	41.1	5.20
Rolla	8	78	26	18	44.8	2.53	2, 4	70	7, 21	21	40.2	5.05
Jefferson City	6, 7	72	25	19	46.0	.....	1	68	21	21	44.0	.....
Keytesville	3, 7	76	26	17	44.0	2.90	.....	.....	.....	.....	.....	.....
Hermitage	7	79	26	32	43.6	2.32	1	74	24	16	39.3	3.25
Bolivar	3	76	25	24	54.9	1.21	1, 4	68	19, 20	23	38.4	6.50
Harrisonville	7, 13	76	26	20	46.1	0.16	1	68	21, 24	22	38.5	1.60
St. Joseph	7	79	23, 26	23	50.8	0.20	4	62	21	18	.....	.....
Oregon	7	85	26	16	45.8	1.21	1	64	21	14	36.5	1.49
Averages	.....	.....	.....	.....	47.2	1.75	.....	.....	.....	.....	40.0	4.19

Table showing the range of the thermometer, &c., for October and November—Continued.

States and stations.	October, 1869.						November, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.
KANSAS.		°		°	°	*In.*		°		°	°	*In.*
Atchison	7	82	26	12	45.7	2.00	3	68	21	18	36.7	2.20
Leavenworth	7	80	26	12	43.8	1.26	2	68	21	16	31.1	2.33
Olathe	7	80	26	12	45.2	2.70	1	69	21	18	36.9	1.70
Paola	7,13	82	26	15	46.9	1.80	2	75	21	18	36.6	2.11
Baxter Spring	7	80	23, 25	24	51.2	2.41	.....	.....	.....	.....	.....	.....
Lawrence	7	77	23	16	43.8	0.69	1	71	20	25	42.4	1.86
Holton	7	82	26	11	45.3	.....	3	66	30	18	36.4	.....
Neosho Falls	13	78	26	12	41.7	1.20	1	70	21	17	37.8	1.10
State Ag'l College	7	79	23	14	44.8	0.43	3	65	19, 30	20	37.3	1.19
Council Grove	7	84	26	24	48.4	1.20	3	71	21	22	41.1	1.80
Crawfordville	13	78	23, 26	20	46.7	0.85	.....	.....	.....	.....	.....	.....
Averages	.....	.....	.....	.....	45.8	1.45	.....	.....	.....	.....	37.4	1.79
NEBRASKA.												
Omaha Mission	1, 3, 5, 6	76	23	20	47.1	1.10	3	70	30	9	32.0	1.50
Elkhorn	7	78	24, 26	16	43.0	.....	2	62	30	11	32.6	.....
De Soto	7	78	23	10	42.7	0.80	1	59	30	9	31.5	1.13
Fontanelle	6	79	23, 24	16	.....	.....	.....	.....	.....	.....	.....	.....
Bellevue	7	80	24	19	45.3	0.40	1	63	13, 30	16	35.2	1.40
Gloudale	7	82	23	10	42.1	0.75	.....	.....	.....	.....	.....	.....
Nebraska City	7	79	23	19	45.6	0.53	2, 4, 5	60	30	15	34.8	2.05
Averages	.....	.....	.....	.....	44.3	0.72	.....	.....	.....	.....	33.4	1.52
UTAH TERRITORY.												
G't Salt Lake City	.....	.....	.....	.....	.....	.....	3	65	2	22	42.8	.....
Coalville	12	84	25	18	46.0	.....	6	65	27	5	30.2	.....
CALIFORNIA.												
Monterey	3	90	28	42	59.5	1.36	6	77	26,27,30	35	55.1	0.72
Watsonville	2	95	13, 14	40	53.6	2.05	4, 19	84	27	31	55.6	0.16
Vacaville	10	90	30	53	66.4	2.57	4	78	30	39	60.6	2.44
Averages	.....	.....	.....	.....	59.8	1.99	.....	.....	.....	.....	57.1	1.11
MONTANA TERR'Y.												
Deer Lodge City	4	79	19	.....	35.7	.....	1, 2	68	15	8	34.1	1.59
WASHINGTON TER.												
Port Angelos	4	59	22, 23	48	51.1	1.30	.....	.....	.....	.....	.....	.....
Walla-Walla	.....	.....	.....	.....	.....	.....	19	62	27	27	45.0	.....

NOTES ON THE WEATHER.

OCTOBER, 1869.

Houlton, Me.—Violent wind and showers 4th; auroras 2d, 25th, 28th, 31st, the last brilliant, showed pink and purple; earthquake, rumbling, then shaking, 22d.

Lisbon, Me.—Fine auroras 2d, 8th, 31st; earthquakes at 5.30 a. m. 22d; first, ten seconds; second, five seconds; motion east to west.

Steuben, Me.—Auroras 1st, 24th, 25th, 27th; earthquake 22d, shook down stoves; lasted a minute; moved to southwest; first snow 26th.

Williamsburg, Me.—Aurora 6th; ground froze 19th, ice 20th; earthquake, west to east, 22d; first snow 29th.

West Waterville, Me.—Auroras 2d, 6th, brilliant 31st; greatest rain known, destructive freshet 3d, 4th; first freeze 20th; earthquake 22d; nearly fifteen inches snow 29th.

Gardiner, Me.—Auroras 1st, 2d, 4th, 6th, 25th, 26th, 27th, 31st; earthquake 22d; October average mean temperature for thirty-three years 47°.021; moisture, average for thirty-three years, 4.52 inches.

Norway, Me.—Auroras 2d, 6th, 31st; heavy rain and freshet 4th; earthquake 22d.

Cornish, Me.—Auroras 2d, 4th 5th, 6th, 25th, 31st; earthquake 22d.

Cornishville, Me.—Greatest rain known 4th; ground frozen 19th; October average mean temperature for forty years 46°.

Antrim, N. H.—Great rain and flood 4th; bright aurora 31st.

Stratford, N. H.—Month cold, wet, snowy; brilliant aurora 31st.

Whitefield, N. H.—Auroras 1st, 2d, 6th, 25th, 31st; heavy rains 3d, 4th; earthquake 22d; snow on seven days.

North Barnstead, N. H.—Very cold, ground frozen two inches.

Tamworth, N. H.—Highest flood known 4th; auroras 6th, 24th; first ice 6th; another flood 11th; earthquake 22d; first snow 27th, but on mountains 19th.

Goffstown Center, N. H.—On 3d, 4.27 inches rain in three hours, flood destructive. The month wet beyond all precedent.

Lunenburg, Vt.—Greatest rain and flood 3d, 4th, 5th; another very great 10th, 11th; earthquake 22d.

Randolph, Vt.—Greatest rain in nineteen years 3d, 4th—five inches in thirty-six hours; another of 3.75 inches 10th, 11th, 12th, 13th; aurora 6th.

Woodstock, Vt.—First snow-flakes 18th; earthquake 22d.

West Charlotte, Vt.—Great rains 3d, 4th; first frost since 7th of June, 7th; crimson auroras 9th, 12th; white 25th, light 31st. Greatest floods, and highest rise in Lake Champlain in forty years.

Panton, Vt.—Auroras 6th, 22d, 25th, 31st; hail 18th, 19th; first frozen ground 26th—an inch of snow 27th.

Castleton, Vt.—Rain all day 3d; windy 4th; frost 6th; ice 25th; auroras 25th, very wide, yellow, green and blue streamers 31st; snow 27th, 28th.

Kingston, Mass.—First killing frost 20th; slight earthquake 22d; first snow 27th; aurora 31st.

Milton, Mass.—Two earthquake shocks, rung door bells, lasted two seconds, 22d; first snow 28th.

North Billerica, Mass.—Slight earthquake 22d; auroras 25th, 31st brilliant; ice 25th, snow 28th.

Worcester, Mass.—Heaviest rain for years 4th; thunder-storm 13th; snow 27th, 28th, 29th; aurora 31st.

Mendon, Mass.—Heavy frost 20th; earthquake of 22d not felt here; bright auroras 25th, 31st.

Lunenburg, Mass.—Damaging floods 3d, 4th, loss in Fitchburg $150,000. October average mean temperature for thirty years 50°.34.

Amherst, Mass.—Rain-gauge overflowed at 5.83 inches, 3d, 4th; auroras 6th, 31st; snow covered ground 27th.

Hinsdale, Mass.—Rains and floods 3d, 4th; snow 27th to 31st; freezing nearly every night 21st to 31st.

Newport, R. I.—Vegetation yet green 7th; first ice 26th; splendid aurora 31st.

Columbia, Ct.—Greatest rain (thirty-three hours) in years 3d, 4th; killing frost 7th; rain on ten days.

Middletown, Ct.—Greatest rain known here 3d, 4th; auroras 6th, 31st brilliant; first hard frost 20th. More rain in October than any month ever observed here.

Colebrook, Ct.—Heavy frost 5th; snow squalls 20th and 26th to 30th.

South Hartford, N. Y.—Month memorable for immense rain-fall of 11.8 inches between 3d and 14th, (5.90 inches in one storm,) and the great damage ensuing. Nine inches snow also fell after the 17th.

Fort Edward, N. Y.—Heavy rains and floods 3d, 4th; first snow 27th.

Garrison's, N. Y.—First hard frost 21st; aurora columnar and diffused 31st.

New York City.—Auroras 6th all night, 25th, 31st; first white frost 20th.

Glasco, N. Y.—Greatest rain in many years 2d, 4th; first frost 7th; aurora 31st.

North Hammond, N. Y.—Hard frost 25th; snow 24th, 28th, 29th, ground covered six inches deep.

Leyden, N. Y.—Snow ten to twelve inches deep from west, on green fields and full-leafed trees 18th, 19th; snowing 20th, 24th, 25th, 26th, 28th, 29th, 30th, three inches deep 31st.

South Trenton, N. Y.—First snow 18th; 8.75 inches in October; hills covered 31st. Acres of corn unhusked. Most unfavorable October for farmers in thirteen years.

Depauville, N. Y.—First snow 25th; greatest October snow-storm in thirty-eight years, 26th to 31st; roots, apples, corn mostly ungathered.

Palermo, N. Y.—Rain-storm 2d to 5th; hard frost 6th, 7th; thunder, hail, rain, 18th, with snow 19th. Coldest October in sixteen years except 1865.

North Volney, N. Y.—First frost, heavy, 6th; aurora 6th; first snow 10th. Snow fell on eight days.

Little Genesee, N. Y.—October closed with a week of winter. Root crops and corn ungathered.

Buffalo, N. Y.—Killing frost 14th; snow-flakes 19th; eight inches snow 25th, 27th. October 5°.2 below the October average for 12 years; the last half stormy, and the last eight days averaged only 1° above freezing.

Newark, N. J.—Heavy rain 3d, 4th; first hard frost 17th; first ice 21st. Mean temperature below all but one of 26 Octobers preceding, and abou[illegible] below their average, (52°.54;) the warmest, 1866, 56°.62; the [illegible], 1859, 48°.61. Only one exceeds it in rain.

[illegible]n, *N. J.*—First ice 7th; first snow, in squalls, 28th.

Moorestown, N. J.—First frost 20th; first ice 21st.

New Germantown, N. J.—Destructive freshet 4th; auroras 25th, 31st; hail 28th; snow 30th.

Newfield, N. J.—Wild geese 1st; heavy rain 3d; auroras 6th, 25th; ice 21st; snow squalls 30th. A cool, wet month.

Greenwich, N. J.—Pouring rains 3d, 4th; first killing frost 21st; ice 26th; frozen ground 27th; bright, flashing, red and blue aurora 31st.

Vineland, N. J.—First killing frost 21st; snow-flakes 30th.

Nyces, Pa.—Cold month; ground frozen two inches deep.

Hamlinton, Pa.—Destructive freshet 3d, 4th; wild geese 25th; auroras 25th, 31st.

Dyberry, Pa.—Heaviest rain for years 3d, 4th; hail 14th, 19th; first snows 26th to 30th, with ground frozen.

Fallsington, Pa.—Great rain 3d, 4th; killing frost 21st; first ice 26th. A cold, wet October.

Philadelphia, Pa.—Floods in Schuylkill and Delaware 3d, 4th; first ice 26th; first snow 20th.

Plymouth Meeting, Pa.—On 3d and 4th six inches rain fell in twenty-four hours, and four persons and much property destroyed by flood; Schuylkill River higher than in January, 1839; coldest October night in several years 27th; ice every morning after the 24th.

White Hall, Pa.—Continuous rain 3d, 4th; Lehigh River within a few feet of the great flood of 1862.

Factoryville, Pa.—Splendid aurora, red, white, and green streamers, 31st. Month 4°.75 colder than five preceding Octobers, and very wet.

Reading, Pa.—Heavy rain 3d, 4th; Schuylkill up to second story of houses at canal. Month closed cold.

Parkersville, Pa.—Fine rain, heavier p. m., 3d; very heavy night; showers 4th, great flood; faint auroras 6th, 25th.

West Chester, Pa.—Very heavy rains 2d, 3d, 4th; hail 28th; snow 28th, 30th.

Ephrata, Pa.—Rain-fall of eight inches 2d, 3d. Ice an inch thick this month.

Carlisle, Pa.—Light rain 2d, heavy 3d, 4th; first severe frost 21st. Month cold; thermometer as low as 26°.

Fountain Dale, Pa.—Greatest rain (4.58 inches) in two years, 2d, 3d, 4th; light frost 7th; killing 18th, 21st; aurora 31st.

Tioga, Pa.—Thunder 14th; snow on hills 19th; wild geese 25th; two inches snow 28th; brilliant aurora 31st. River frozen over for first time in October.

Grampian Hills, Pa.—Month cool, frosts heavy in latter part; much cloudy but little rain; no storms or high winds.

Johnstown, Pa.—Conemaugh River remains low.

Franklin, Pa.—Moderate rains 2d, 3d, and slight 4th; first frost 13th, heavy 17th; snow-flakes 19th; snow 26th; aurora 21st.

Connellsville, Pa.—After 24th cold, ground and apples on trees frozen.

New Castle, Pa.—First hard frost 13th; first snow 19th; snow, nearly every day, 23d to 29th. October 7° to 10° lower than for eleven years.

Beaver, Pa.—First frost 13th; thunder-shower 14th; snow-flakes 19th; coldest October night known here 26th; snow, apples frozen on trees 27th; beautiful aurora 31st.

Milford, Del.—Rainy day and night 3d; first frost 7th; ice 25th; wild geese 26th; brilliant aurora 31st.

Woodlawn, Md.—First ice 17th; snow-flakes 28th; squalls 30th; aurora 31st. Month 14° below October average of four years.

Annapolis, Md.—Thunder-storm 12th; first hard frost 25th.

Emmittsburg, Md.—Heaviest rain for years 2d to 5th; thunder and lightning 12th; slight aurora 31st.

Washington, D. C.—On 3d and 4th 6.55 inches of rain fell.

Johnsontown, Va.—Slight showers 2d, 3d, rain all night 4th; first frost 17th; ice 27th, 28th; first snow 30th; brilliant aurora, blue arch and five red beams, 31st.

Hampton, Va.—First frost 18th; faint aurora 31st.

Zuni Station, Va.—Killing frosts 16th, 17th; ground frozen 27th, 28th; snow sprinkle 30th; brilliant aurora 31st.

Bacon's Castle, Va.—Showers 3d; ice 14th; red aurora 18th; hail and snow 30th. From frost to frost, April 6th to October 14th, one hundred and eighty-eight days. Last part of October cold and windy.

Comorn, Va.—Rain 6 a. m. till midnight, 5.055 inches 3d; hail 12th; first killing frost 25th; aurora 31st.

Vienna, Va.—Hard frost 25th; ground frozen 26th; slight snow 28th; aurora 31st.

Lexington, Va.—First killing frost 14th; aurora 31st.

Lynchburg, Va.—Rain all day 2d, 3d; first killing frosts 14th, 16th, 17th; first ice 27th.

Snowville, Va.—Month drier and colder than in 1867 and 1868.

Wytheville, Va.—First snow, light, 20th. A cold month.

Mt. Olive, N. C.—First frost 14th; ice 27th, 28th, 30th, 31st.

Albemarle, N. C.—First killing frost 28th; wild geese 26th. Springs still failing in every direction.

Aiken, S. C.—Lightning and thunder 12th; first frost 14th.

Gowdeysville, S. C.—Frosts 16th, 17th; ice 27th, 28th, 31st. Month cold, but favorable for gathering crops.

Atlanta, Ga.—First white frosts 16th, 17th, heavy 27th, 28th.

Berne, Ga.—Light frosts 16th, 28th, 30th, 31st.

Columbus, Ga.—An aerolite fell about 11 a. m., on 6th, "with an explosion that was heard for thirty miles around, and the several fragments fell in different parts of the surrounding country. The fragment submitted to us must, of course, have been broken with sharp edges, and these were rounded by combustion during its fall. This indicates a considerable height for the region of its explosion."

Opelika, Ala.—First frost 11th, killing 27th; ice 27th, 31st.

Moulton, Ala.—First frost 13th; ice 25th, 28th, 31st. Month pleasant, swallows gone, chestnuts ripe, leaves falling.

Greene Springs, Ala.—First white frost 16th, first ice 27th.

Fish River, Ala.—First killing frosts 28th, 29th, 30th.

Jacksonville, Fla.—Barometer very low 3d, 4th; frost reported 28th. Month dry and pleasant. October average temperature for twenty-four years, 70°.7, and rain-fall 3.575 inches.

Ocala, Fla.—Drought of fifteen hot days ended on 23d by a rain that refreshed man, beast, and vegetation.

Gilmer, Texas.—Geese 1st, 8th, cranes 21st; first frost 16th, first ice 24th. Month unusually cool.

Blue Branch, Texas.—Month very cool, clear, dry; favorable for picking cotton, which is nearly done.

Lavaca, Texas.—Rain, norther, wild geese 2d; pleasant to 7th; norther 23d; raw and cold to 27th.

Austin, Texas.—Norther, thunder, lightning, 1st; wild geese 14th; norther, thunder, lightning, rain, hail large and damaging, 22d.

Palestine, Texas.—First frosts, light 16th, medium 24th, 31st.

Grenada, Miss.—First killing frost, 16th, earliest in thirteen years, except in 1856 and 1858. Coldest October in fourteen years; cotton much injured by frosts.

Brookhaven, Miss.—Dry and pleasant 1st to 8th; frosts, light 10th, killing 16th, 17th; heaviest rain this year 21st, 22d, damaged cotton,

roads, &c.; rainy and cool 25th to 29th; wild geese, snow-birds, robins, 23d to 31st.

Natchez, Miss.—Frosts, light 16th, heavy 30th; thunder, with shower, 22d, with deluge, 23d.

Marion, Miss.—First frosts 16th, 17th; ice 28th. Month favorable, sufficient rain and at right time, clear skies and little wind.

Columbus, Miss.—First frosts 16th, killing, with skim ice, 27th. In twenty-five years had ice in only four Octobers; this the coldest known, nearly 7° below the average of fifteen Octobers past.

Elizabethton, Tenn.—First severe frost 17th; ground slightly frozen 27th, 28th.

Austin, Tenn.—A delightful month, crops housed.

Clarksville, Tenn.—First killing frost, 16th; heavy hoar frosts with ice, 24th, 25th, 26th, 27th.

Memphis, Tenn.—An October of low temperature; frost on ten and ice on five mornings.

Pine Grove, Ky.—Killing frost 6th; first ice 13th; snow-flakes 19th. Month quite dry but 11° lower temperature than in thirteen years.

Shelby City, Ky.—Month dry, pleasant, but very cool.

Steubenville, Ohio.—Frost 13th; light snows 19th, 27th; brilliant aurora 31st.

Painesville, Ohio.—First frost 21st; hardest freeze known in October 25th, 26th.

Gilmore, Ohio.—Frost 5th; ground frozen 23d; auroras 25th, 31st.

Cleveland, Ohio.—Snow 19th; first frost 21st; ground frozen 25th; aurora 31st.

Wooster, Ohio.—Snow-storms 19th, 30th; auroras 25th, 31st.

Kelley's Island, Ohio.—First frost, light 21st; ice 24th. Month 6.16° colder than October average of ten years; westerly winds nearly all the month.

North Fairfield, Ohio.—Misty rain 4th; ice 21st, 25th, one and a half inches thick; auroras, bright 25th, ordinary 31st.

Gambier, Ohio.—First snow 19th; bright auroras 25th, 31st.

Westerville, Ohio.—Frosty 17th; snow squall 19th; bright aurora 31st.

Marion, Ohio.—Frost and ice 13th, 16th; snow-flakes 19th; ground frozen 24th; slight aurora 31st.

Hillsboro, Ohio.—Frost 6th. Unusually cold October.

Toledo, Ohio.—Rain all day 2d, 4th; frost and ice 3d; ground frozen 15th, 16th; first snow flurry 19th, three inches 23d; ground frozen to bear teams 25th, 26th, 27th; auroras 25th, 31st.

Bowling Green, Ohio.—On 27th about three a. m., a meteor like headlight of a locomotive, and a stream of fire, lit up the earth for half a minute, and after a few seconds exploded with a rumbling noise that shook buildings. Seen or heard at Berwick, Carey, Kenton, Finley, Ottawa, Forest, &c.

Kenton, Ohio.—At 2.46 a. m., on 27th, heavens lit as with sunlight, and in ten to eleven seconds a report as of a cannon, or quick, sharp clap of thunder, followed by rumbling, passing to northeast, shook houses and vibrated the earth like an earthquake. Report was heard and light seen sixty miles south, and twenty miles west, east, and north. Supposed to be the explosion of a very large meteor.

Urbana, Ohio.—First hard freeze 24th; white aurora 31st. Month 8° below October average of seventeen years, and 5° below coldest October in that time.

Bethel, Ohio.—Thunder-storm 4th; frosts, smart 6th, hard 13th, very hard 16th; three inches snow 19th.

Jacksonburg, Ohio.—Killing frost 13th; auroras, faint 25th, bright 31st.

Alpena, Mich.—First frost 13th; ground frozen 17th; snow and hail 19th; skating 26th; auroras 25th, 31st.

Lansing, Mich.—Snow on ground 22d to 29th; coldest October days ever known here, 21st to 30th.

Litchfield, Mich.—Foliage green 22d; then 8.5 inches snow 22d, 23d. All apples not shaken from trees into the snow frozen.

Cold Water, Mich.—Ice 12th; rain, then eight inches snow 22d, hung on trees till 24th, and broke some down.

Grand Rapids, Mich.—Frosts light 6th; killing 20th; over 3.5 inches snow on ground 22d to 27th. Coldest October since 1842.

Northport, Mich.—Light snow 12th; fine hail 15th; thunder and lightning 16th; 14.5 inches snow 22d, 23d, 24th, with flowers in bloom and vegetation green as in summer. Total snow-fall 23.25 inches in October.

Muskegon, Mich.—Little rain, one inch snow, but windy, raw and cold—one of the unpleasantest Octobers ever known here.

Otsego, Mich.—The last week in October very cold.

Copper Falls, Mich.—Snow fell early and laid more than half the month.

Ontonagon, Mich.—Snow squalls 11th and 17th; snows, two inches 23d; three inches 24th; four inches 26th.

Vevay, Ind.—Frost 13th; severe frost 18th; rain, then sleet, then snow, 19th; broke down trees and froze plants.

Mt. Carmel, Ind.—Killing frost 13th; ground frozen 16th; unusual snow 19th; and to 28th coldest ever known in October.

Muncie, Ind.—First snow 25th; pale aurora 31st. From 22d to 27th colder than November, 1868. October mean 7.2° colder than in 1868.

Columbia City, Ind.—Damp snow, 5.5 inches, 22d, 23d, broke down trees, &c. Green forests in savage winter!

Knightstown, Ind.—Ice 13th, 16th; snows 18th, 19th, 22d.

Indianapolis, Ind.—Lightning 2d; misty 3d; hard frosts 13th, 16th; first snow 19th; bright aurora 31st.

La Porte, Ind.—Frost 3d; first ice 13th; frost, ice, 16th.

Rensselaer, Ind.—Thunder-showers 16th; hard frost 11th; ground frozen 13th; snow-birds 14th; snow flurry 19th; deep snow 23d.

Kentland, Ind.—Frost, ice, 13th; three inches snow 22d.

New Harmony, Ind.—Heavy snow 19th. Coldest October in seventeen years.

Harveysburg, Ind.—Snow 21st, 26th. Broke down trees.

Marengo, Ill.—Thunder-shower 3d; frost 5th; ice 11th; first snow 25th. Coldest October on my record—5.61° below average of nine years.

Mattoon, Ill.—Sleet, rain, 5.5 inches snow 22d, 23d.

Louisville, Ill.—Frosts 4th; heavy 10th; four inches snow 19th. An unprecedented cold October.

Golconda, Ill.—First frost 19th; ice all day 26th.

Belvidere, Ill.—Severest October since settlement, 1835.

Ottowa, Ill.—First ice 12th; snow-storm 22d, 30th.

Wapello, Ill.—Warm and pleasant till first severe frost 15th; after that coldest October ever known here—two inches snow, little rain.

Winnebago, Ill.—Heavy frost 5th; first snow 25th. Month 9.65° below October average of eleven years.

Wyanet, Ill.—Frost and ice on, and nearly every morning after, 10th. A cold October.

Tiskilwa, Ill.—Apples frozen solid 20th; first snow 22d. Hard freezing nights last half of October.

Hennepin, Ill.—Katy-dids and crickets heard till 19th; then frost and ice plenty; snow 22d; then cold to 28th. Such an October unknown in forty years.

Springfield, Ill.—Heavy first snow 18th; then very cold to 28th. Then Indian summer till close.

Dubois, Ill.—First killing frost 13th; cranes and brant going south 14th; rain and snow 23d; then ground frozen till 27th; then Indian summer till close.

South Pass, Ill.—Ice 24th, (no white frost yet;) snow sprinkles 24th, 27th, 29th. Wild geese 26th; brilliant aurora 31st.

Manchester, Ill.—Hard frosts 4th, 5th, 16th, 23d—three inches of snow 23d.

Mt. Sterling, Ill.—Thin ice 14th; first snow 19th; ground frozen 20th.

Augusta, Ill.—First killing frosts 11th, 14th; strong ice 19th. Coldest October since 1833 (except 1863, with mean temperature 43.24°) by about 10°.

Manitowoc, Wis.—Thunder-storm 10th; ice 13th; boys skating 24th; aurora 31st. Coldest October in eighteen years—in 1863, 42.78°; in 1854, 52.33°; average of 18th, 47.03°.

Plymouth, Wis.—First snow 25th, on green woods and orchards. Weather dry; month 7° colder than October average of five years.

Milwaukee, Wis.—Frosts 10th, 11th; ice 12th, 13th; aurora 31st.

Embarrass, Wis.—Auroras, faint 2d; bright 31st; ice 11th; ground froze hard 13th; wild geese 18th. Coldest October in fifteen years.

Rocky Run, Wis.—Auroras 2d, 4th, 24th, 31st; heavy frost 5th; snow 24th, 29th. Month 5° colder than any October in ten years.

Baraboo, Wis.—First frozen ground 5th. Coldest October ever known here—many potatoes frozen.

St. Paul, Min.—Only one colder October (1863) in forty years, and then cold more equable; and only four months in that time had less rain.

Minneapolis, Min.—First snow 24th; first ice in river 23d.

New Ulm, Minn.—Frost 2d; ice 12th; ice in river 26th.

White Earth, Minn.—Lakes close 22d; auroras 30th, 31st brilliant.

Clinton, Iowa.—Frost 2d; snow-squall 24th. Month dry, windy, and last part cold.

Waukon, Iowa.—Ground froze five inches at close of month.

Monticello, Iowa.—Pleasant month; two rainy days, nine cloudless.

Iowa City, Iowa.—Frost, ice, 13th. Month 6.86° below October average mean temperature of thirty-one years, (49.58°.)

Independence, Iowa.—Frost, ice, 5th; wild geese 9th; ground frozen 13th; then cold to 31st.

Waterloo, Iowa.—"An awful 'squaw winter,'" (ground frozen two inches,) "and no 'Indian summer.'"

Rockford, Iowa.—After 10th steady cold, but good weather to dry stacks.

Algona, Iowa.—Ice 12th; snow 24th. Coldest October known here.

Near Algona.—Frost 2d, and every night after 15th. Month dry, and 7.20° colder than last October.

Boonesboro, Iowa.—Coldest October, except 1863, in fourteen years; eighteen clear, seven smoky, three rainy or snowy days; ground frozen solid one week.

Fontanelle, Iowa.—Coldest October on record; last half average only 1.50° above freezing point.

St. Louis, Mo.—First frost 13th; first snows 19th, 22d. 2.75 inches.

Hematite, Mo.—Rain, sleet, hail, 3.25 inches snow, 19th; rain, an inch snow, 22d; faint purple aurora 31st. Never knew so cold an October.

Rolla, Mo.—Frosts 3d; killing 5th; ice 16th; frozen rain, snow, wild geese, 19th. Month steady cold, nearly 11° colder than in 1868.

Hermitage, Mo.—Sleet, snow, 19th to 22d. Coldest October remembered; 14.4° below 1867, and 13.1° below 1868.

Bolivar, Mo.—Ice 14th, 15th; snow 19th, 22d. Month so cold as to beat "oldest inhabitant."

Harrisonville, Mo.—Light frosts 2d, 9th; ice 15th, no damage,

St. Joseph, Mo.—Snow two inches 19th; an inch 21st, 22d; ice 23d.

Oregon, Mo.—Smoky 14th to 18th; first snows 19th, all day 22d; prairie fires 25th to 31st.

Atchison, Kans.—Month 7.3° colder than October average for six years.

Leavenworth, Kans.—Frosts 2d; hard 5th; snow 19th; ice 20th. Coldest October on record.

Paola, Kans.—Very cold nights 8th to 27th.

Baxter Springs, Kans.—First frosts 3d; killing 9th; sleet 22d; slight snow, first, 23d.

Lawrence, Kans.—First snow 1.25 inches 19th. Coldest October recorded; clearest and driest month since last February.

Neosho Falls, Kans.—First killing frost 15th; round snow 19th.

Council Grove, Kans.—Frosts 5th; killing 8th, 9th; first snow 19th.

Crawfordsville, Kans.—First killing frost 15th; first snow 22d. Month favorable for sowing wheat.

Elkhorn, Nebr.—Ground frozen 9th; snow 19th. Coldest October but one in twelve years.

Omaha Mission, Nebr.—Pleasant month; no snows; two showers; crops good.

Fontanelle, Nebr.—Air clear, one rain; ground frozen four inches latter part of month. Coldest October known here.

Bellevue, Nebr.—First ice 15th. Month 7.1° colder than last year.

Glendale, Nebr.—First snow 22d. Month 12° colder than October average of two years; would have been a pleasant November.

Nebraska City, Nebr.—Wild geese 1st; first killing frost 15th. Month very dry, and latter part very cold.

Harrisburg, Utah.—Month dry, pleasant; late light frosts.

Coalville, Utah.—Wild geese 12th; four inches snow 18th. Coldest October in four years; twenty-one cloudless days.

Watsonville, Cal.—Wild geese 2d; slight earthquake and first rain 19th. A very pleasant October.

Vacaville, Cal.—Grass springing thickly 23d; no frost yet.

Deer Lodge City, Mon. Ter.—Larks singing 11th to 15th. Snow-squalls on the mountains, but no rain nor snow in the valley. Magnificent weather here; no earthquakes, tornadoes, thunder, hail, or auroras known here; stock fat in spite of drought of past year, and people all healthy.

November, 1869.

W. Waterville, Me.—Seventh day of sleighing, 5th. Month 1.18° below average of five years, and had not one entirely clear day.

Gardiner, Me.—Aurora 7th, 8th, 9th, 10th. Average mean heat of November for thirty-three years, 35.72°; this, 34.49°; average moisture for thirty-three years, 4.39 inches; this November, 3.09 inches.

Norway, Me.—Violent gale and rain 20th; faint aurora 25th. Month cloudy, but few storms. Ground froze four inches.

Cornishville, Me.—Aurora 8th. November average heat for forty years, 33.50°; this year, mean 33.23°.

Whitefield, N. H.—Aurora flecks, 26th. Snow or rain eighteen days.

Shelburne N. H.—Snow-drifts three feet high 7th; sleighing 18th, 19th.

Tamworth, N. H.—Ground bare till 17th; then covered with snow till 20th; heard frogs peeping 21st.

N. Craftsbury, Vt.—Skating on small ponds 16th. Month very cloudy, but not stormy.

Randolph, Vt.—Great rain-storm and high wind 20th. Month uniformly cold. But little snow laid; some skating.

West Charlotte, Vt.—Distant thunder 1st; Indian summer 1st to 7th—variable to 30th.

Middlebury, Vt.—Great gale 20th, very destructive.

Castleton, Vt.—Severest and most destructive gale I ever felt, 20th.

Georgetown, Mass.—First snow-fall 7th; wild geese 15th; heavy gale stripped the trees 20th; streams open, no frost 30th.

Worcester, Mass.—Auroras 12th, 25th.

Lunenburg, Mass.—The gale, 20th, was very destructive twenty miles north and south. No snow or frozen ground 30th. November average temperature for thirty years, 40.19°.

Amherst, Mass.—Ground white with snow 15th; hail 17th.

Moriches, N. Y.—Auroral lights 10th, 25th.

South Hartford, N. Y.—The great gale 20th very destructive.

Garrison's, N. Y.—Storm 17th, no damage here; aurora 25th; rain 29th to close. Month unusually cold.

New York City.—Meteors of various colors, some quite large, 1st; aurora 15th.

Minaville, N. Y.—On six days 12.35 inches snow; rain on 20th only.

N. Hammond, N. Y.—Ground frozen all month. Many vessels and lives lost in gale of 18th.

Leyden, N. Y.—Sleighing 12th. Month cold, cloudy, wet and snowy; 22.75 inches snow in November.

South Trenton, N. Y.—Destructive east gale 16th; no snow on ground 30th; 20.61 inches snow this month.

Cazenovia, N. Y.—Snow-fall in November, 36.5 inches.

Depauville, N. Y.—Auroras 8th, 25th; splendid arborescent frost 25th; snow gone, frost out of ground, 30th. Very little fall plowing done; cattle foddered six weeks earlier than usual.

Palermo, N. Y.—Most terrific wind and snow-storm ever known here in November, 8th, 9th. Coldest November and (except 1868) autumn in sixteen years.

North Volney, N. Y.—Greatest November snow 6th to 9th, and badly drifted. Fall 3.17° warmer than in 1868. Thirteen days snow and nine days rain this month.

Nichols, N. Y.—Snow on twelve, and rain on five days, in November.

Little Genesee, N. Y.—A wintry month; two weeks sleighing; could not dig potatoes; cattle foddered a month earlier than common.

Buffalo, N. Y.—Indian summer till 5th, ended by a gale with hail and rain; severest storm of the season 17th; destroyed many lives and vessels. Month cloudy; 5° below November average of eleven years. Many undug potatoes under the snow.

Trenton, N. J.—Only two Novembers in twenty-six had as low mean temperature; the twenty-six averaged 43.094°—this 4.378° lower; warmest, in 1849, 49.66°; coldest, in 1843, 38.16°. Heavy gales 16th, 17th, 19th, and 20th.

Newfield, N. J.—First lying snow 14th. Cold, unpleasant month; the fall 4° below the average.

Greenwich, N. J.—Tomatoes from July 15th till 2d inst. Ice all day 25th. Month cold, stormy, and 5° below average of five years; but little snow here.

Dyberry, Pa.—First inch of snow 7th; ground frozen nearly ever since October 25th; snow all the month, but only 5.5 inches in all.

Fallsington, Pa.—Severe storm 17th. Coldest November since 1858.

Plymouth Meeting, Pa.—Wild geese 11th; snows, 2.5 inches 14th, 2.1 inches 16th; violent rain-storms 17th, 20th. Month unusually cold; ice every morning except five since October 24th.

Factoryville, Pa.—Mean fall temperature of 1868, 48.86°; of 1869, 45.73°. A cloudy month; 4° colder than November average of five years.

Carlisle, Pa.—First snow-flakes 7th; first snow 13th, 14th; first sleighing 16th.

Fountain Dale, Pa.—Ground white with snow 7th, 23d. Month 6° colder than in 1868, but fine—less rain and snow. Plowing all month.

Tioga, Pa.—Like October, cold, stormy; more like December than November.

Grampian Hills, Pa.—Snow covered ground from 7th to 30th, when snow was four inches deep, and roads icy.

Franklin, Pa.—Snow 16th; rain on eight days; snow-fall, 13.25 inches.

New Castle, Pa.—Month 10° colder than in eleven years; snow-fall 16 inches; no Indian summer.

Beaver, Pa.—Very high wind 17th. Month cold, weather rough.

Canonsburg, Pa.—Thunder 1st; high wind 16th, 17th.

Woodlawn, Md.—Stormy month; twenty days at and below 32°; 5.5° below 1868, and 9.5° below the average of the four preceding Novembers.

Emmittsburg, Md.—Some snow 7th; first snow-storm 13th; strong gale and some rain 30th.

Hampton, Va.—Violent gale from south 17th; terrific wind, storm, lightning, and thunder, 19th. Pleasant but cold month; nineteen frosts.

Zuni Station, Va.—Only three clear, sunny days; yet pleasant month, with much frost.

Bacon's Castle, Va.—Month calm, cold; frequent showers.

Snowville, Va.—Snow-fall 7.7 inches. Temperature 35°; in 1867, 42°; 1868, 40°.

Albemarle, N. C.—First snow, with wind, sleet, 7th; rain on nine days, but springs and wells not affected; no thunder.

Evergreen, S. C.—Ground kept too wet by frequent freezing for sowing wheat.

Gowdeysville, S. C.—High wind, some rain, 16th; ground frozen an inch, 20th; frost and ice 23d. Month 3.7° colder than in 1868; more frost and ice than usual.

Berne, Ga.—Light frosts 1st, 2d; but peaches in blossom for two weeks not hurt. Brilliant falling stars at 1 to 2 a. m. on 13th; thunder and lightning 16th; heavy frost 20th; peaches yet uninjured.

Moulton, Ala.—Windy 16th to 22d. Month damp but not cold; only one-eighth inch of ice formed.

Mobile, Ala.—Aurora 3d; man killed by hurricane 17th; heavy white frost 20th.

Jacksonville, Fla.—Temperature about 3° below average; only tenderest vegetables frosted.

Palatka, Fla.—First frosts 8th, 21st, 22d. No thunder, little cloudiness, air hazy all month, like your Indian summer.

Chattahoochie, Fla.—Violent wind and rain-storm 16th.

Austin, Texas.—Smoky north wind from 9th to 13th; partial frost 17th.

Marion, Miss.—Frosts 7th, 25th; thunder-storms 9th, 19th; fearful wind-storm 16th.

Elizabethton, Tenn.—First snow 7th. Very cloudy, little rain.

Clarksville, Tenn.—Gales and torrent of rain, heaviest storms for some time, 16th, 17th. Many storms of wind, rain, sleet, snow.

Knoxville, Tenn.—Flocks of wild pigeons going southeast 29th.

Pine Grove, Ky.—Heavy gale 16th; another, rain all day, 30th. Month cloudy; rain or snow on nineteen days.

Shelby City, Ky.—Small bats 29th; rain and wind storm 30th. Month 6° below average of ten years.

Steubenville, Ohio.—Thunder, rain, hail 1st; heavy wind and rain 5th, 17th. Frost on seven mornings.

Sandusky, Ohio.—Thunder showers 4th; snow 6th; upper bay frozen over 23d.

North Fairfield, Ohio.—Snow, then rain with strong southeast wind 16th. Snow-fall twenty-one inches in November.

Westerville, Ohio.—Thermometer 17° at 6 a. m. 8th. Stormy month.

North Bass Island, Ohio.—Lightning, thunder, hail 4th; terrific gale 16th, 17th. Ten inches snow on six days.

Toledo, Ohio.—Severe rain and snow storm from east 16th; prevailed from Rocky Mountains to the Atlantic, destroying $500,000 shipping, &c.; river first frozen over 22d, and greatest depth of snow known in November; fine sleighing 24th; dense fog 24th to 26th. The month 6° below average of many years.

Kenton, Ohio.—Gale from southwest, snow from southeast, then fine rain 17th.

Urbana, Ohio.—Snow, hail, sleet, rain, snow, rain in succession 22d; after thirteen days' stay, snow gone 26th. Mean temperature 5.40° below November average of eighteen years, and lower than any of the eighteen. Snow (11.55 inches) quadruple the average.

Jacksonburg, Ohio.—Snow storms on eight days, with rain and hail 16th, 27th.

Lansing, Mich.—High wind (barometer 27.96 inches) 16th, 17th.

Litchfield, Mich.—At 11 p. m. on 3d, no aurora, but so light that distant objects were quite visible, thunder and brilliant lightning in south; six inches snow in twelve hours, followed by torrents of rain 16th, which continued in showers, and with snow, till 20th; twenty-eight inches snow in woods 22d, most in any winter except 1842 and 1843; snow settled and wheeling good 30th.

Cold Water, Mich.—Snow in woods eighteen inches 23d; ground not frozen 26th; snow nearly gone 30th.

Grand Rapids, Mich.—Thunder and lightning 29th. A cold, cloudy, stormy month; nine days sleighing from 16th to 25th; farmers caught with fall work only half done.

Muskegon, Mich.—Snow on seven days from 16th, between twenty-five and thirty inches fell; nearly all gone 30th.

Otsego, Mich.—Snow on ground all month; never knew so early a winter; much corn and potatoes ungathered.

Vevay, Ind.—Violent wind and rain from southwest 16th, 17th; torrents 29th; without intermission 30th.

Laconia, Ind.—Severe southwest gale 16th; south gale 18th; thunder 22d.

Knightstown, Ind.—Heavy snow and rain 16th; thunder and lightning followed by snow flakes like hen's eggs, 22d.

La Porte, Ind.—Lakes frozen over 23d. Snow-fall twenty-two inches.

New Harmony, Ind.—Heavy thunder, rain all day 16th; thunder storm 29th.

Near Chicago. Ill.—Rain and snow last thirty-six hours 19th.

Marengo, Ill.—One foot snow 19th, (in 1860, November 23d, had sleighing, but less snow;) sleighing done 30th.

Louisville, Ill.—Bees, butterflies, &c., abroad and birds singing 2d; wild geese 6th; thunder and rain 15th, 16th; tremendous wind 17th; thunder-shower 22d. Month very dark, cloudy, cold.

Golconda, Ill.—Hard blow from southwest 15th. No thunder this month, but very cloudy and cold.

Belvidere, Ill.—Heavy snows 16th to 18th; sleighing to 25th.

Ottawa, Ill.—Snow and sleet 11th to 16th, and 18th, 19th. A wintry month; thousands of acres of corn unharvested.

Winnebago, Ill.—A foot of snow with strong wind 16th, 17th. Month 5.32° below average of twelve years.

Hennepin, Ill.—Misty; by 18th snow covered ground; by 30th ground visible. Potatoes, &c., frozen 20th, and onward.

Dubois, Ill.—Thunder and lightning 16th; heavy gale 22d; frogs sing 29th. Month 3.4° colder than the average for four years, and 2.63 inches more rain.

Mt. Sterling, Ill.—Heaviest November snow since 1842, 15th, 16th. Ground frozen three to four inches, and thawed, several times; wheat looks bad,

Warsaw, Ill.—Spring day 29th; cold 30th; 15° December 1st.

Plymouth, Wis.—Fog and lightning 29th. Sleighing from 13th to 30th.

Milwaukee, Wis.—In great storm on the lakes, thirty-five vessels lost and sixty-two damaged, loss $1,267,800, not including cargoes. A very small percentage would pay expense of warning and so prevent such terrible loss of lives and property.

Rocky Run, Wis.—Aurora 1st; great snow and gale 16th, 17th.

Madison, Wis.—Severe snow storms 16th, 18th; good sleighing to 30th. Last of month like January.

Edgerton, Wis.—Deepest November snows in twenty-one years, 16th, 18th—in all twenty-five inches.

Baraboo, Wis.—More snow (19.25 inches) and good sleighing than in any November remembered.

New Lisbon, Wis.—Month had twenty-seven cloudy, twenty-two snowy, two rainy, and two clear days.

St. Paul, Minn.—Four Novembers in eleven years colder than this, but this more evenly cold, and had only seven clear days, counting half days.

Minneapolis, Minn.—River closed 21st; first sleighing 25th. Coldest November since 1857, and cloudiest on record.

New Ulm, Minn.—Aurora 9th; navigation closed 12th.

Waukon, Iowa.—Good sleighing for twelve days after 17th.

Monticello, Iowa.—First snows, October 27, 1866; December 11, 1867; November 17, 1868; November 8, 1869.

Independence, Iowa.—Heavy snow-storm 16th; rough sweeping snow-storm 18th; river closed 20th.

Waterloo, Iowa.—First snow 8th; heavy snow 18th.

Algona, Iowa.—Coldest November I have known in Iowa.

West Bend, Iowa.—Aurora 9th; snow on eight days, never more than four inches deep, all gone by 30th.

Mineral Ridge, Iowa.—Snow, gale from northwest, 10th; snow and high wind 18th.

Boonesboro', Iowa.—Month below average (34°) of fourteen years; lower only in 1857, (28°;) like October, dry, but ground yet wet from previous rains.

St. Louis, Mo.—Thunder, then heavy wind and snow 16th; high winds all day 19th.

Allenton, Mo.—Thunder and lightning night of 15th, 16th.

Hematite, Mo.—Thunder storm and gale last night, 16th; high wind 18th; lightning and thunder 22d, 23d; aurora 29th. Not a clear day in November.

Rolla, Mo.—Heavy thunder-storm 16th, then snow.

Hermitage, Mo.—Heavy thunder and lightning 15th; snow all day 16th; thunder 29th. Month very cloudy and cold.

Oregon, Mo.—Faint aurora 6th. Wild turkies and beasts in great numbers in the country.

Atchison, Kans.—First ice in river 22d. Coldest November since 1864—4° colder than average of six years.

Paola, Kans.—A gale in gusts from southeast 15th.

Holton, Kans.—Month cold and disagreeable, but no heavy rain or snow, and no lightning or thunder.

Manhattan, Kans.—Fine and mild month; favorable for farmers; ground fit for plowing all month.

Burlington, Kans.—No snow; growing grain looks well.

Council Grove, Kans.—While stormy east, northeast, southeast, and west, weather was fine. Month 5° colder than average of five years.

Bellevue, Nebr.—First snow-fall 10th. A cold cloudy month. Autumn mean 48°, 1.7° below last fall.

Nebraska City, Nebr.—Rain all day 16th; ice in river 20th to close.

Coalville, Utah Ter.—Rain on nine, and snow (eleven inches) on four days. Mean temperature 1° higher than last year.

Watsonville, Cal.—First hoar-frost 23d; first ice 24th. Farmers plowing; some fear a dry winter.

Vacaville, Cal.—First frost 30th. Grass growing finely.

Walla-Walla, Washington Ter.—Wild geese 10th; second frost 23d; second snow 26th; a few small meteors seen 29th.