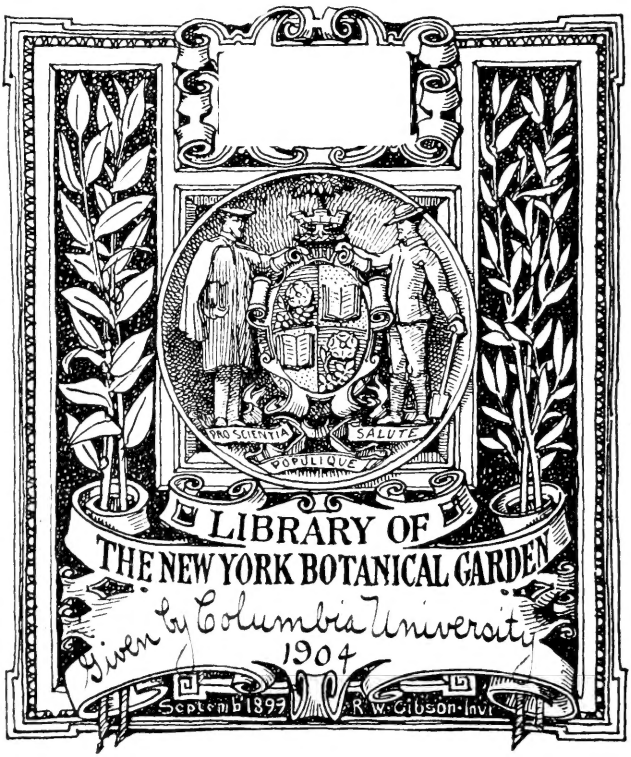

MONTHLY REPORT

OF THE

DEPARTMENT OF AGRICULTURE

FOR

JANUARY, 1875.

WASHINGTON
GOVERNMENT PRINTING
1875

CONTENTS.

MONTHLY REPORT.

DEPARTMENT OF AGRICULTURE,
Statistical Division, January 30, 1875.

SIR: I herewith submit a report for January, 1875, of the comparative numbers and home prices of farm animals in the several States, with the respective rate of yield and current prices in December of the principal farm products last season. I include, also, an abstract of a plan of international statistics of agriculture and forestry, condensed from a document received through the State Department from the minister of agriculture of Austria; other minor statistics of this and other countries; and a current report of progress by the entomologist, and a report of microscopic investigation.

J. R. DODGE,
Statistician.

Hon. FREDERICK WATTS,
Commissioner.

DIGEST OF MONTHLY RETURNS.

The circulars for December relate to yields and prices of the prominent products of the farm for the current year. Those for January inquire the comparative numbers and prices of farm animals. From the October returns of product, as compared with those of the previous year, and the June and July returns of acreage, the yield per acre can be deduced. These direct estimates of the rate of yield in December are, therefore, entirely independent, and furnish a means of verification, and when discrepancies appear, of correction of acreage. There is often a wonderful agreement in the results of these separate returns, and when differences occur they are usually found to result from a low report of aggregate product or a high estimate of rate of yield, or both together. There is a tendency in farmers' estimates to make a good showing of rate of yield, whether from a bias of pride in good culture or soil-capabilities, or from neglect to note the areas of failure or neglected culture; and at the same time a disposition to underrate the total quantity of the crop, especially if it is not a full one. Our correspondents are intelligent, with less of this bias than is usually observed in rural estimates of production, and our aim has been to secure as near perfect impartiality and accuracy as possible.

As to prices, both of products and of domestic animals, it is easy to report actual average prices current in the local markets of the county, so that our statements of average prices for each State, made fairly and carefully by combining county prices in proportion to quantity of local

production, may be relied upon as substantially correct. Indeed, they furnish abundant internal evidence of correctness in the clearness of their mirroring of all results of local causes of fluctuation. These prices are those of home markets, and furnish the only known data for showing what the farmer actually receives for his produce before it passes into the hands of the shippers and dealers.

YIELD OF FARM CROPS OF 1873.

Corn.—It was said of the harvest of 1873, "there is no State in which corn is a crop of any general importance which reports the yield of last year." The crop of the past year is not only under average, but it is less than that of the previous one. The following comparison gives the figures of the past two years for several of the large corn-producing States:

States.	1873.	1874.	States.	1873.	1874.
Tennessee	22.5	16.8	Illinois	21	18
Kentucky	29.5	25	Iowa	29	29.2
Ohio	35	36	Missouri	23.5	16
Indiana	25.6	27	Kansas	39.1	12.3

The yields in the New England States are about the same as those of last year; those of the Middle States a little less; and those of the Southern States in most cases show a small reduction.

The loss was occasioned by—1, drought; 2, chinch-bugs; 3, grasshoppers. The latter came in overwhelming numbers, but were more restricted in range than the chinches, and, unfortunately for them, came too late to get more than the leavings of their more favored forerunners.

Wheat.—The product of wheat is greater in the aggregate than in any previous year, exceeding 300,000,000 bushels. There was an increase of acreage of fully 2,500,000. The estimates of the following States compare with the previous crop as follows:

States.	1873.	1874.	States.	1873.	1874.
New York	13.5	15.6	Wisconsin	16.5	11.5
Pennsylvania	14.2	14.8	Minnesota	18.3	14.8
Ohio	12	15	Iowa	13	11.6
Michigan	12.2	14.2	Missouri	12.8	13.5
Indiana	11.2	12.2	Kansas	14	13.3
Illinois	13.5	11.5	California	13.5	13.5

In general terms, the yield of winter wheat was greater than in 1873, and that of spring wheat less. The line of division between the winter and spring wheat may be drawn from Chicago to Leavenworth and Southern Colorado. About all the spring wheat east of this line is the little produced in New England and Northern New York. California wheat, often classed as spring wheat, and so given in the census, is properly winter wheat. It is sown as soon as rains come to aid in germination, and during the rainy season.

Other grains.—The rate of yield of rye is greater in New England, nearly the same as last year in the Middle States, and in the West is not essentially different from the previous record, some of the States making somewhat higher figures, and others a trifle lower. This cereal

is mainly used in the South for winter pasture, and only the seed is required for the next crop. Product, 14,891,000 bushels, 98 per cent. of the last crop.

The Eastern States and New York have increased yields of oats; New Jersey and Pennsylvania show a decrease. The Southern States mostly report decreased yields, the reduction being marked in Arkansas and Tennessee; and in the Western States the decrease is generally heavy. The following figures will illustrate the decline:

States.	1873.	1874.	States.	1873.	1874.
Kentucky	24.	14.4	Indiana	20.	19.
Ohio	27.	20.5	Illinois	30.	17.5
Michigan	30.2	27.	Iowa	33.	30.

The comparative scarcity is everywhere indicated by increase in prices. Product, 240,000,000 bushels, a decline of nearly 30,000,000 bushels.

Barley yields somewhat less than last year in the Western States; in the Eastern, where little is grown, there has been an improvement in the rate of production. Product, 32,704,000, 1 per cent. increase.

Potatoes.—The yield in all of the New England States, except Rhode Island, exceeds one hundred bushels per acre; of the remaining States, only New York, Florida, California, and Oregon reach that average. In the West the ravages of the beetle are less marked and the rate of yield generally increased, as the following estimates of yield per acre, in bushels, indicate:

States.	1873.	1874.	States.	1873.	1874.
West Virginia	70	76	Illinois	40	55
Kentucky	55	46	Wisconsin	71	87
Ohio	85	71	Minnesota	99	70
Michigan	75	87	Iowa	44	63
Indiana	56	60	Missouri	38	40

The aggregate is 106,000,000 bushels, about the same as the previous crop.

Tobacco gives the smallest aggregates made in many years, both the area in cultivation and rate of yield being small. A special report will be made in the next monthly upon this crop.

Hay.—In nearly all of the Atlantic States the yields are greater than last year, and in many of the Central and Western are somewhat smaller. A few figures will serve to illustrate this fact:

States.	1873.	1874.	States.	1873.	1874.
New Hampshire	1.05	1.12	Kentucky	1.23	.94
Massachusetts	1.04	1.17	Ohio	1.05	.90
New York	1.02	1.30	Michigan	1.15	1.00
New Jersey	1.03	1.35	Indiana	1.25	1.13
Maryland	1.00	1.25	Illinois	1.25	1.20
Virginia	1.00	1.05	Wisconsin	1.30	1.10
South Carolina	1.10	1.00	Minnesota	1.38	1.35
Georgia	1.05	1.10	Iowa	1.25	1.22

The yield in 1873 was averaged at 1.14 tons per acre; in 1875, 1.16 tons. The product aggregates about 25,500,000 tons, an increase of 500,000 tons.

Sorghum.—This crop is still cultivated in all except the New England States, New York, New Jersey, Michigan, Louisiana, Oregon, and California. It is grown merely for its sirup, and more largely in the West than elsewhere. The yield per acre is generally about the same as in 1873, the average number of gallons per acre being thus reported in the following States:

States.	1873.	1874.	States.	1873.	1874.
North Carolina	73	68	Ohio	86	78
Georgia	89	67	Indiana	85	89
Tennessee	80	75	Illinois	61	92
Kentucky	73	91	Iowa	71	110

Buckwheat same as last year, nearly 9,000,000 bushels.

For further details of these and other crops, the reader is referred to the tables in this number.

PRICES OF FARM-CROPS.

Corn.—The price of corn in this country is governed by the quantity grown, the abundance or scarcity of other feeding-material having a slight modifying influence. The foreign demand, averaging between 1 and 2 per cent., and reaching in recent years 3 per cent., is too small to be a disturbing element in the market. The commercial assertion, that the foreign value of an exported article fixes its home-price, while partially true of wheat, fails almost utterly in its application to corn. So we usually see the lowest prices of corn when we have the largest products; but an average crop of wheat, with larger foreign crops, may bring lower prices than a more prolific one with deficient harvest abroad. A reference to the records of estimated production and current prices in past years illustrates this truth, and at the same time attests the accuracy of the records. The quantity produced and average prices of recent years are as follows:

In 1868, 906,000,000 bushels, valued at 62 cents per bushel.
In 1869, 874,000,000 bushels, valued at 75 cents per bushel.
In 1870, 1,094,000,000 bushels, valued at 54 cents per bushel.
In 1871, 991,000,000 bushels, valued at 48 cents per bushel.
In 1872, 1,092,000,000 bushels, valued at 39 cents per bushel.
In 1873, 932,000,000 bushels, valued at 48 cents per bushel.
In 1874, 854,000,000 bushels, valued at 65 cents per bushel.

The price in 1873 would have been at least 10 per cent. higher than in 1871, but for the effect of the monetary panic on prices generally. The price at the close of 1872 was 15 cents lower than in 1870, partly from gradual decline in prices and in part because the surplus of old corn was much smaller in the latter year, the combined product of 1869–'70 being 1,968,000,000 bushels; of 1871–'72, 2,083,000,000 bushels; a difference of 115,000,000 bushels. At the present time, a season of continued monetary depression, the average price is 65 cents, 10 cents less than in 1869, when the crop was 20,000,000 bushels greater. In 1871, a medium crop, with a large surplus of the immense product of 1870, and a tendency to lower values generally, caused a reduction of 5 cents per bushel.

The crops of 1869 and 1874 are the shortest for many years, and the prices naturally the highest.

The December prices of the past six years, in the States on the fortieth parallel, are compared as follows:

States.	1874.	1873.	1872.	1871.	1870.	1869.
	Cents.	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*
New Jersey	82	62	62	75	81	95
Pennsylvania	76	60	60	77	75	92
Ohio	58	42	34	45	48	72
Indiana	51	40	29	37	38	70
Illinois	56	32	24	32	35	57
Iowa	43	31	18	23	34	50
Nebraska	73	28	18	25	36	37

These figures indicate plainly the first and last years of the period as years of scarcity. The present prices are lower than those of 1869, because the product is somewhat less, and on account of the general reduction in values, especially since the summer of 1873. In Illinois, the difference is but 1 cent per bushel, and the rate of yield is less for the present crop. In Indiana, where the price in 1869 was 19 cents higher than now, the yield in 1874 is four bushels more per acre than in 1869. In Iowa the yield in both years was better and the price lower than in the other States, with one marked exception—Nebraska, in 1869, giving 42 bushels per acre, worth 37 cents; in 1874 only 10 bushels, commanding the extraordinary figure of 73 cents. This constant variation of local prices of corn illustrates forcibly the fact that they are governed mainly by *local* demand.

The lowest (State average) price of corn of the crop of 1874 is found in Iowa, 43 cents. The average of Indiana and of Minnesota is 51 cents; that of Kentucky, 55; of Illinois, the great corn State, with a rate of yield unprecedentedly low, 56; Ohio, 58. Those between 60 and 70 cents are West Virginia, 61 cents; Wisconsin, 63; Virginia, 64; Michigan, 65; Tennessee, 68. Between 70 and 80 cents, Delaware, 70; North Carolina, 72; Nebraska, because of chinch-bugs and grasshoppers, stands with Maryland at 73; Missouri, afflicted with insect plagues and drought, 74; Texas, 75; Pennsylvania, 76. New Jersey is the only State making record between 80 and 90. Then comes suffering Kansas, whose crop last year was worth but 31 cents, at 91 cents; followed by Georgia, 92; New York and Alabama, 93; Oregon, 94; Arkansas, 95; California, 98; Florida, 99. The home-growth of South Carolina and Louisiana is worth $1; Mississippi, $1.01; and the New England States, whose corn, always higher in price than Western, is held at $1.10 to $1.18 per bushel.

Wheat.—The average value per bushel of the large crop of 1869 was 94 cents. The next crop was under an average, estimated at 236,000,000 bushels, valued at $1.04. Another under-medium crop was gathered in 1871, 231,000,000, valued at $1.25. That of 1872, estimated at 250,000,000 was valued at $1.24. The crop of 1873 was a full one, and the rate of valuation receded to $1.15. Three deficient crops in Great Britain made a strong demand for wheat, as is shown by the exports (in wheat and flour) of 182,520,878 bushels in the last period of three years against 136,192,092 bushels of the previous period of three years, an increase of 46,328,786 bushels.

Year ending June, 1868	29,717,201	Year ending June, 1871	38,995,755
Year ending June, 1869	53,900,780	Year ending June, 1872	52,014,715
Year ending June, 1870	52,574,111	Year ending June, 1873	91,510,408

The present crop exceeds 300,000,000 bushels, and the average value has receded to 94 cents. The general European deficiency in 1873

caused heavy shipments throughout 1874, up to September, mainly from our crop of 1873, which will aid in swelling our aggregate for the fiscal year ending June 30, 1874. The abundant harvests abroad in 1874 have caused this decline, which will probably go no further unless a prospect of heavy European production in 1875 should receive general credence.

The following statement of prices in several prominent wheat-growing States, since 1869, will fairly illustrate the range of local prices in those years.

States.	1874.	1873.	1872.	1871.	1870.	1869.
Ohio	$1 04	$1 31	$1 42	$1 26	$1 09	$1 63
Michigan	1 08	1 35	1 46	1 32	1 08	97
Indiana	94	1 22	1 32	1 26	1 00	93
Illinois	86	1 10	1 23	1 18	94	76
Wisconsin	83	97	1 03	1 11	90	68
Minnesota	70	80	83	1 00	83	59
Iowa	65	79	85	96	78	52
Missouri	83	1 13	1 41	1 16	91	80
Kansas	84	1 00	1 42	1 13	86	79
Nebraska	60	75	78	90	64	51

As the smallest crop of corn and the highest prices are seen in 1869 and 1874, so the largest product of wheat and the lowest prices occur in the same years. In the above statement of ten prominent wheat-growing States, the prices for each State in these years are lower, without a single exception, than in any intervening year. Those of 1872 are the highest, and, in the winter-wheat States, the next highest prices are in 1873, and, in the spring-wheat States, in 1871. A large yield was obtained in 1873, but the continued foreign deficiency sustained prices, so that the import of United States wheat in that year cost $3.26 per cwt. in gold, against $3.25, the cost of the previous year's importation; but the imports of 1864 cost only $3.07, being mainly from the crop of 1873.

COMPARATIVE NUMBERS AND PRICES OF FARM-ANIMALS.

NUMBERS.—A slight increase of horses is reported in most of the States, largest in Nebraska, Tennessee, Missouri, and Wisconsin. In mules, the largest ratio of increase has been made in the following States, in the order named: Illinois, Minnesota, Texas, Tennessee, Ohio, Kansas. In milch cows the increase has been larger than in other kinds of neat stock. In Minnesota an increase of 13 per cent. is reported, and in Nebraska 8 per cent. This tendency is strong in Maine and Connecticut, where the dairy interest is a growing branch of agriculture, the reported advance being 6 per cent. In Wisconsin the increase is 5 per cent.; 4 per cent. in New York, Iowa, California, and Oregon. In other bovine stock, oxen and other cattle, a decrease is reported in all States except Maine, Vermont, Rhode Island, Connecticut, New Jersey, Pennsylvania, Delaware, South Carolina, Ohio, Indiana, Minnesota, Iowa, and Oregon. Texas is reported at 98 per cent. In Kansas and Nebraska many animals have been sold at any available price, from want of feed to winter them. There is some increase in sheep in the New England States, in Texas and Arkansas in the southwest, in Wisconsin and Minnesota in the northwest, and on the Pacific coast. The largest decline has been in swine, in which nearly every State has participated. The aggregate percentages of the farm-stock of last year, as reported by statistical correspondents on the 1st of Jan-

uary, are as follows: Horses, 102; mules, 104; milch cows, 102; oxen and other cattle, 100; sheep, 99; swine, 91.

PRICES.—The average prices and total valuation of farm-animals of the United States, reported in January of each year, has been as follows, since 1867:

Years.	Horses.		Mules.		Cows.	
	Average price.	Total value.	Average price.	Total value.	Average price.	Total value.
1867	$79 46	$429,271,818	$92 52	$76,094,954	$39 77	$322,968,141
1868	75 16	432,696,226	77 61	66,415,769	36 78	319,681,153
1869	84 16	533,024,787	106 74	98,386,359	39 11	361,752,676
1870	81 38	671,319,461	109 01	128,584,796	39 12	394,940,745
1871	78 52	683,257,587	101 53	126,127,786	37 33	374,179,093
1872	73 37	659,707,916	94 82	121,027,316	31 97	329,408,983
1873	74 21	684,463,957	95 15	124,658,085	29 72	314,358,931
1874	71 45	666,927,406	89 22	119,501,859	27 99	299,609,309

Years.	Other cattle.		Sheep.		Swine.	
	Average price.	Total value.	Average price.	Total value.	Average price.	Total value.
1867	$21 55	$249,351,682	$3 37	$132,774,660	$5 43	$134,111,424
1868	20 86	249,144,599	2 52	98,407,809	4 55	110,766,266
1869	25 12	306,211,473	2 17	82,139,979	6 26	146,188,755
1870	22 54	346,926,440	2 28	93,364,433	6 99	187,191,502
1871	22 82	369,940,056	2 32	74,035,837	6 20	182,602,352
1872	19 61	321,562,693	2 80	88,771,197	4 36	138,733,828
1873	20 06	329,298,755	2 96	97,922,350	4 09	133,729,615
1874	19 15	310,649,803	2 61	88,690,569	4 36	134,565,526

While the above give the average value for the United States of all kinds of farm-animals, the different local values of cattle may be seen in the following record of a dozen States of different sections of the country, showing the effect of proximity to market, of improvement in breed or condition, in increasing values:

Years.	Cows.					
	Massachusetts.	New York.	Virginia.	Texas.	Ohio.	Illinois.
1867	$59 80	$57 22	$29 71	$11 20	$44 94	$35 90
1868	67 11	52 54	28 11	10 29	43 07	36 62
1869	67 59	54 14	28 76	9 12	43 00	38 11
1870	57 00	54 11	30 04	10 67	44 77	37 02
1871	59 16	48 51	29 09	12 83	45 09	37 68
1872	39 87	39 53	24 93	14 12	37 36	33 77
1873	41 16	34 00	23 69	13 50	32 18	30 45
1874	45 00	30 50	22 00	15 25	29 57	30 03

Years.	Other cattle.					
	Massachusetts.	New York.	Virginia.	Texas.	Ohio.	Illinois.
1867	$44 69	$39 46	$17 08	$5 59	$36 39	$23 48
1868	46 15	39 79	18 86	5 14	29 58	24 42
1869	54 41	46 67	20 39	5 78	34 04	27 35
1870	49 48	45 91	20 42	6 10	33 99	25 10
1871	44 66	42 27	21 34	7 37	35 34	26 02
1872	35 21	34 10	17 21	8 10	29 50	22 58
1873	39 86	34 05	16 87	7 51	27 71	23 89
1874	39 18	28 88	17 20	8 09	26 30	24 03

As compared with the record of last January, young horses are a little higher; in the Middle States there is a decline in value of horses of all ages; throughout the South the depression is still more positive; in Michigan, Wisconsin, and Minnesota prices of last year are well sustained, while elsewhere in the West they are either stationary or declining. A few examples are given:

	1874.				1873.			
Vermont	$32 20	$51 00	$78 30	$114 00	$28 60	$49 33	$73 06	$106 80
New York	36 54	59 74	88 30	118 11	38 20	63 67	92 54	125 50
Pennsylvania	37 02	63 72	92 25	123 20	40 11	68 33	98 08	130 02
Georgia	35 00	56 17	80 95	106 20	38 50	61 40	84 20	110 50
Texas	13 11	19 77	28 26	44 81	15 40	23 10	34 13	52 00
Tennessee	30 12	45 74	63 20	84 75	38 80	56 30	77 50	97 50
Illinois	25 78	40 34	59 31	83 44	26 92	41 18	59 94	82 00

The prices of mules of different ages have nearly everywhere declined. They maintain their ascendency, however, in comparison with the prices of horses of the same ages.

Milch-cows command better prices on the Northern Atlantic coast, and in some of the Western States. In the South they generally yield somewhat to the prevailing depression there. The comparison is as follows in the States mentioned:

	Me.	*Vt.*	*Pa.*	*Va.*	*Ga.*	*Tex.*	*Ohio.*	*Wis.*	*Iowa.*	*Kans.*
1874....	$39 50	$36 40	$35 42	$22 94	$18 85	$13 33	$30 42	$26 37	$26 50	$20 65
1873....	37 50	35 50	33 25	22 00	18 54	15 25	29 57	26 28	26 50	25 30

The low price in Kansas results from the scarcity of corn and other supplies for wintering milch-cows.

In most of the Northern Atlantic States cattle bear somewhat higher prices. In South Carolina, Georgia, Louisiana, and Texas there is little change; in other Southern States a decline, partly in consequence of scarcity of money and forced sales. In the upper portion of the Ohio Valley prices are well sustained; in the region of drought, chinches, and grasshoppers a decline appears.

Prices of sheep are higher in the Eastern and Middle, on the Pacific coast, and in some of the Western States, where unequal conditions of production have disturbed values in this as in other departments of stock-growing.

Prices of hogs have advanced very materially. The reduction in numbers, and the high price of corn, have conspired to make a great advance in prices, as is indicated by this example of prices of old hogs:

	N. Y.	*Pa.*	*Ga.*	*Ohio.*	*Ill.*	*Mo.*	*Kans.*
1874	$15 40	$17 80	$6 21	$12 12	$10 50	$5 50	$6 67
1873	13 04	11 20	4 90	9 12	8 50	6 00	8 52

A few notes from regular correspondence are given as indicative of the changes in prices and their causes:

MAINE.—*Piscataquis:* A small increase in the numbers of neat stock; but the price per head is less than last year, owing to scarcity of money.

VERMONT.—*Orleans:* Cows constitute four-fifths of the stock of this county. A few farmers have a few large sheep, excellent for mutton. *Caledonia:* Dairymen, as a rule, raising instead of buying their cows. A falling off in sheep, as butter pays better than wool. *Grand Isle:* Milch cows are unusually high; the same of beef cattle, $7 to $9 per hundred, including beef, hide, and tallow.

CONNECTICUT.—*New London:* Since the distemper ceased many horses have been brought here from Canada; also many mules, oxen, and other cattle have been brought from the West.

NEW YORK.—*Erie:* Some farmers are getting rid of their old scrub cows, procuring

others, and keeping them better. *Tompkins:* No mules raised; beginning to import them from the Southwestern States. Farmers believe that they can do their work cheaper with them than with horses. *Queens:* Mules are little raised; but are getting into favor for farm and truck-work. Only two towns raise sheep. Many of our farmers purchase stock sheep from western supplies. *Orange:* For several years the systematic breeding and development of horses has been largely engaged in by some of our enterprising citizens. Large farms are devoted almost exclusively to this business. The horses are bred, trained, and kept or sold solely with a view to their qualities as roadsters, speed being the most desirable quality. These horses frequently command almost fabulous prices. As they are not reared for ordinary farming purposes, they ought not, perhaps, be regarded as farm stock, and have not been estimated at their full appraised value in the list of prices given; if they were, it would raise the price at least 25 per cent. *Warren:* No demand for working-oxen compared with previous years, horses taking their place for labor to a large extent. Sheep sought after for raising lambs for market. *Jefferson:* A prospect that more young cattle and colts will be raised in 1875 than in any year since 1872.

NEW JERSEY.—*Warren:* Very few mules raised; brought from the West in large droves, three years old and older, and when broke to the harness worth, on the average, $300 per pair. A great many are used on the canal. Milch cows in demand and prices better than last year. Lambs were contracted for in May and June for early market at an average of $6 per head; those not contracted for at that time fell back to about $4 per head. "Drove-sheep" sold in August and September at an average of $5 per head. Towards spring a higher price is demanded for ewes coming in. Live hogs have higher price than a year ago.

PENNSYLVANIA.—*Northampton:* Good cows of good stock bring $65 to $75, while dry cows of ordinary stock will not bring over half that price. *Pike:* Our farmers are beginning to discover the importance of sheep-husbandry; a number of flocks have recently been brought into this county. *Elk:* Under the head "oxen and other cattle" nearly all over three years are working-cattle, which are worth only a little more than their value for beef, owing to the almost total cessation of the lumbering business in this section. *Montgomery:* The number of horses larger than last year, when our number had been greatly reduced by the epizooty. *Perry:* No sale for horses for the last six months. A decrease in milch cows, oxen, and hogs, owing to the short hay-crop. *Clearfield:* The panic times has had the effect to reduce the price of all stock very largely, and the lumbering operations being curtailed to a very great extent, has also effected a great change in prices. *Westmoreland:* Very few mules are now raised; they are generally brought from the Western States. *Indiana:* Horses lower in price than they have been for twenty years; stock-cattle lower in price than usual at this season; sheep and hogs in demand at fair prices, and looking up. *Lehigh:* Horses very plenty, and but few sales. The furnaces now have their railroads and steam-power for nearly all the work heretofore done by horses. More than one-half the iron-ore beds have suspended work, and those in operation work by steam. *McKean:* Three or four hundred beef-cattle have been brought into our county from Ohio. *Washington:* Horses so plenty and cheap that, compared with former years, few are raised. Cattle for beef having brought excellent prices for several months, are now pretty well run off. Hogs, scarce and high. *Armstrong:* Horses are increasing far beyond the demand; prices tending downward rapidly. Sheep and hogs in demand at good prices. *Chester:* Broken oxen worth $150 to $200 per pair; steers, $45 per head; fresh cows, $60; dry cows, $30; yearling or summer lambs, $4.50; stock-ewes, $3; wethers, $4.50; Hogs, 9 cents per pound, live-weight. *Fulton:* No sales for horses, colts, or mules. *Erie:* Horses as plenty as one year ago, and about 15 per cent. lower. *Lycoming:* Prices of horses and mules considerably lower than at this time last year, owing to scarcity of money and general business depression; but owing to the very low prices for cattle and hogs for some years past, farmers have raised fewer; consequently they have become somewhat scarce and are higher in price.

MARYLAND.—*Baltimore:* Prices of second and third class horses reduced; first-class up to the average at this season. *Dorchester:* Horses and mules are on the increase, but work-oxen and hogs on the decrease, in this county. Farmers are beginning to find out that sheep are paying well. *Washington:* Hogs are not so plenty, and something higher than a year ago. *Cecil:* The demand for the meat of sheep under one year old makes them more valuable than older ones.

VIRGINIA.—*Northampton:* A scarcity of hogs and demand for pork. *Bedford:* The number of horses increased 10 per cent., but scarcity of money makes prices low compared with former years. Price of cattle low. Farmers are looking with more favor on sheep-raising. The stock of hogs has depreciated at least 50 per cent., owing to "cholera," which is still prevailing. *Henrico:* Prices lower for all kinds of stock, except hogs, which are high, and milch cows, which are not much reduced from last year. *Pittsylvania:* Live-stock in general increased somewhat, owing to the higher price for tobacco and a slight increase in immigration. *Dinwiddie:* The number of horses increased from two causes—increased area in cotton and the raising of colts

low in price, owing to short crops of cotton and tobacco. A disposition to increase the number and improve the quality of cows, and, in fact, all kinds of stock. Sheep steadily increasing, notwithstanding the ravages of dogs and rogues. *Madison:* Mules increasing and becoming more popular as farm-animals. A greater disposition to engage in sheep husbandry, and sheep improving under better treatment. Hogs scarce. *Prince William:* The financial condition has caused a decline in all domestic animals except sheep. General attention being paid to the improvement of animals—improved breeds of cattle. *Southampton:* Horses and mules not raised; generally purchased from droves. Small farmers are raising oxen for farm-work. Hogs few, owing to scarcity of corn, but farmers are slowly returning to the old plan of raising their own bread and meat. *King William:* But for negroes, hogs would increase greatly. *Spottsylvania:* More attention paid to the raising of sheep. *Blanā:* Horses and mules running very low. Hogs scarce and high. *Highland:* Many horses raised for market; not many mules for outside markets; oxen and other cattle more raised than any other stock, and annually driven to the northern and eastern markets in great numbers. Milch cows receive much attention, and are a source of great profit to the county. *James City:* The increase of mules is due to purchases by the lumbermen. Have never seen a dozen mule-colts, all told, in the county. The increase of sheep is due principally to our enterprising men, who have imported quite a large number from North Carolina. *Clarke:* No mules bred in the county; most of those now here are vestiges of the war. *Essex:* Horses and mules are 25 per cent. lower than last year, owing to scarcity of money. *Roanoke:* Oxen not raised to any great extent; a good yoke, well broken, worth about $80. *Wythe:* No mules raised; some bought annually, to work at the iron-works. *Montgomery:* A marked increase in the number of cattle, sheep, and hogs, and great improvements in breeds. The farmers are generally getting into breeds of Short-horns in cattle, the Cotswold in sheep, Berkshire and White Chester in hogs, and the Norman or some other improved breed of horses. *Bath:* The decrease in cattle owing to a light crop of hay.

North Carolina.—*Lincoln:* Work-oxen are worth 50 per cent. more than other cattle. *Lenoir:* Very little stock of any kind raised for sale. Nine-tenths of the horses and mules used are brought from Tennessee, Kentucky, and other places. What cows, sheep, and hogs are raised are used on the farms. *Pitt:* Only about 10 per cent. of the horses and mules required are raised here; but this branch is annually receiving more attention. We raise our own supply of oxen and cattle, but none for export. Only a few sheep raised. *Beaufort:* Cattle increasing in number quite rapidly, but little improvement in quality. *Franklin:* Very few horses and mules raised. The supply is kept up by purchases from the West. Hogs are sold by weight, and the price is now 10 to 12 cents per pound. *Davidson:* The short corn-crop last year induced many farmers to kill out their hog stock so closely as to occasion an absolute scarcity this winter. *Mitchell:* The average price given for hogs is for common stock. The Chester and Essex breeds are being introduced, for which we pay, at two months old, $6 per head. *Wilkes:* The distemper in cattle is the cause of decrease. It has prevailed in several sections of the county during the past year. As the hog-cholera has about disappeared, the stock is increasing. *Ashe:* A decrease in cattle on account of scarcity of hay, caused by drought. *Jackson:* Horses and mules increasing on the farmers' hands for want of a market in the cotton-growing districts. Oxen and cows have decreased, from the fact that they could be sold for cash, and this has been the farmers' only means to meet taxes and other necessary expenses. *Buncombe:* Cholera has diminished our stock of hogs one-fourth. *Caldwell:* Much inferior stock of all kinds, and very little demand for any kind.

South Carolina.—*Barnwell:* There are too many dogs for the welfare of sheep, and the negroes think they have a pre-emption right to the hogs and young cattle. *Union:* A very large portion of the horses and mules are brought from other States, principally from Kentucky and Tennessee. From the same States come nearly all the hogs. *Lexington:* The prices of all kinds of stock low, corresponding with the panic prices of 1873.

Georgia.—*Troup:* More colts this year than since 1866, and there will be more next year than this. More attention to hogs. Few sheep, but a demand for more. *Columbia:* But few sheep and few hogs. The falling off in prices in horses and mules is owing to the fact that factors have sold to the freedmen, without security, low animals at high prices and at enormous interest. The freedmen, after paying landlords rent, have not been able to pay up; short crops, short prices, and extraordinary interest, have put our freedmen "*hors du combat.*" The factors have "called in" these animals, upon which perhaps two-thirds of the money has been paid, and they are sold, perhaps at public outcry, to the highest bidder, bringing, of course, but a fraction of first cost. *Camden:* No mules are raised; brought from Kentucky and Tennessee, and used principally in lumbering and the rice-fields. *De Kalb:* When the war closed there was very little stock left in this county. The people have supplied themselves with horses and mules and most of their pork from the West. Some cattle, sheep, and hogs are now raised, and once in a while a colt and mule, but none for market, except as occasionally some

farmer accumulates more than he needs. *Charlton:* No improved stock; none but range-hogs—"piney woods land-pikes." *Forsyth:* Horses, mules, and cattle very low, owing principally to scarcity of money. Hogs, scarce and high, not over one-fourth of a supply slaughtered. *Schley:* Farmers are inclined to raise sheep again, but dogs are a drawback. *Towns:* Horses, mules, cattle, and sheep very low, owing to scarcity of money; horses and mules 25 per cent. lower than at this time last year. *Chattooga:* Raise cattle and hogs for home consumption, and buy mules from Kentucky and Tennessee. *Upson:* Some planters grow hogs enough for their own family consumption, but none for sale; but there are signs of a change; a few have already embarked in a small way in growing colts, sheep, and hogs. *Decatur:* Sheep decreasing in number. Very few whites are permitted to own hogs, except in localities where there are no freedmen.

FLORIDA.—*Hillsborough:* The cattle business dying out. A very lively interest in getting improved breeds of hogs. *Gadsden:* A growing attention to the raising of domestic animals, and a perceptible increase in the number of horses. Our home-raised horses are as efficient on the farms as mules, and are thought to be less liable to disease than imported mules.

ALABAMA.—*Bullock:* A marked increase in stock of all kinds; planters are giving more attention to this branch of industry, and are becoming more independent. *Covington:* The loss of hogs from cholera is large. *Lauderdale:* Owing to the short crop of grain and forage, the price of horses and mules has declined at least 50 per cent., and the number of stock-cattle and oxen has been diminished of necessity in the way of beef. Milch cows have been preserved as a matter of economy. The number of hogs greatly decreased, owing to quinsy, cholera, and want of corn to feed them. *Calhoun:* Not enough horses and mules grown to keep up the number; they are brought from Tennessee and Kentucky. The decrease in the number of hogs is mainly owing to cholera and want of proper feeding. *Franklin:* Prices nominal; the great scarcity of money has caused business to stagnate so much that there are but few sales of anything. *Morgan:* Money being exceedingly scarce, there is scarcely such a thing as an exchange of stock for cash. A good work-horse, 15½ hands high and without a blemish, was recently sold to the highest bidder for $40, and that I think was about an average of the forced sales. *Limestone:* All kinds very low; horses and mules sold at public sale at $3 to $50 per head. A large proportion of the farm-stock owned by the freedmen. *Marion:* Sheep have been diminishing for four or five years; do well when properly cared for. *Wilcox:* Stock of all kinds much cheaper than heretofore. *Blount:* Stock raised for home use; none for market.

MISSISSIPPI.—*Grenada:* Cattle and hogs are about the only stock we try to raise, and the depredations of thieves on them have so discouraged farmers that they are about to abandon the raising of them. *De Soto:* The scarcity of money has decreased values to a very low figure. *Amite:* Horses, cattle, and hogs on the increase; mules and sheep decreasing. The prices of all kinds of stock less than last year, owing to large supply and stringency of money. *Marion:* Decrease in hogs owing to hog-cholera; still raging. *Lowndes:* Nine years ago there was an abundant supply of all kinds of stock, cattle, hogs, sheep, and nearly enough mules to supply the demand; now one may ride through the county and not see a dozen hogs, very few cattle, no sheep, empty cribs, poor mules, desolation and ruin on every hand. Those who would raise stock are prevented by the midnight raids of thieves. Succeeded in raising my meat till the last three years, but it costs about 25 cents per pound from stealage. *Madison:* The hogs are yearly decreasing, owing to the great uncertainty of keeping them from being stolen, and to the bad fences not protecting the crops from them.

LOUISIANA.—*Rapides:* No stock of any kind raised for sale. *Washington:* A falling-off in stock generally, especially in cattle, owing to the fact that the range in part of the parish has been completely eaten out, and farmers are obliged to sell off all stock they cannot winter; and in hogs owing to the prevalence of disease, by which the number is not half as large as last year. *Morehouse:* Horses, colts, and mules never raised here for market. The prices of horses and mules at least 10 per cent. lower than a year ago; not enough sheep and hogs raised for home consumption, and the number of hogs is annually decreasing. *Assumption:* The bad condition and losses of cattle in Louisiana are due principally to a want of shelter and proper feeding. Diseases here are seldom heard of; cattle die from starvation and exposure. Heavy losses are generally confined to one or two plantations, caused by bad treatment.

TEXAS.—*Angelina:* The average price of stock, $4 per head; cows and calves, $5 per head, or $10 for cow and calf; hogs mostly wild, and all depend on the mast for feed; very few sheep. *Caldwell:* The decrease in cattle is chiefly from driving and shipping to various points, chiefly Kansas, Saint Louis, and Chicago. *Cherokee:* But little stock changing hands, and at greatly-reduced prices, owing to the short cotton-crop and scarcity of money. *Dallas:* Among some fine Durhams imported from Missouri, the loss of grown cattle by acclimation was about 50 per cent.; the loss of yearlings was very small, say 5 per cent. Sheep have gone by. A lively interest in the improvement of hogs. We have some fine breeds of Suffolks, Poland China, Berkshire, and

Chester Whites. *Henderson:* Oxen sell at from $40 to $50 per pair or yoke. *Rusk:* Many horses and mules have been driven here for sale, and the low price of cotton and scarcity of money have reduced the price fully 25 per cent. *Titus:* Horses of common stock increasing in number; also mules of the better grade, while the Mexican half-breeds are rapidly decreasing. Beef-cattle increasing, but oxen declining, mules taking their place. A rapid decrease in hogs, owing to an unknown disease which causes sudden death. *Kendall:* Increasing interest in raising mules, which are more salable and remunerative than horses. The quality of hogs improving by crossing native with imported stock. They require no feeding; acorns, plums, wild apples, cherries, and grapes being amply sufficient. Milch cows selling for nearly three times as much as they did three years ago. A general disposition to improve the stock by importation. *Houston:* More hogs than cows, and at least two milch cows, one horse, and perhaps one mule, to every inhabitant; few sheep; have never known horses, mules, oxen, cows, or sheep sold under three years old. *Grayson:* As the wild grass of the county is just failing, herds of cattle are being driven out west. Owing to meager prices, horses and mules are accumulating. *Red River:* The number of ponies or common stock makes the average price of horses low. Mules in demand, but scarcity of money reduces the average price. Oxen and other cattle are decreased in number from the shortness of crops and scarcity of feed. Hogs very scarce owing to continued prevalence of cholera. *Williamson:* The increase in horses and mules is owing to the fact that there has not been a demand for them. Work-oxen, well broke, sell readily for $50 to $65 per yoke. Beeves over four years old sold last month for $25 per head. Milch cows not sold as formerly to be driven to Kansas; it is more profitable to keep them. Several flocks of sheep added to the number in the county within the past year. More attention to them than formerly; it has been found that it pays better. Only hogs enough raised for home consumption. *Wood:* Beef cattle killed up very close this year, owing to the high price of bacon and the scarcity of money with which to buy it. Hogs have died to a considerable extent with cholera. *Fayette:* Sheep on the decrease in consequence of more attention to farming. Horses rate low because there are very few good ones in the county. Cattle decreasing in numbers but advancing in price; better breeds being introduced. Grown cattle, of fine blood, brought from the Northern and Western States, do not live long; brought young, they do a great deal better. Hogs scarce, but better breeds being introduced. *Cullin:* An increase of horses raised of over 25 per cent., but the Government has bought largely for cavalry purposes within the past year, which keeps the number down. The decrease in cattle is due to the fact that several large cattle-owners have moved their herds farther west for better range. *Bosque:* At least 25 per cent. of the whole number of beef cattle have been driven off the past year, and the demand seems to be increasing and prices better. There is also a demand for mules and more attention to raising them. But few sheep. *Burnet:* Stock horses have been doing well, the loss of colts being smaller than for several years. Work-horses are sold at an average price of $80. The number of mules raised increasing, but still insignificant. The increase in cattle owing to the fact that very few have been driven out of the county. The price of work-oxen ranges from $50 to $80 per yoke. For the purpose of improving native stock, by crosses with short-horns, several small droves of fine cattle have been imported by enterprising men, but the loss by death is so large as to be somewhat discouraging. *Bee:* During the past year, thousands of sheep have been brought into this from western counties. *Ellis:* No young cattle sold separate; sales are either as stock-cattle, which include cows, calves, yearlings, and two-year-olds, now worth $6 per head; or milch cows and calves, worth $20; or beeves, worth about $18 per head; or work-oxen, $25 per head. Hogs only raised for home consumption. *Smith:* Increased attention to hogs; improved breeds being introduced. *De Witt:* Raising better horses than formerly, and mules receiving more attention. Cattle decreasing in number, but improving in quality. Sheep attracting much attention; more engaging in raising them; all taking better care of them, and consequently making more money. *Hunt:* The decrease in horses owing to the fact that native stock is gradually giving way to improved breeds; the decline in price owing to general depression in trade. Mules have been improved by finer stock raised and brought into the county. Oxen are being dispensed with, on account of transportation furnished by railroads. Milch-cows and hogs decreasing in numbers but improving in breeds. *Live Oak:* The falling off in cattle owing to the fact of so much shipping and driving to Kansas the past year. The price of stock (and lands) improving. *Nueces:* During the past year the sale of cows for their hide and tallow has been partially discontinued, from necessity. There is scarcely one cow or beef on the range now where there were ten ten years ago. The ruinous business of shipping suckling calves of both sexes to the New Orleans market still continues. The decrease in cattle on the ranges of all who practice this, is making the pernicious results plain to all. Horses have done remarkably well as regards increase, but poorly as regards remuneration, there being no market for the surplus stock. A few mules have been sold, unbroken, at $40 per head. Except those lost by the great storm in September, sheep have done as well as the most zealous

sheep-raiser could wish. Wool is the great staple grown here. *Bell:* Very few hogs raised outside of inclosures, owing to depredations of bad white and black men. Hogs greatly improved in quality by importations of Poland, China, and black Berkshires. Neat cattle have been stolen, sold, and driven out of the county, until there is not enough left for home consumption. *Medina:* All the prices reported are in gold. *Bandera:* Mules mostly imported. Fat cattle, for shipping, are selling at $20 per head in coin. *Austin:* The tendency of horse-raisers is to increase the number of mules. Oxen fast disappearing, their place being taken by teams of horses and mules. The number of improved hogs has increased very materially.

ARKANSAS.—*Garland:* Never did we see horses so low. I can buy a horse, saddle, and bridle for $40, which one year ago would have cost $150. The great increase in cattle is due to those driven here from Texas. The decrease in sheep, caused by the heavy consumption at Hot Springs; but about 5,000 are coming from Texas, which will stock our county again. *Van Buren:* The decrease in oxen and other cattle owing to the short crops; every farmer sold off all his surplus stock. *Ouachita:* Scarcity of provisions has compelled the farmers to kill all cattle that were fat enough. There have been scarcely any hogs here; they were killed by cholera in 1871. *Fulton:* Owing to scarcity of corn and forage, farmers have disposed of their surplus stock, and consequently all kinds are low in price, particularly cattle and hogs, except fatted hogs, which are scarce. *Izard:* Horses, mules, and cattle as plenty as last year, but no demand for them, and but little to winter them on. Hogs exceedingly scarce. *Pope:* Owing to a light crop, stock of every kind is much lower in price than last year. A great many more cattle have been killed for beef than usual, owing to scarcity of bacon as well as of feed. Hogs have been neglected, but there is now a disposition to give them more attention, and they are increasing. *Arkansas:* A more ready sale for mules than other stock; several droves have been brought in and sold at $120 per head, cash, and at $170 on a year's time. The farmers are now raising mules. Cattle are plenty and cheap, owing to the want of hay. The wild hogs are mostly killed, and wild-hog claims are cheap. *Washington:* Owing to scarcity of feed, those that would buy hold over until spring; the seller would take a reduced price for all kinds sooner than buy feed at the high figure.

TENNESSEE.—*Lincoln:* Scarcely any demand for stock of any kind. It probably would not bring more than half of what it would twelve months ago, if sold for cash, owing to stringency of money and scarcity of feed. *McNairy:* Cattle, except milch-cows, have been killed almost by wholesale, owing to the high price of bacon (for which beef was substituted) and the very short corn and hay crops. *Coffee:* No demand for stock of any kind, except hogs, which have been sold at $7 per hundred, gross. *Bedford:* Decrease in stock, owing to scarcity of feed, which has forced owners to sell off all surplus stock ready for market at reduced prices. *Giles:* Owing to the drought most of our stock and pork hogs were sold off in July—not enough fattened in the county for home consumption. Very little demand for stock, and more on hand than formerly. Blooded cattle command $50 to $200; blooded or trotting horses, $200 to $5,000; Cotswold and Southdown sheep, $10 to $20. *Fayette:* The price of everything is low compared with any year since the war. Many complaints of hog-stealing; it is almost impossible to keep up the stock. *Green:* Bacon-hogs scarcer than usual; more attention to improved hogs. *Perry:* Except hogs and sheep, stock of all kinds is lower, and there is less demand for it than for twenty-five years. *Smith:* The improvements in breeds of sheep is very decided, and a greatly increased interest in sheep husbandry is growing up in the county. *Jackson:* Hogs exceedingly scarce in this county; scarcely a supply of pork for home consumption. Owing to the low prices of pork heretofore farmers have neglected hog-raising. *Woodruff:* The failure of mast for the past two years, with the short corn-crop, has considerably reduced the hog-crop, both in numbers and quality. *Grainger:* Very litttle market for live-stock of any kind, and all except hogs quite low in price, owing to scarcity of money. The average price of stock-cattle is $1.50 to $2 per hundred, gross; some few fat cattle are shipped East and South at $2 to $3, gross. Fat hogs, 7 cents, net. *Monroe:* Horses and mules low; no sales, and a surplus on hand. A slow but steady increase of blooded sheep; and if we had a stringent dog-law, sheep husbandry would be greatly increased. The low price of pork for a few years past has caused the decrease in the number of hogs. *Robertson:* No local demand for stock at any price. *Hawkins:* During the first quarter of the past year a larger number of hogs of all ages died than for some years previous. *Gibson:* Farmers were compelled to slaughter their surplus cattle to be able to winter the remainder, and as there is neither corn nor forage to be had except at the most extravagant prices, it is feared that large numbers of those will fall victims to extreme hunger. *Wayne:* Stock of every kind is low down, owing to shortness of crops and a scarcity of money; might say no sale at all. *Blount:* While there is a small increase in numbers of horses and mules, there is a corresponding decrease in price. Quite a decrease in price of cattle. Think sheep will command a higher price within the year, as a woolen factory will be in operation here in a short time. Hogs scarce, and in de-

mand. *Dickson:* The prices of stock of all kinds under that of former years, owing to scarcity of feed; large numbers of cattle and sheep butchered on this account. *Decatur:* Scarcity of money and of feed makes the prices of stock range low. *Morgan:* More than 50 per cent. of the horses, and 75 per cent. of the mules, are owned by contractors from other parts, now here operating on the line of railroad from Cincinnati to Chattanooga. A larger number of cattle than usual has been slaughtered to feed the laborers on this railroad. *Lauderdale:* Stock hogs, cattle, and horses, low, owing to scarcity of corn and money. *Lawrence:* From present indications, the county will be blessed with abundance of stock for all purposes at the opening of spring.

WEST VIRGINIA.—*Mercer:* Less than the usual number of horses sold, owing to scarcity of money. More mules raised than in any previous year. The number of cattle larger than usual, owing to a lack of purchasers. Hogs scarce, and not much in demand. *Mineral:* Horses more plenty and lower in price than ever known. Sheep scarce and high. Stock-hogs scarce. *Marion:* A decrease in cattle within last two years, amounting to 20 per cent. or 10 per cent per annum, owing to droughts and failure of grass-crops. An overstock of horses; markets low, and no demand at that. *Lincoln:* A decrease in hogs, owing to cholera. *Grant:* Horses more plenty than usual, and very dull sale. More mules raised of late, but few. The price of cattle a little better than last year. Hogs selling at five cents per pound, gross. Milch-cows plenty, and sale dull. *Jackson:* The decrease in stock owing to drought and scarcity of rough feed. *Ritchie:* The falling off in almost all kinds of stock owing to shortness of the hay-crop. *Gilmer:* Gradual increase in stock, owing to increasing population. *Tyler:* More farmers than usual sold off cattle, sheep, and hogs, owing to scarcity of feed. *Monroe:* Sheep rather scarce, and in demand. Horses plenty, and in very little demand even at the low rates quoted.

KENTUCKY.—*Shelby:* The low prices of horses and mules owing to failure in demand from the Southern and other markets. The falling off in oxen and other cattle is in feeding cattle two and three years old. A large number of sheep was brought into this county from districts in which drought prevailed. *Marion:* Last year there were 1,300 mules fed in this county, for the Southern market; this year there will be only about 300; stock-hogs dying very rapidly with cholera. *Jessamine:* Hogs dying of cholera. *Jackson:* The decrease in sheep is owing to sales to persons in other localities. *Fleming:* A falling off in prices of all kinds of stock, except sheep and hogs. *Cumberland:* Hogs exceedingly scarce, and bringing a high price. *Boyle:* The decrease in hogs largely owing to the fact that high prices for fat hogs have caused the feeding of much young stock. *Owsley:* Stock of all kinds low, owing to scarcity of money. More mules in the county than for years, and no market for them; not much trade in any stock, except fat hogs. *McLean:* Drought cut short our pasture, which induced a great many of our farmers to dispose of their entire flocks of sheep. The number of hogs greatly reduced by cholera. *Hardin:* Stock-hogs, 4½ cents per pound; fat hogs, $6.50 per hundred. *Breckinridge:* Owing to the light crops, farmers disposed of all the surplus stock they could; all kinds, except hogs, at very low prices. *Nicholas:* Mules lower in price than last year; hogs higher, by far. *Graves:* A decrease of 30 per cent. in hogs, caused by cholera. *Metcalfe:* More cattle and sheep shipped in the fall than usual; the county is nearer drained of hogs than ever known before. *Russell:* Stock of all kinds, except hogs, very dull; hogs scarce and in demand at good prices—4½ to 5 cents for stock-hogs.

OHIO.—*Williams:* The increased number of horses owing to a decline in prices and falling off in the Eastern demand; freight-horses at least 33½ per cent. lower than a year ago. Hogs sold off close, owing to the high price of corn. *Morrow:* More horses, dull sale, and reduced prices; and the same of mules. *Henry:* Increased price of corn induced farmers to sell short of hogs. Hogs of 100 pounds and upwards have sold freely, live weight, for 5 and 5¼ cents per pound. *Perry:* Only first-class horses, which are scarce, bring a good price; few buyers for others at low prices. Hogs nearly all killed or sold, owing to the shortness of the corn-crop. *Tuscarawas:* The high price of feed depreciates the price of stock. *Hancock:* Not half enough of stock to consume the immense amount of coin raised in the county last season. *Delaware:* Owing to scarcity of feed farmers have sold their stock quite close. *Crawford:* Horses and mules cheap; no demand for export. Sheep less in number and lower in price. Very few hogs alive in the county, except breeding-sows and boars; pork being high and corn cheap, as many were fattened and sold as possible.

MICHIGAN.—*Wexford:* Young cattle high; cows very high. *Lenawee:* We have many horses that are worth from $200 to $1,000 each. *Menomonee:* Horses and cattle not raised to any extent; the high price of hay and grain precludes it. *Tuscola:* The decrease in horses and working-oxen owing to a decrease in the lumber business and the substitution of cattle for horses on the farm. *Sagamore:* The price for horses has reference to the common class of the county. There is another class belonging to the lumber-trade, numbering some hundreds, weighing 1,400 to 1,700 apiece, and costing $200 to $1,000 per pair. Reports show an increase in the number of sheep, but I find that most of the large farmers have gone entirely out of the business.

INDIANA.—*Perry:* Beef-cattle, $6 net; hogs, $3 net. *Jennings:* Stock-hogs worth 5 cents gross. *Franklin:* Owing to scarcity of hay and high price of corn, horses and mules can be sold only at ruinous rates; and the prices of all kinds of stock to be kept over seriously affected by the same causes; no market for such. *Floyd:* Horses, mules, and cattle lower than for years. Hogs have sold at $4.75 to $7.20 per hundred. *Crawford:* No sales for horses and mules; beef-cattle have ranged very low. After consulting with many sheep owners and dealers I have placed the percentage at 60; but sheep have been in such demand for mutton and buyers so plenty that, in my own part of the county, I am sure that 40 represents the per cent. *Wells:* Mules, not raised until within the last few years, are being bred to a considerable extent. Sheep are raised for both wool and mutton, and are ready sale at all times. Hogs are our main crop, and, having an extra corn-crop, we have sold our hogs at good prices. More attention to breeding good stock of all kinds; a marked improvement in the last two years. Farmers do not now sell their calves for veal; they find it more remunerative to keep them until two or three years old. *Washington:* Owing to the high price hogs commanded, $5.50 per hundred, they were sold off very close. About 6,000 have been sold by our farmers to the pork-packers at Louisville, Ky., and New Albany, at an average of about 6½ cents per pound gross at our depots. *Posey:* Of mules, which are taking the place of work-horses, the number raised and now in use is greater than last year. Less number of cattle raised and fattened than last year, owing to the high price of feed. More attention to improved milch-cows; also to sheep, the quality of which is already greatly improved; but hogs have been more improved in quality than any other stock. One farmer, James Cole, delivered in our market this season 60 hogs, averaging 501¼ pounds net; William Warren raised here and sold one weighing 940 pounds gross—777 pounds net. *Orange:* Hogs have sold at 6 to 7 cents gross; and every hog big enough to grunt or squeal has been ordered to the front and captured. Cattle in moderate demand at 2 to 4 cents per pound gross. No sale for horses or mules. *Noble:* Not much sale for any stock except sheep and hogs. *Gibson:* Fewer stock-hogs than for several years. *Dearborn:* The high price of corn and the ready market for hogs have thinned our usual stock very much. *Boone:* The stock market, except for hogs, is duller than for many years. Horses, mules, and the lower grade of cattle not in demand at all. Feed is high, and very much stock will consume its value in feed before May. *Huntington:* Hogs run from $1 to $5 per hundred pounds. *Hamilton:* Very dull market for horses, mules, and cattle. Cattle lower than for years, and grain and feed so high that there is no money in feeding any stock. Stock-hogs rule high, 6 to 7 cents gross. *Clay:* Stock-hogs are being industriously hunted up at 5 cents per pound. *Tippecanoe:* We have as great a number of every variety as at any former period, except of mules, which, owing to the condition of the Southern market, have been steadily declining since the war. The prices of horses and mules are merely nominal, as it is almost impossible to effect sales at quotations. Sheep are much sought for, and the prices high; hogs range from $4 to $6 (according to quality) per hundred, and purchases hard to make at that. *Steuben:* Not more than one-fourth the number of hogs in the county in 1874 that there were in 1873; price in 1873, $3 to $3.50 per hundred pounds; in 1874, $6 to $6.50.

ILLINOIS.—*Morgan:* Horses not much in demand; mules sell better; not as many cattle feeding as usual. *Warren:* The sheep have been driven west to Colorado and California, leaving no large flocks in the county. The Norman horses are being very generally introduced for heavy draught; the half-bloods are proving altogether superior to the native stock. *Vermillion:* The price of all kinds of live-stock has been reduced fully 20 per cent., owing to scarcity of feed. Feed of all kinds 33 to 50 per cent. higher than usual. *Scott:* The decrease in cattle is owing to the cheapness at which they can be shipped in here from the West. *Lawrence:* Stock-hogs very scarce. *Edwards:* Owing to the high price of pork, everything available has been fattened, and no store-hogs are left for sale. Pork has been $6.50 gross, $8 net, and weighed heavy. The county is remarkable for fine-bred hogs, both Berkshire and Chester; Berkshire preferred. *Putnam:* All kind of stock, except hogs, in excess of one year ago. Hogs sold very short, owing to the short crop of corn. *Cass:* Horses dull of sale; mules more in use than formerly. There are, not including yearlings and younger, 4,000 cattle in the county feeding for beef. The raising of hogs would pay better than any other stock but for hog-cholera, of which hundreds die every year. *Carroll:* Several Norman stallions introduced into the county have somewhat increased the average value of colts, and heavy-draught horses are now being bought up for the Eastern market at an average of $250 per span. *Burrow:* But few sheep. *Winnebago:* Good common work-horses are worth $100 per head. *Shelby:* The ravages of cholera among hogs the past two years have been so great that many farmers are changing from hogs to cattle. The Cotswold sheep have been lately introduced, and are preferred over *all* others. *Ogle:* Prices of horses and mules nominal; but few selling. Dull market for oxen and cattle. Fat hogs higher in price, but stock-hogs lower, owing to the appreciation in the price of corn. *Johnson:* More mules raised than horses, but mules are exported to a much greater extent; hence the decrease in number. Little attention

to raising sheep. Our farmers sold all the hogs that were salable, the price being high and, except breeding-stock, only pigs are left. *Cumberland:* Very few horses and mules selling. Cattle of all kinds quite plenty, and very low in price. Young hogs for stock rather scarce; average price, $4 per hundred. *Saint Clair:* Work-oxen have become almost obsolete; do not know of a single yoke used on the farm. *Mason:* Owing to the high price of corn and the prevalence of cholera, hogs have been shipped out of the county more than usual. *Stephenson:* Fifty per cent. less sheep in the county than ten years ago.

WISCONSIN.—*Waupaca:* Live hogs selling at 6 to 7 cents per pound. *Juneau:* Live hogs worth 5½ cents. *Jackson:* Cattle quite plenty; market depressed, but heavy working-oxen range from $100 to $200 per yoke. The hog-crop is short, and coarse feed worth more per pound than wheat. *Vernon:* Quite a depreciation on cattle; working-oxen cheap and beef quite low, bringing only2½ to 3 cents on foot in the nearest market. Fat hogs in demand; bring readily 6 cents, live weight. Little trade in horses and mules. *Portage:* As in all new counties, horse-teams are steadily on the increase and ox-teams on the decrease. *Douglas:* Hard to fix on a cash price for anything; money is so scarce that people are ready to take just what they can get in cash. *Dunn:* Stock of all kinds low and dull of sale, owing in part to the high price of fodder and coarse grains. *Richland:* Live hogs, $6.50 per hundred to the growers. *Green Lake:* Few sales; none buying except at low figures, and none selling except from necessity. Sheep and hogs the only live-stock in demand. *Pierce:* Beef low; pork, good price, $7 per hundred. *Jefferson:* Cattle, especially for beef, lower, and hogs higher than usual. *Green:* Hogs have saved the farmers of this country.

MINNESOTA.—*Sibley:* The failure of the oat-crop has lessened the price of horses. The failure of crops for the past two years accounts for the increase in cows. Attention is more turned to stock-raising, and stock of all kinds would be much higher than now were it not for the scarcity of money. *Winona:* No live hogs in the market. *Isanti:* No demand for horses, work having stopped on all the railroads, and but little lumbering. For the same reason oxen and beef-cattle are very low in price. Sheep in good demand. *Blue Earth:* A stagnation in the horse-market for the past six months; horses plenty and very cheap; the same is true of cattle, sheep, and hogs. *Mower:* Owing to the high price of pork hogs have been nearly all killed; scarcely enough stock-hogs left for the wants of next season. *Lyon:* The large per cent. of increase is owing to the fact that the county is new and we have had a large immigration during the past year. *Steele:* The market for horses and mules dull; cattle have declined in value and are very slow of sale for ordinary grades. Though dairy products are in great demand, with the price of wheat so low, cows have not quite kept up to last year's prices. Improved breeds of all kinds of stock are working into general use, though not rapidly. *Renville:* The price of stock of all kinds except hogs is much lower than last year, owing to short crops. Not hogs enough raised to supply the home demand. A decrease in cows, oxen, and young stock, owing to the fact that they have been bought up for the Iowa market. *Meeker:* The low price of wheat has induced many to turn attention to stock-raising. *Kandiyohi:* Few mules raised; a good pair would bring $400; sheep decreasing every year. *Rock:* Scarcity of corn has lessened the percentage and price of hogs.

IOWA.—*Washington:* The high price of corn and pork has induced farmers to sell off both corn and hogs closer than usual, and consequently to fatten fewer cattle. *Powesheik:* No sales of horses. *Guthrie:* A great many hogs have died of cholera, so called; many lost all they had. *Scott:* Oxen but little used, probably not twelve yoke in the county. For the past few years sheep husbandry has received more attention by a few men, who make it a specialty. They are not kept, as a general thing, by the farmers. The decrease in hogs is owing to the extreme high price in December, when all fit to kill were sold. *Johnson:* Live hogs selling at $6 to $6.30 per hundred. Shippers offering $5 per hundred for No. 1 steers. *Cherokee:* Hogs as high as $6 per hundred, gross. *Cass:* Decrease in hogs owing to a fearful scourge of hog-cholera; some of our farmers and feeders have lost as many as 400 each, and from that all the way down to lots of 8 and 10. No treatment seems to be of any avail. *Polk:* Cattle lower in price than at any time since the war, owing mainly to the great swarms of Texas cattle constantly being shipped into this section. Hogs higher than usual. *Harrison:* Increase in cattle, owing to the number brought in from the grasshopper regions of Kansas and Nebraska. Every pig that can be got into market being sold, yet many more hogs in the county now than at this time last year, owing to immigration. *Ida:* No sheep in this county last year; 150 now. Sheep seem to do first rate on this rolling prairie. *Sioux:* The decrease in hogs owing to the entire destruction of the corn-crop by grasshoppers. *Marion:* One-third of the fat hogs yet in the hands of feeders; parties holding for 6 to 7 cents per pound gross. *Des Moines:* Prices of all kinds of stock receding. Work-horses very low. Six cents, live weight, has called out all the available hogs for meat, and the shortness of the corn-crop has stimulated the sales. *Hancock:* Mules growing in favor for farm use; more profitable to raise than horses. A great desire to increase the number of cows, and the raising of stock receiving a good share of atten-

tion. *Buchanan:* Difficult to fix the prices of horses and mules, because so many are sold at forced sales. Hogs much advanced in price. *Madison:* The number of cattle being fed for spring market about 40 per cent. less than last year, and the same decrease in hogs.

MISSOURI.—*Polk:* Owing to short crops, farmers have sold all stock which could be put in condition to sell. *Platte:* Horses and mules much lower in price than I have ever known; no demand for them at any price. Milch-cows in demand. Owing to scarcity of corn and the high price of hogs, all that could be made to reach 150 pounds have been sold to packers; consequently, stock-hogs are scarce, and meet with ready sale at 4 cents gross. *Jefferson:* The loss on hogs from cholera has been great; all killing hogs and fat. Within 4 miles some 64 were well one day and dead the next. *Maries:* But few horses and mules sold, the market being very dull. Scarcity of grain and feed has compelled farmers to sell cattle and sheep at very low figures, being the only stock they could sell, except pork-hogs, which have borne a good price, 4 to 6 cents gross. *Chariton:* Owing to the scarcity of corn, most of the hogs have been sold into more favored counties and other States. As the hay-crop was good, very few horses, mules, or cattle have been sold. Prices rule low, owing to a scarcity of money. *Benton:* The extraordinarily low prices of stock are owing to the destruction of the corn, oat, and hay crops by drought and chinches. *Stone:* Twenty per cent. of the hogs have died of cholera and staggers. Horses, mules, and cattle very low; no demand for the former, and but little for the latter. *Shelby:* Horses, mules, and cattle selling low, owing to scarcity of money. *Ray:* The reduction in cattle and hogs caused by light crops for the last two years. *Caldwell:* The decrease in all kinds of cattle owing to drought and short corn-crop. All salable cattle have been sold, making 25 per cent. decrease in the whole. No sale for horses. Hogs of all kinds sold off very close; scarcely any left but sows and small pigs. *Daviess:* All stock depreciated in price, owing to the short crops, followed by drought. Nearly all hogs not killed for home consumption shipped out of the county as stock-hogs; not corn here to winter them. *Bates:* We lost everything last fall by chinch-bugs and grasshoppers, and all kinds of stock are down to the very lowest notch. *Randolph:* All kinds of stock scarce for want of feed. Cattle and hogs large enough to be fed for market nearly all shipped from the county. Considerable demand for horses and mules. *Laclede:* Stock of every kind, except hogs, very low, owing to scarcity of money. Last year we lost heavily in hogs by diseases, and have not yet recovered; not enough in the county for home use. *Howard:* Owing to the very short crop of corn a large number of farmers could not winter their hogs, but were compelled to sell them. *Clay:* But little feed, and not much stock to feed. *Callaway:* The failure of the corn-crop has reduced the number of cattle and hogs very much. Horses plenty, because the demand is light. *Putnam:* Stock meets with a ready sale here, and farmers are having a good time of it. *Vernon:* Great falling off in prices of stock, owing to a scarcity of money. Thousands of stock hogs sold into Iowa and Illinois on account of short crops. *Johnson:* No sales of horses for shipment; prices very low. Price of mules higher than horses, as it costs less to keep them. Nearly all cattle that could be spared have been sold. Very few other than cows over three years old left in the county. *Dent:* Value of stock of all kinds depreciated by bad condition, owing to scarcity of feed. *Adair:* Most of the farmers who heretofore raised horses are raising mules. *Barton:* Failure of corn caused nearly all the hogs to be shipped out of the county. *Carroll:* The decrease in cattle and hogs caused by the short corn-crop.

KANSAS.—*Mitchell:* Stock of all kinds of but little value, there being no money to invest in it and nothing to feed on—especially horses and hogs. Pigs under six months old may be had for the asking; but who has feed for hogs? None. *Ottawa:* Owing to scarcity of feed the price of stock has ruled low, especially cattle and hogs, more especially hogs. *Marshall:* The diminution in cattle and hogs is owing to sales in consequence of the failure of the corn crop. *Cowley:* Every kind of stock low, owing to scarcity of feed. *Cherokee:* Horses very low, owing in part to scarcity of feed, but many are disposing of their horses and investing in mules, which are less subject to disease and better adapted to farming on short allowance of grain. *Anderson:* Very few hogs can be carried through. *Sedgwick:* Some losses in horses and hogs for want of feed. *Osage:* Horses at extremely low prices; also cattle are scarcely salable at all. Nearly all hogs sent out of this part of the State to keep them from starving to death. Over 30 horses have died of starvation within the last six weeks. *Nemaha:* Only enough hogs are wintered to raise another stock from. *Lincoln:* A falling off in oxen and cows, owing to the passage of a strict cattle law, in consequence of which some heavy dealers have driven their stock beyond the settlements. Hogs scarce, owing to the failure in the corn-crop; hundreds have been given away to keep them from starving. *Leavenworth:* Cattle were sold very close, owing to short feed. Hogs, all or nearly all, sold off on account of scarcity of corn. *Jackson:* Farmers generally raising mules more than heretofore. Oxen and other cattle sold off to Iowa and other places, owing to scarcity of grain; also hogs. *Franklin:* Horses low in price and condition, owing to the almost total failure of the corn-crop and no buyers. Many work-

horses are not fed one ear of corn per week, and must die before spring. Stock hogs have been sold to more favored localities, and many of those having pigs have given them away to whoever would take them. *Johnson:* But few hogs left. *Jefferson:* Nearly all the hogs shipped; stock low, owing to scarcity of money and feed. A continual decrease in the number of sheep kept. With our system of open fences and with the depredations of dogs and wolves, farmers do not find them profitable. *Cloud:* Farmers turning their cattle off and going into sheep husbandry as fast as possible, for the reason that we have a large per cent. of high rolling-land covered with buffalo and bunch grass, on which sheep do well the year round. The decrease in hogs owing to the total failure in the corn-crop. *Atchison:* Owing to the failure in corn, cattle have declined in price more than other stock, except hogs. Many pigs have been killed to save feed. *Miami:* Owing to scarcity of crops and money, cattle are very low in prices, and a great many have been taken to the fruitful regions of Iowa for wintering. *Wilson:* The very low prices of all kinds of stock owing to a failure in all crops except wheat. *Labette:* Scarcity of corn and oats has depreciated the prices of all kinds of stock 33 per cent. Several have fattened their hogs on wheat altogether, and many are feeding wheat to horses. *Graham:* Hogs are at a high discount, as we have no grain to feed except wheat and not enough of that for bread. Do not know of a sheep in the county, though the climate is peculiarly adapted to wool-growing. *Clay:* Quite an interest starting up in the sheep business. *Shawnee:* Decrease in cattle and hogs owing to drought and grasshoppers. *Sumner:* Hogs nearly all sold or killed; worth nothing unless fat and nothing to fat them on. Everything down in price. *Doniphan:* Scarcity of corn has induced farmers to send their stock to places where there is more feed. Probably as much stock owned in the county as formerly. *Butler:* Hundreds of hogs killed last fall to get them out of the way, there being nothing to feed them. Horses are beginning to die for want of grain; eastern horses will not live through the winter on prairie hay. *Chase:* Failure of corn has taken most of our hogs out of the county; no sale for horses; cattle dull. *Montgomery:* The shortened corn-crop has reduced the number of cattle 20 per cent. and of hogs about 75 per cent. *Shawnee:* The large number of "Indian ponies" brings the average price of horses very low. The great reduction in oxen and other cattle was caused partly by the death of such stock last winter and partly by the destruction of the corn-crop. Most of the cattle over two years old have been driven to States farther east—the greatest number to Iowa. Hundreds of pigs were knocked in the head to keep them from starving.

NEBRASKA.—*Dixon:* The decrease in hogs owing to the failure of corn-crop. *Lincoln:* Our milch cows, being natives, (not Texans,) average higher than steers. A fresh milch cow would bring $55 to $60. But few sheep, and none for sale at any price. *Richardson:* Stock hogs decreasing owing to scarcity of corn. No fattening cattle; prices low and no sale. *Boone:* The low percentage of hogs owing to the destruction of corn-crop by grasshoppers. All hogs that would sell were sold early in the season at 2¾ to 3 cents per pound to turn in with fattening steers in Iowa. In these grasshopper regions all the pork made was made on wheat. *Jefferson:* Stock of all kinds very low; hard matter to get money for it at any price. Owing to loss of corn-crop hogs are either sold or given away. Many farmers have killed off their entire stock, though not half fattened. *Pawnee:* The great decrease in hogs caused by the failure in corn. *Merrick:* No feed to keep hogs. *Nemaha:* Owing to failure in corn, cattle and hogs have been run out very close, and the farmers are now feeding wheat largely. Not 50 head of cattle being fed for beef in the county, while usually individuals feed that number. A great desire to sell horses and scarcely any demand. *Antelope:* From scarcity of grain horses have depreciated in value, but mules are in demand, and working-oxen have appreciated in value 25 per cent. Milch cows in demand, but owing to scarcity of money slightly depreciated in price. Sheep, of which 900 were introduced the past season, are doing finely, and will increase rapidly. The destruction of the corn-crop has materially lessened the number of hogs and slightly their value.

CALIFORNIA.—*Sutter:* Spanish horses on the decrease; average price, $10. Good, large American horses bring from $120 to $200, and are in great demand. Wild or Spanish cattle, formerly so plenty, are on the decrease, while there has been a large increase of short-horn cattle and milch-cows. *Plumas:* The amount of neat stock, and particularly dairy-cows, constantly on the increase, for the reason that this is the surest and most profitable branch of husbandry in this locality, except sheep-husbandry. *Alameda:* For a few years horses have been increasing beyond the demand for farm or team, and fancy and fast horses are the only ones that are paying for raising. Cattle have also increased beyond consumption; and there being no outlet for them on this coast, prices range low. Sheep doing better in price than either horses or cattle. The abundance of feed has stimulated large numbers to go into the growing of wool. Hogs selling at good prices, in consequence of short crops reported in some of the States on the Mississippi. *Placer:* Cattle rule low; sheep hold their own; while hogs, which have fallen off about 33⅓ per cent., command much higher prices than one year ago. *Contra Costa:* Farm-work horses, small size, sell for $75 to $100; medium size and heavy, $150 to $200; any way stylish and large, $200 to $450; the same of mules. *San*

Bernardino: Cattle, cows, and hogs slowly diminishing, as more attention is being paid to the raising of sheep, which is found more profitable.

OREGON.—*Grant:* A slight reduction in the price of horses of the same quality, but, owing to improvement in bloods, the average is as high as one year ago; considerable reduction in the price of oxen and other cattle; 10 per cent. in the price of cows, and a decrease in the value of hogs, owing to outside competition. *Clackamas:* Railroads and steamboats have done away with the necessity of so many horses. *Tillamook:* Marked improvement in the stock of horses; prices tending upward. Market dull for cattle, and few sales. A large increase in milch-cows, dairying being the most profitable business in our county. Graded sheep do the best, and there is a marked improvement over last year. *Douglas:* The great decrease in horses owing, in part, to the fact that farmers are raising less, finding sheep more profitable, and, in part, to the many that were bought up last spring for military purposes. The increase in cattle occasioned by no demand for them the past year. Sheep in active demand; very few for sale until after shearing. The low price of grain of all kinds creates quite an active demand for hogs.

COLORADO.—*Rio Grande:* Stock-raising in this county on a large scale no longer a paying business; therefore cattle are decreasing. Horses and sheep are increasing. Sheep pay best. The fleece of the Mexican sheep is improving, both in weight and quality. *Douglas:* The county was divided in 1874, and a new county, Ebert, formed, taking three-fourths of the oxen and other cattle and one-fourth of the cows. As many sheep have come into the county as the new county took.

UTAH.—*Box Elder:* All cattle, especially beef, are low in price. Montana Territory produces cattle in great abundance for both Eastern and Western markets, which affects our market unfavorably. *Salt Lake:* The value of horses, cattle, and cows has been rapidly on the decrease the past year. Great numbers of wild horses have been brought here from California and sold as low as $50 per span. They are tough and hardy, and, when crossed with blooded stock, make the most serviceable animals for this region. Large quantities of beef have been shipped here by rail, which has caused the decline in cattle. *Sevier:* Mules not raised; increase in other stock from increase in population, which is probably 25 per cent.

WASHINGTON.—*Thurston:* Cattle very low; beef 2 to 5 cents; horses low; hogs advancing in price; bring 6 to 7 cents per pound. No sale for cows. Sheep higher than last year.

THE DOG WARFARE.

The warfare of dogs upon sheep still continues; the direct losses are a million of dollars annually, in wool and mutton, and, indirectly, even a larger sum in the repression of sheep-husbandry, and the consequent waste of a large percentage of the annual crop of grass; a crop more valuable than that of cotton or corn, throughout the Southern States and elsewhere in all dog-cursed sections of the country. The canine warfare is a badge of vagabondage, an indication of savagery and lawlessness inconsistent with a progressive state of agriculture. In communities where "every poor man keeps a dog, and every very poor man keeps two," the average legislative candidate dares not pledge himself to vote for a dog-law. Until recently, only a few States in which wool-growing is prominent had dog-laws, which is equivalent to saying that the ideas on which our agriculture was based were primitive, and its rural processes crude. Laws are now in force in a large proportion of the States, and in several are quite efficient and protective. Farmers are agitating for the passage of such laws in the remaining States. In the Southern States the insane pursuit of cotton to the social ostracism of every one who dared to produce meat or grow fruit, for many years kept sheep-husbandry at the lowest ebb, while it was known by all intelligent men not stricken with the prevalent mania that millions of acres of succulent grasses were annually lost in decay in all the southern prairies, the open pine-forests, and the elevated glades of that sunny region. There should at once be enacted there stringent laws for protection against the ravages of dogs, quadruped and biped, black and white. The result would in twenty years appear in a degree of

wealth to which this section has never before attained, for it would revolutionize and vitalize the entire agriculture of this section.

We have repeatedly attempted to gather some of the items of loss by this scourge. In our stock-returns of this month there are reports from five hundred counties, with some losses reported, of course not all occurring, but they make an aggregate of 79,285 sheep killed during the past year, in counties holding one-fourth of the territory, and nearly one-fourth of the sheep of the United States. In twenty-four counties in Ohio, 6,517 are reported killed, or four-tenths of one per cent. of the sheep. This is probably not more than one-half the real number, as the State report of Ohio for 1873 makes the loss for that year 35,440, or seventy-seven hundredths of one per cent. of total numbers. Besides this, 35,124 were injured in that year by dogs, entailing a loss of $47,210 in addition to $110,044 for those killed outright.

It is very evident that the real losses by dogs amount to one and one-fourth per cent. of the value of the sheep in Ohio, and more than two per cent. throughout the country, or $1,000,000. The percentage of loss is vastly greater in States where no efficient laws exist. As far as the territory is reported on in these January returns, (as shown in the accompanying table,) the annual losses in Florida amount to 11 per cent. of value; Arkansas, 6; Georgia, 5.16; Tennessee, 4.6; Kansas, 3.8; Virginia, 3.4; Missouri, 2.2. In protected States: Ohio, four-tenths of one per cent.; New York, three-tenths. The reported losses are as follows, which do not include the maimed or injured:

States.	Number of counties reported.	Number of sheep killed.	Number of sheep in those counties in 1870.	States.	Number of counties reported.	Number of sheep killed.	Number of sheep in those counties in 1870.
Maine	3	704	59,635	Arkansas	14	2,258	36,984
New Hampshire	5	751	97,767	Tennessee	27	11,467	248,595
Vermont	7	525	262,544	West Virginia	20	2,870	185,257
Massachusetts	3	190	33,879	Kentucky	31	6,026	277,382
Connecticut	3	231	46,398	Ohio	24	6,517	1,523,074
New York	18	2,693	858,845	Michigan	17	3,280	810,576
New Jersey	2	243	15,352	Indiana	26	7,394	415,674
Pennsylvania	23	3,878	820,406	Illinois	27	6,413	398,711
Delaware	1	150	5,316	Wisconsin	14	1,658	262,171
Maryland	9	1,222	49,981	Minnesota	11	741	28,451
Virginia	34	4,205	127,952	Iowa	17	1,702	203,841
North Carolina	26	5,503	162,463	Missouri	43	13,146	585,027
South Carolina	4	925	13,451	Kansas	11	909	23,497
Georgia	20	3,363	65,131	Nebraska	3	128	1,435
Florida	5	458	4,021	California	9	1,965	681,146
Alabama	11	1,910	44,137	Oregon	5	686	109,441
Mississippi	12	1,764	43,421				
Louisiana	4	466	9,723	Total	500	79,485	8,572,744
Texas	11	1,144	61,060				

The losses in detail are thus reported. If too many or too few, we should be glad to recive corrections:

Maine: Waldo, 100; Lincoln, 450; York; 154; total, 704; total number of sheep in these counties in 1870, 59,635.

New Hampshire: Cheshire, 200; Sullivan, 30; Strafford, 121; Coos, 200; Carroll, 200; total, 751; number of sheep, 97,767.

Vermont: Rutland, 250; Washington, 30; Chittenden, 40; Caledonia, 125; Lamoille, 6; Grand Isle, 24; Addison, 50; total, 525; number of sheep, 262,544.

Massachusetts: Dukes, 15; Berkshire, 100; Plymouth, 75; total, 190; number of sheep, 33,879.

Connecticut: Litchfield, 100; New London, 35; Hartford, 96; total, 231; number of sheep, 46,398.

New York: Delaware, 200; Tompkins, 320; Steuben, 119; Rensselaer, 95; Schuyler,

86; Green, 160; Columbia, 350; Albany, 200; Saratoga, 120; Madison, 100; Genesee, 250; Fulton, 50; Cattaraugus, 240; Suffolk, 100; Sullivan, 18; Washington, 200; Livingston, 85; Jefferson, 20; total, 2,693; number of sheep, 858,845.

New Jersey: Camden, 43; Warren, 200; total, 243; number of sheep, 15,352.

Pennsylvania: Sullivan, 125; Perry, 150; Wayne, 150; Union, 50; Columbia, 250; Bedford, 200; Adams, 100; Warren, 190; Washington, 200; Tioga, 100; McKean, 60; Indiana, 63; Bucks, 10; Lancaster, 200; Chester, 500; Frie, 50; Fayette, 375; Forest, 20; Lawrence, 600; Clinton, 75; Cameron, 50; Berks, 60; Luzerne, 300; total, 3,878; number of sheep, 820,406.

Delaware: Kent, 150; number of sheep, 5,316.

Maryland: Worcester, 250; Frederick, 78; Dorchester, 80; Baltimore, 250; Harford, 65; Saint Mary's, 200; Wicomico, 80; Howard, 200; Cecil, 19; total, 1,222; number of sheep, 49,981.

Virginia: Sussex, 20; Tazewell, 100; Pulaski, 50; Pittsylvania, 120; Northumberland, 90; Henrico, 20; Frederick, 50; Caroline, 50; Bedford, 100; Stafford, 25; Spottsylvania, 2; Shenandoah, 75; King William, 50; Floyd, 50; Cumberland, 36; Madison, 100; Loudoun, 376; Dinwiddie, 35; Buchanan, 200; Nelson, 300; Highland, 1,200; Bland, 40; Washington, 200; Orange, 50; Louisa, 209; Craig, 15; Page, 125; Middlesex, 27; Essex, 40; Roanoke, 50; Matthews, 50; Montgomery, 150; Northampton, 300; Westmoreland, 100; total, 4,205; number of sheep, 127,952.

North Carolina: Wayne, 43; Transylvania, 40; Greene, 100; Gaston, 150; Chowan, 5; Cherokee, 50; Rowan, 50; Beaufort, 95; Stokes, 200; Randolph, 1,500; Hertford, 250; Alamance, 100; Yancy, 700; Haywood, 200; Alexander, 200; Wilkes, 250; Mitchell, 200; Gates, 100; Warren, 100; Montgomery, 200; Ashe, 120; Buncombe, 100; Jackson, 100; Onslow, 100; Stanley, 200; Guilford, 550; total, 5.503; number of sheep, 162,463.

South Carolina: Barnwell, 125; Newberry, 200; Williamsburgh, 100; Orangeburgh, 500; total, 925; number of sheep, 13,451.

Georgia: Telfair, 300; Harris, 182; Douglas, 25 per cent.; Taylor, 100; Houston, 200; Terrell, 135; Gordon, 300; Floyd, 50; Camden, 20; Banks, 50; Brooks, 500; Fulton, 30; Wayne, 50; Murray, 50; Jefferson, 96; Hall, 500; Forsyth, 50; Wilkinson, 20; Worth, 250; Early, 50; Montgomery, 200; Appling, 200; total, 3,363; number of sheep, (not including Douglas,) 65,131.

Florida: Taylor, 15; Santa Rosa, 300; Jackson, 35; Columbia, 83; Suwannee, 25; total, 458; number of sheep, 4,021.

Alabama: Saint Clair, 500; Lauderdale, 300; Jefferson, 100; Choctaw, 150; Covington, 85; Conecuh, 10; Shelby, 115; Monroe, 300; Geneva, 200; Morgan, 100; Franklin, 50; total, 1,910; number of sheep, 44,137.

Mississippi: Hancock, 50; Jackson, 300; Covington, 25; Yalabusha, 300; Winston, 200; Tishemingo, 20; Marion, 375; Amite, 180; Holmes, 50; Madison, 80; Smith, 50; Franklin, 134; total, 1,764; number of sheep, 43,421.

Louisiana: Washington, 50; Caddo, 216; Cameron, 100; Franklin, 100; total, 466; number of sheep, 9,723.

Texas: Kendall, 20; Comanche, 249; Rusk, 20; Dallas, 20; Cherokee, 70; Williamson, 115; Collin, 125; Galveston, 20; De Witt, 150; Cook, 50; Leon, 125; total, 1,144; number of sheep, 61,060.

Arkansas: Stone, 200; Sebastian, 100; Garland, 25; Craighead, 97; Ouachita, 100; Baxter, 500; Cross, 40; Sharpe, 200; Izard, 200; Fulton, 100; Dallas, 100; Arkansas, 75; Scott, 18; Benton, 500; total, 2,258; number of sheep, (not including Baxter, Garland, and Stone,) 36,984.

Tennessee: Rhea, 21; Coffee, 405; Giles, 1,750; Sullivan, 150; Perry, 500; Hancock, 100; Hardin, 100; Bradley, 33; Montgomery, 300; Jackson, 125; Heywood, 1,174; Smith, 150; Warren, 100; Monroe, 150; McMinn, 300; Carter, 75; Fentress, 107; Washington, 400; Wayne, 500; Robertson, 1,115; Sequatchie, 660; Decatur, 1,695; Dickson, 300; Lauderdale, 312; Union, 75; Sumner, 800; Morgan, 70; total, 11,467; number of sheep, 248,595.

West Virginia: Barbour, 20; Braxton, 25; Mineral, 50; Morgan, 40; Mercer, 60; Preston, 300; Putnam, 200; Tucker, 53; Wayne, 50; Gilmer, 100; Jefferson, 200; Pocahontas, 52; Cabell, 40; Kanawha, 110; Tyler, 75; Doddridge, 50; Harrison, 400; Mason, 125; Monongalia, 500; Randolph, 20; total, 2,870; number of sheep, 185,257.

Kentucky: Boyle, 140; Butler, 200; Clinton, 31; Cumberland, 120; Fayette, 230; Jackson, 30; Jessamine, 75; Lewis, 275; La Rue, 20; Laurel, 78; Marion, 100; Mercer, 100; Shelby, 300; Warren, 827; Boone, 350; Breckinridge, 125; Christian, 218; Grayson, 50; Hardin, 300; Logan, 483; Owen, 100; Owsley, 50; Spencer, 47; Ballard, 500; Kenton, 25; Nicholas, 182; Carroll, 60; Ohio, 100; Rock Castle, 30; Graves, 580; Russell, 300; total, 6,026; number of sheep, 277,382.

Ohio: Auglaize, 185; Ashland, 250; Henry, 85; Hocking, 263; Jackson, 387; Union, 97; Monroe, 407; Vinton, 120; Williams, 71; Fairfield, 800; Guernsey, 190; Hardin, 150; Licking, 160; Lorain, 132; Mahoning, 200; Perry, 200; Sandusky, 300; Warren,

525; Fayette, 600; Geauga, 95; Hancock, 140; Tuscarawas, 659; Huron, 175; Morgan, 326; total, 6,517; number of sheep, 1,523,074.

Michigan: Menomonee, 50; Livingston, 100; Allegan, 27; Genesee, 250; Hillsdale, 200; Van Buren, 50; Jackson, 500; Macomb, 200; Sanilac, 21; Tuscola, 38; Mecosta, 17; Ottawa, 70; Barry, 100; Ingham, 200; Montcalm, 157; Cass, 1,000; Kalamazoo, 300; total, 3,280; number of sheep, 810,576.

Indiana: Clinton, 150; Knox, 400; Ohio, 25; Perry, 150; Ripley, 500; Union, 150; Boone, 78; Cass, 306; La Porte, 200; Martin, 230; Orange, 1,200; Posey, 171; Shelby, 400; Warren, 100; Washington, 150; Huntington, 50; Pike, 200; Whitley, 600; Brown, 200; Fulton, 240; Hamilton, 300; Switzerland, 73; Tippecanoe, 621; Tipton, 300; Bartholomew, 450; De Kalb, 150; total, 7,394; number of sheep, 415,674.

Illinois: De Kalb, 500; Logan, 110; Schuyler, 200; Woodford, 20; Edwards, 200; Grundy, 100; Jackson, 127; Lawrence, 150; Pope, 500; Scott, 437; Stark, 50; Williamson, 200; Carroll, 50; Cass, 300; Lee, 28; Pulaski, 100; Clay, 200; De Witt, 500; Clark, 1,000; Clinton, 100; Johnson, 45; Shelby, 71; White, 1,000; Hancock, 125; Sangamon, 100; Mercer, 100; Stephenson, 100; total, 6,413; number of sheep, 398,711.

Wisconsin: Juneau, 5; Vernon, 38; Waupaca, 100; Crawford, 185; La Fayette, 500; Pekin, 20; Brown, 20; Columbia, 118; Douglas, 2; Sauk, 100; Calumet, 60; Richland, 300; Green, 50; Jefferson, 160; total, 1,658; number of sheep, 262,171.

Minnesota: Steele, 19; Olmsted, 200; Rice, 30; Sibley, 35; Sherburne, 135; Isanti, 70; Lyon, 50; Faribault, 87; Nicollet, 75; Todd, 25; Pope, 15; total, 741; number of sheep, (not including Lyon,) 28,451.

Iowa: Washington, 25; Allamakee, 90; Cass, 50; Fayette, 100; Jasper, 175; Jones, 75; Scott, 27; Decatur, 500; Fremont, 200; Marion, 200; Winnesheik, 19; Benton, 78; Mahaska, 75; Buchanan, 25; Ida, 8; Madison, 5; Shelby, 50; total, 1,702; number of sheep, 203,841.

Missouri: Pike, 100; Benton, 150; Chariton, 270; Clarke, 300; Greene, 1,500; Maries, 170; Miller, 25; Moniteau, 1,000; Nodaway, 233; Pettis, 230; Polk, 350; Rolls, 125; Caldwell, 400; Franklin, 300; Madison, 375; Montgomery, 300; Morgan, 130; Newton, 1,000; Phelps, 250; Saint Francois, 30; Shelby, 200; Bates, 478; Daviess, 200; Callaway, 760; Clay, 250; Douglas, 50; Howard, 500; Randolph, 1,000; Stoddard, 300; Jackson, 10; Putnam, 500; Adair, 400; Dent, 125; Lincoln, 300; Macon, 100; Vernon, 250; Carter, 100; Dade, 90; Henry, 100; Oregon, 60; Ozark, 60; Schuyler, 20; Texas, 60; total, 13,146; number of sheep, 585,027.

Kansas: Marshall, 20; Allen, 150; Lincoln, 102; Nemaha, 16; Neosho, 100; Woodson, 120; Cloud, 7; Lyon, 84; Labette, 35; Wilson, 225; Butler, 50; total, 909; number of sheep, 23,497.

Nebraska: Dixon, 11; Pawnee, 17; Nemaha, 100; total, 128; number of sheep, 1,435.

California: Alameda, 43; San Luis Obispo, 300; Mendocino, 400; Placer, 300; El Dorado, 100; Fresno, 25; Santa Clara, 500; Tulare, 200; Humboldt, 97; total, 1,965; number of sheep, 681,146.

Oregon: Lane, 300; Clackamas, 50; Multnoma, 60; Curry, 150; Linn, 126; total, 686; number of sheep, 109,441.

Table showing the average yield per acre and price of the principal crops of the United States in December, 1874, and the area and condition of winter grain.

States.	CORN.		WHEAT.		RYE.		OATS.		BARLEY.		BUCKWHEAT.		POTATOES. (*Solanum tuberosum.*)	
	Average yield per acre in 1874, stated in bushels.	Average price per bushel on 1st day of December, 1874.	Average yield per acre in 1874, stated in bushels.	Average price per bushel on 1st day of December, 1874.	Average yield per acre in 1874, stated in bushels.	Average price per bushel on 1st day of December, 1874.	Average yield per acre in 1874, stated in bushels.	Average price per bushel on 1st day of December, 1874.	Average yield per acre in 1874, stated in bushels.	Average price per bushel on 1st day of December, 1874.	Average yield per acre in 1874, stated in bushels.	Average price per bushel on 1st day of December, 1874.	Average yield per acre in 1874, stated in bushels.	Average price per bushel on 1st day of December, 1874.
Maine	24.6	$1 13	15	$1 54	17.7	$1 19	28	$0 67	20	$0 93	22	$0 77	1.23	$0 54
New Hampshire	36.4	1 12	16	1 55	22	1 20	37.6	65	26	1 02	20	62	1.20	59
Vermont	36.1	1 10	17	1 43	16.5	1 06	37	57	28	1 01	22.5	73	1.45	43
Massachusetts	32	1 10	14.5	1 45	13.8	1 11	36.2	67	22.3	1 02	15	72	1.10	69
Rhode Island	24.3	1 18	.....	.....	17	1 16	30	73	26	1 12	.....	.....	95	82
Connecticut	30	1 17	18	1 45	14.5	1 21	31.5	72	22	1 18	16	91	1.05	72
New York	30	93	15.6	1 26	14.1	92	32.8	57	21.7	1 17	18	80	1.05	57
New Jersey	35	84	15.5	1 30	13.1	92	22.5	60	18	1 20	14.1	88	70	78
Pennsylvania	33.2	76	14.8	1 21	14.3	90	24.6	59	23	1 00	20.4	85	84	79
Delaware	18	70	11	1 31	11.2	75	21	52	16.8	1 00	22.5	80	70	72
Maryland	20.5	73	10.7	1 22	11.5	87	16.5	55	18	1 00	18.2	82	50	78
Virginia	20	64	7.8	1 17	10.5	79	11.5	54	12	95	13.5	70	68	64
North Carolina	16.4	72	8	1 38	8.5	92	12.9	66	16	80	14.5	58	75	69
South Carolina	11	1 00	6.3	1 85	7	1 55	11.5	91	15	82	.....	.....	70	97
Georgia	11.1	92	7.3	1 53	7	1 51	10.2	88	14.5	1 87	.....	.....	70	1 09
Florida	10.6	99	.....	.....	10.1	1 74	12	1 01	.....	.....	.....	.....	1.17	1 55
Alabama	12.3	93	9	1 46	9.1	1 50	11.6	91	11.5	1 00	.....	.....	60	1 31
Mississippi	13.8	1 01	9.2	1 75	9.4	1 61	14.5	1 02	.....	.....	.....	.....	56	1 17
Louisiana	15.5	1 00	.....	.....	.....	.....	12.3	1 08	.....	.....	.....	.....	60	96
Texas	19	75	12.5	1 35	13	1 11	27.2	84	30.5	86	.....	.....	70	1 49
Arkansas	12.6	95	10.5	1 52	12.7	1 37	15	75	.....	.....	.....	.....	43	1 09
Tennessee	16.8	68	9	1 06	10.5	1 05	14	57	20.4	1 12	12	74	50	97
West Virginia	26.5	61	11.6	1 00	13.1	86	16.4	53	18	1 00	17.7	81	76	72
Kentucky	25	55	10.6	1 00	11	92	14.4	55	27	1 12	15	84	46	99
Ohio	36	58	15	1 04	12.6	81	20.5	49	23	1 10	12.5	90	71	86
Michigan	27	65	14.2	1 08	14.6	81	27	50	17.5	1 15	15.5	77	87	63
Indiana	27	51	12.2	94	14.5	77	19	44	20.6	1 10	14	56	60	81
Illinois	18	56	11.5	86	15.4	71	17.5	45	17.2	97	13	88	55	83
Wisconsin	28.2	63	11.5	83	13.3	78	26.2	46	20	1 00	15.5	62	87	49
Minnesota	31	51	14.8	70	18.5	59	30	44	24.2	83	14	73	70	49
Iowa	29.2	43	11.6	65	17.2	63	30	38	20	77	13.2	73	63	50
Missouri	16	74	13.5	83	14.7	69	22	47	18.2	1 07	13	69	40	85
Kansas	12.3	91	13.3	84	15.6	65	26.3	53	19.4	79	.....	.....	24	1 12
Nebraska	10	73	11.6	60	17.5	74	23.1	50	24.4	86	.....	.....	33	1 03
California	36.2	98	13.5	99	18	1 03	35.8	69	20	78	23	1 20	1.20	1 11
Oregon	30.5	94	19.5	68	25	61	36.7	42	27.5	55	26	1.05	1.23	51

Table showing the average yield per acre and price of the principal crops, &c., in December, 1874—Continued.

States.	POTATOES. (*Batatas edulis,*) *sweet.*		LEAF TOBACCO.		HAY.		SORGHUM MOLASSES.		WINTER WHEAT.		WINTER RYE.		WINTER BARLEY.	
	Average yield per acre in 1874, stated in bushels.	Average price per bushel on 1st day of December, 1874.	Average yield per acre in 1874, stated in pounds.	Average price per pound on 1st day of December, 1874.	Average yield per acre in 1874, stated in tons and hundredths.	Average price per ton on 1st day of December, 1874.	Average yield per acre in 1874, stated in gallons.	Average price per gallon on 1st day of December, 1874.	Average area sown compared with 1873.	Condition of the crop compared with an average.	Average area sown compared with 1873.	Condition of the crop compared with an average.	Average area sown compared with 1873.	Condition of the crop compared with an average.
Maine					88	$13 13			108	103	97	103		
New Hampshire					1.12	13 13			95	98	103	97		
Vermont					1.14	11 80			85	90	76	96		
Massachusetts			1,450	$0 25	1.17	21 40			105	105	105	99		
Rhode Island					1.20	24 66					100	100		
Connecticut			1,400	22.5	1.30	19 25			100	102	102	102		
New York					1.30	13 10			101	99	96	102		
New Jersey	82	$1 15			1.35	16 22			100	101	100	101		
Pennsylvania	80	1 06	900	17	1.16	17 05	123	$0 67	102	101	99	98	100	90
Delaware	122	66			1.10	20 00	125	50	94	95				
Maryland	94	96	650	10.7	1.25	17 63	93	63	90	88	99	90		
Virginia	81	75	620	11.3	1.05	16 88	83	53	98	93	98	98		
North Carolina	95	55	497	19.7	1.25	14 83	68	54	104	104	99	101		
South Carolina	88	82			1.00	23 83		65	102	100	100	100	100	100
Georgia	89	53	650	13	1.10	22 33	67	57	126	103	109	102	116	103
Florida	113	56					67	57			103	100		
Alabama	63	73	500	20	1.05	17 50	78	74	120	106	102	103	97	97
Mississippi	57	77			1.25	21 09	47	82	170	102	172	99		
Louisiana	56	77			1.20	20 00			135	100	115	85		
Texas	92	75	619	22.5	1.40	10 92	107	70	142	102	107	103	127	111
Arkansas	58	94	525	15	1.12	14 12	62	71	130	105	144	107	212	102
Tennessee	87	73	597	12	1.10	19 08	75	57	130	111	122	109	101	102
West Virginia	80	1 20	529	14.9	88	16 37	96	67	106	97	98	97		
Kentucky	76	92	577	13.7	94	18 22	91	52	122	102	96	102	109	97
Ohio	89	1 47	625	9.4	90	17 82	78	63	100	92	99	90	97	92
Michigan					1.00	15 60			101	97	90	100	77	98
Indiana	84	96	650	8.4	1.13	13 92	89	53	98	96	81	90	95	96
Illinois	85	90	700	10	1.20	10 49	92	59	110	109	100	103	91	97
Wisconsin					1.10	10 07	74	64	92	105	88	103		
Minnesota					1.35	5 10	96	69	108	103	107	107		
Iowa	90	1 11			1.22	6 47	110	56	106	109	101	102		
Missouri	76	1 09	670	8.8	1.23	12 05	83	58	109	112	100	110	104	105
Kansas	51	1 35	550	12	1.15	3 86	51	65	130	112	135	112	142	125
Nebraska	87	2 62			1.20	4 74	45	66	144	116	194	109		
California	163	1 12			1.40	15 09			111	118	106	131	111	111
Oregon					1.40	11 50			79	87	74	83	96	101

Table showing the relative percentage of numbers and prices of farm-stock in January, 1875, as compared with the returns of January, 1874.

States.	HORSES.					MULES.					MILCH COWS.	
	Total number of horses compared with that of January, 1874.	Average price per head under 1 year old.	Average price per head between 1 and 2 years old.	Average price per head between 2 and 3 years old.	Average price per head over 3 years old.	Total number of mules compared with that of January, 1874.	Average price per head under 1 year old.	Average price per head between 1 and 2 years old.	Average price per head between 2 and 3 years old.	Average price per head over 3 years old.	Total number of milch cows compared with that of January, 1874.	Average price per head at this time.
Maine	101	$31 19	$49 62	$77 78	$112 50	.....	.....	.....	.....	.....	106	$39 50
New Hampshire	99	33 00	51 62	79 50	115 00	.....	.....	.....	.....	.....	103	39 57
Vermont	102	32 20	51 00	78 30	114 00	.....	.....	.....	.....	.....	103	36 40
Massachusetts	103	44 17	66 66	95 00	135 00	.....	.....	.....	.....	.....	102	46 50
Rhode Island	100	40 00	68 00	99 00	130 00	.....	.....	.....	.....	.....	100	44 25
Connecticut	102	33 75	61 87	87 50	125 50	.....	.....	.....	.....	.....	106	42 87
New York	101	36 54	59 74	88 30	118 11	98	$41 50	$65 50	$102 50	$130 00	104	37 50
New Jersey	100	52 00	82 78	111 11	135 00	100	48 75	75 00	114 50	146 66	100	47 50
Pennsylvania	103	37 02	63 72	92 25	123 20	103	40 50	66 75	105 46	137 07	102	35 42
Delaware	100	37 60	58 75	80 50	105 00	100	45 00	65 00	85 50	120 00	90	32 00
Maryland	100	39 53	62 00	85 07	115 50	101	48 69	70 75	111 11	128 50	103	29 19
Virginia	101	29 63	48 93	70 20	94 87	101	36 78	58 15	90 41	111 36	98	22 94
North Carolina	101	33 73	52 54	75 96	96 74	102	39 59	61 72	85 95	109 00	99	16 00
South Carolina	102	38 50	62 25	95 65	112 00	102	48 43	72 50	109 00	128 00	101	21 50
Georgia	101	35 00	56 17	80 95	106 20	99	40 30	65 00	96 25	115 50	100	18 85
Florida	100	39 00	65 20	92 50	126 00	98	47 00	70 75	109 50	128 50	96	13 67
Alabama	98	27 38	46 25	64 50	93 66	100	33 30	53 75	78 50	101 50	98	17 86
Mississippi	100	28 70	45 75	65 00	94 20	97	31 33	50 20	76 50	102 10	100	20 86
Louisiana	99	18 28	28 87	45 50	90 00	102	32 75	52 25	80 00	107 83	96	20 23
Texas	103	13 11	19 77	28 26	44 81	104	19 37	29 91	42 58	65 55	100	13 33
Arkansas	95	20 00	30 50	45 75	68 50	97	25 53	37 15	60 52	85 30	100	15 88
Tennessee	105	30 12	45 74	63 20	84 75	104	33 53	51 58	75 00	93 30	98	18 03
West Virginia	102	26 82	41 44	59 50	83 70	102	31 07	49 06	70 84	96 06	100	27 25
Kentucky	102	26 55	40 46	57 19	78 00	97	30 71	47 70	70 10	91 91	97	26 49
Ohio	102	31 00	49 11	71 50	98 00	103	35 40	54 20	76 60	101 28	100	30 42
Michigan	101	33 92	54 41	82 36	103 70	97	36 77	57 38	90 13	111 63	102	32 80
Indiana	102	27 38	43 31	60 98	84 35	101	31 79	48 88	71 34	97 77	100	26 34
Illinois	101	25 78	40 34	59 31	83 44	98	31 00	47 25	70 82	96 63	100	28 59
Wisconsin	104	32 07	50 09	72 00	102 75	107	34 00	53 66	82 81	107 25	105	26 37
Minnesota	109	31 75	49 00	72 12	105 57	107	34 87	54 59	82 65	108 87	113	25 20
Iowa	100	27 18	41 50	61 58	85 47	102	34 80	51 89	76 51	105 57	104	26 50
Missouri	105	21 09	30 92	43 21	60 16	102	27 33	38 95	56 75	76 06	100	19 50
Kansas	109	20 77	28 68	43 31	64 18	103	29 82	40 44	58 41	85 28	102	20 65
Nebraska	109	23 92	39 86	61 50	82 58	98	30 67	49 67	78 00	112 53	108	28 29
California	99	17 02	27 07	39 78	62 12	101	20 95	32 53	52 38	88 39	104	32 19
Oregon	99	19 30	28 00	39 50	60 30	100	19 00	27 30	39 80	61 30	104	21 65

Table showing the relative percentage, &c., of farm-stock, &c.—Continued.

States.	OXEN AND OTHER CATTLE.					SHEEP.			HOGS.		
	Total number of oxen and other cattle compared with that of January, 1874.	Average price per head under 1 year old.	Average price per head between 1 and 2 years old.	Average price per head between 2 and 3 years old.	Average price per head over 3 years old.	Total number of sheep compared with that of January, 1874.	Average price per head under 1 year old.	Average price per head over 1 year old.	Total number of hogs compared with that of January, 1874.	Average price per head under 1 year old.	Average price per head over 1 year old.
Maine	102	$11 56	$21 12	$34 09	$63 00	110	$3 50	$4 31	99	$9 40	$23 50
New Hampshire	99	11 94	23 50	36 60	63 25	102	3 10	3 82	98	10 87	24 00
Vermont	102	8 80	14 80	29 60	51 50	95	3 05	4 22	98	9 00	23 00
Massachusetts	99	11 66	21 60	36 75	62 50	100	2 66	3 75	97	12 42	23 50
Rhode Island	100	15 00	22 00	35 00	62 00	99	3 75	4 75	97	13 00	24 00
Connecticut	107	14 00	21 75	35 25	62 75	103	3 65	4 12	98	10 50	22 25
New York	98	10 45	19 50	32 64	52 08	98	3 10	4 00	90	8 00	15 40
New Jersey	100	13 08	22 70	37 50	52 75	101	4 20	5 60	101	10 33	18 75
Pennsylvania	100	10 45	18 35	29 41	42 62	100	2 80	3 90	90	7 14	17 80
Delaware	100	9 00	13 70	20 75	32 00	100	3 00	3 50	100	5 50	7 00
Maryland	97	9 37	14 30	21 87	34 12	104	3 44	4 30	97	4 66	9 73
Virginia	98	6 48	11 05	17 36	24 67	100	2 41	3 17	88	3 22	6 75
North Carolina	98	3 35	6 00	9 40	14 70	99	1 21	1 70	98	2 48	5 80
South Carolina	101	6 09	9 17	13 83	18 08	96	1 61	2 33	94	3 45	7 50
Georgia	97	4 10	7 00	10 75	15 00	99	1 20	1 76	101	2 86	6 21
Florida	92	4 17	6 10	9 67	12 90	99	1 41	2 13	104	2 00	5 54
Alabama	99	4 75	7 25	11 33	16 70	96	1 37	2 20	92	2 18	5 81
Mississippi	96	4 63	7 37	11 45	17 80	96	1 43	2 21	94	2 90	6 31
Louisiana	97	3 70	6 29	9 58	15 60	97	1 20	2 11	85	2 70	6 22
Texas	98	3 18	5 28	8 16	11 82	108	1 22	2 16	100	2 00	5 00
Arkansas	97	3 80	6 25	9 17	15 66	104	1 22	2 13	92	1 77	4 46
Tennessee	96	4 26	7 31	11 21	17 40	93	1 39	2 20	84	2 56	6 09
West Virginia	98	8 25	15 71	23 47	35 21	97	1 77	2 70	93	3 17	7 23
Kentucky	94	8 28	14 25	22 12	34 53	94	2 25	3 09	85	3 90	8 67
Ohio	101	9 90	17 31	27 37	40 08	99	2 12	3 00	86	5 46	12 12
Michigan	96	9 15	17 00	28 00	42 00	98	2 50	3 25	90	5 22	11 55
Indiana	101	7 00	13 20	22 25	33 50	94	1 80	2 61	89	4 34	9 30
Illinois	99	9 00	15 48	25 60	34 69	98	1 90	2 84	89	4 92	10 50
Wisconsin	98	7 78	13 18	20 03	33 32	102	1 88	2 50	95	3 75	9 42
Minnesota	110	6 58	12 16	20 00	33 59	112	1 72	2 60	102	3 84	8 81
Iowa	102	8 40	14 51	23 65	35 22	98	1 87	2 77	92	5 00	12 13
Missouri	98	5 58	10 00	16 42	24 25	97	1 33	2 10	80	2 34	5 50
Kansas	94	5 84	11 00	17 50	25 08	98	1 79	2 57	48	2 70	6 67
Nebraska	90	7 00	13 34	21 34	37 00	109	1 97	2 74	60	3 00	7 37
California	94	8 63	13 65	21 32	29 27	100	1 86	2 76	90	4 85	8 53
Oregon	104	5 35	9 00	13 75	20 10	113	2 19	2 73	102	3 02	5 87

EXTRACTS FROM CORRESPONDENCE.

INCREASE IN DAIRYING.—*Piscataquis, Me.:* The largest increase in stock is in milch cows, probably caused by the number of cheese-factories built the past season, and the consequent demand for more cows. *Waldo, Me.:* With the introduction of cheese-factories, farmers in this county are changing somewhat their style of farming. Cows are being kept in larger numbers, and the numbers of oxen and steers are diminishing. Too many horses have been raised, and too few sheep kept, but these matters are regulating themselves. *Hillsborough, N. H.:* The milk business is increasing, and milch cows are taking the place of other stock *Rutland, Vt.:* Milch cows are increasing, and sheep decreasing in numbers. *Queens, N. Y.:* Many of our farmers have gone largely into the milk business, to supply New York and Brooklyn. The stock has been increased, and the improvement of the same by crossing with thoroughbreds has increased the value. *Warren, N. Y.:* The demand for cows for dairy purposes is increasing. *Erie, Pa.:* Milch cows have increased one-fourth, for cheese-factory purposes. *Jackson, Wis.:* There has been a good demand for milch cows for cheese-factories, &c., and they bear a better price in proportion than beef steers. *Sauk, Wis.:* Farmers are generally turning attention to dairying; hence the increase in cows. *Swift, Minn.:* Dairy farming is increasing, and as fast as our population learn to make good butter, it will continue to increase. *Mower, Minn.:* Milch cows have increased, owing to the high price of butter for the last two years. *Ottawa, Kan.:* Steps are being taken to organize two or three cheese-factories in our county, and the number of milch cows has materially increased.

WADENA COUNTY, MINN.—This county was organized two years ago, the date of its first settlement. It is well adapted to the dairy business, having great quantities of the blue and red top varieties of grass upon the river-bottoms and along the margins of the streams running through the county. The very nutritious blue-joint is the principal grass upon the prairies. There is plenty of tamarac and oak timber at convenient distances, throughout the county, for fuel and fencing. The county is settling rapidly by a good, industrious class of American and English farmers. All crops for 1874 were good, this county having had no ravages from grasshoppers.

A PROSPEROUS COUNTY.—*Harrison, Iowa:* This county has had some settlers for twenty-five years, but the last seven has added most of the 12,000 now here. The population is increasing rapidly; the immigration being considerable. Except the bottoms of the Missouri River, its western boundary, and the Boyer River, from one to eight miles wide, the land is all rolling, and almost all tillable and exceedingly fertile. Though mostly open prairie, there are many thousand acres of timber; enough, [illegible] house-building. The soil is clear [illegible] lying 10 or 12 feet [illegible] value. The Bo[illegible] valleys in th[illegible]

quality and texture as far down as they go in digging wells—10 to 75 feet. Everything pertaining to farming is improving and extending. Almost all farm-work is done by the most improved implements, mowers, reapers, headers, thrashers, etc.; many thousands are spent in this way annually, and perhaps beyond economy or profit. By reason of grasshoppers and potato-beetles, 1873 and 1874 had been the worst crop for years ever known here; yet there is more corn in 1874 than ever before, and more cattle and hogs have been shipped since September 1st than in any former year. The stock of hogs is of good blood, and though every pig that can be got into market has been, or will be, sold, there are now many more hogs than at this time last year. Corn, wheat, oats, potatoes, buckwheat, barley, sorghum, and garden-vegetables do well. Prairie-hay is so good and abundant that tame grasses are not raised, though they might be successfully. Apples, grapes, and such fruits succeed, but not peaches.

MANUFACTURES NEEDED.—*Bedford, Tenn.:* The financial pressure is very great in this State, and I fear will be until there is a larger number induced to engage in manufacturing. South of this, there is but little demand for stock, and being forced to get almost all our supplies elsewhere, the State is kept drained of money. Under these circumstances stock-raising cannot be made very profitable.

FAILURE OF WATER.—*Columbia, Wis.:* Water in the earth, during the last five or six years, has been constantly, steadily settling; so that most of our wells have had to be deepened in order to have water. What are we coming to? A barren waste? Or can we do something to moisten our climate?

CULTIVATED GRASSES IN TEXAS.—*Bosque:* The blue-grass sent me from the Department was sown on the 1st of January, 1874, on good timbered bottom-land. It was well plowed and harrowed over twice, the seed sown, and a large roller run over to press it in. The result is, I secured a good stand which stood the drought well during the last hot summer. Since the rains it has grown to the height of about 10 inches, and to-day looks like the spring of the year. I am satisfied it will succeed well in our timber-bottoms and be of great benefit in wintering our stock. The Alsike clover is also doing well and may prove to be of benefit to us.

GRAPE-CULTURE IN NEW YORK.—*Steuben:* The grape vintage in this county is finished and the crops marketed. The aggregate exceeds 6,000 tons. The wine company have bought 2,500 tons, and the remainder were marketed in New York, Boston, Philadelphia, and Baltimore, at an average of $100 net per ton. The area in vineyards is about 4,500 acres.

ASSOCIATION.—*Steuben, N. Y.:* The Granger action for the year has produced beneficial results for farmers. The middle-men have not been able to reduce [illegible] cheese, pork, barley, corn, and oats are [illegible] compelled to pay them. [illegible] you so much," but, [illegible] begins to pay." [illegible] strolling the

Wurtemberg, and Hesse every year for purposes of taxation. Something in this way is also done in Saxony, Holland, and Ireland. Perhaps no European state neglects the matter entirely. Live stock is generally enumerated, and, under land-tax laws, inquiries are periodically made in regard to the value of land, its proprietary subdivisions, occupation by specific crops, number and calling of the population, &c.

These efforts, however, have not given results entirely satisfactory. Some small states, such as Servia, Roumania, and Greece, have been able to establish upon their limited areas comparatively effective systems of field-statistics; while Germany and England find it difficult to procure a system that will embrace all the points of their immense production. The great difficulty is found in the variety of laws, schedules, &c., in force in different states, furnishing but few points for international comparison. The necessity for such comparison is more perceptible and pressing than in former years, when international trade in agricultural staples was mostly by sea. Its grand propelling forces were wars, famines, extraordinary high prices, and other causes, creating a sudden and great deficiency in food and other necessaries of life in some localities. These created a great but ephemeral demand, causing rapid but convulsive movements of produce. These exceptional and temporary causes of enlarged trade have been superseded in modern civilization by a more differential and permanent relation of supply and demand. The facilities both of intelligence and transportation of the present day have greatly narrowed the scope of speculation of middle-men by bringing all parts of the productive surface of the earth in close competition. No artificial elevation of prices can long stand against the immense amount of produce that would be attracted from all quarters.

But the soil itself, as well as its products, has, through changes in European landed systems, become a prominent article of commerce. Entailed settlements have been largely superseded. The land, not descending from father to son, as formerly, and not being valued simply as a means of personal subsistence, has assumed a merchantable character as real estate, affording a scope of investment of capital and skill in production. This facility of transfer renders the soil available to the varied demands of production, and consequently gives rise to a more general system of culture, which has greatly enhanced its productive power.

A general complaint of unequal taxation is rife through European countries. It is believed that a better understanding of the character and relations of the soil and its products to other great interests cannot fail to point out methods of removing this evil as well as the want of capital, excessive cost of agricultural machinery, and modern processes of culture, &c., which are severely felt in a large portion of the productive area of civilization. No government will refuse to adjust its system of taxation so as to remove inequalities clearly pointed out. Errors of judgment in regard to the expenses current or to risk of capital, cause an excessive rental of land. A want of confidence causes the withholding of loaned capital from the cultivator. These difficulties spring from known or unknown anomalies in agricultural production which a well-digested method of statistical inquiry would detect and of which it would indicate a remedy. Labor-strikes might also be removed by careful inquiry into the condition of the laboring population. The accumulation and diffusion of information in regard to markets among both producers and middle-men would largely remove that uncertainty, the cost of which ultimately falls, without recourse, upon the producer.

For the preparation of a uniform system of statistics, the Vienna congress organized a permanent commission, whose duty is to collect information as to the execution of the decisions of the congress in different countries, together with the difficulties that stand in the way; to assimilate statistical publications of different countries, with a view to the promotion of an international system; to prepare a programme for discussion of the subsequent meetings of the congress; to set on foot international inquiries in different countries in all proposed branches, and to report the results; to execute all the international work, such as was proposed at the congress at the Hague, and to resolve the questions pertaining to their execution; finally, to present to the congress an abstract of action necessary to be taken.

The Brussels congress in 1853, the offshoot of the great London exposition of 1861, defined the scope of agricultural statistics as embracing such information as is necessary to determine the facts, conditions, processes, and results of productive industry at a given time. These facts should be gathered in in different countries in schedules capable of comparison and embracing a single farming year, or an average year. The last quarter of the year gives the most convenient opportunity for comparison. These inquiries should be periodically repeated, and more frequently in countries in which agricultural systems and results show marked changes. Every decennial census of population should embrace schedules of agricultural statistics. The congress did not insist upon any uniform mode of making these inquiries, nor upon any uniform system of questions. The latter should be as few as possible, embracing the areas devoted to specific cultures, mode of fertilization, value of products, agricultural laborers, and farm-animals. The congress at Paris in 1855 recommended a decennial census embracing elaborate details, with more limited annual inquiries, embracing only the leading points. These should be made in each locality by private individuals organized into commissions. The area should be permanently parceled out by government in order to facilitate such inquiries. These should embrace the acreage in different crops, total and relative product, weight of the product in proportion to volume. To these questions as a minimum should be added others in regard to the price of wood per hectare, the products of agriculture, silk-production and prices of cocoons, irrigation, drainage, machinery, &c. The decennial census, with more extended schedules, should show the condition of present culture, land improvement, cost of labor, condition of the laboring population, live stock, manure, and other matters essential to a proper study of agricultural production. The London congress, in 1860, demanded an annual determination of the product of the principal crops of all countries, with their acreage; an annual, or at least quinquennial enumeration of live stock, their market-value, &c. The mode of inquiry was left to each particular country. The Florence congress of 1867 still further elaborated the data to be sought by statistical inquiry, and laid special emphasis upon the traffic in real estate. The congress at the Hague, in 1869, adopted the resolution offered by the American delegate, Mr. Ruggles, requesting the delegates to the next congress to furnish statistics of their respective countries for three years prior to its meeting. These different congresses seemed to harmonize upon the specific objects of the international system of statistics, but the members greatly differed as to the practical methods of attaining them.

Among the reforms recommended by the late congress at Vienna was a uniform standard of weights, measures, and money. It was strongly urged that all schedules should be carefully worded and the different

classes of subjects distinctly defined, so as to avoid all danger of misconception by the local agencies for the collection of facts; and that they should be so constructed as to admit of modification to suit local and national variations. The points of inquiry should be as few as possible and embrace only the points of pressing necessity. They should be arranged into two general groups: 1st. The soil, its occupation by specific crops, live stock, number and occupation of the inhabitants. 2d. The actual production, market-prices, transportation, wages, loans, and transfers of real estate. The first group embraces the more permanent and the second the more variable elements of agricultural production. The decennial census should be taken in all countries the same year, and its results published as speedily as possible.

In regard to acreage of crops, data should be obtained from intelligent residents. Tax-rolls give imperfect information, as the present use of land is very different from what it was when these were originally framed. The area of local inquiry should, as far as possible, represent specific political subdivisions of the country. The schedules should specify the amount of land lying waste, woodland, land in pasture, in meadows, under plow-culture, under spade-culture, in orchards and fruit-gardens, in ornamental parks, in barn-yards, door-yards, roads, &c. If a larger or smaller number of inquiries be used, they should be arranged so as to be capable of condensation or division into a uniform international series. The relative acreage in different grains is a subject of special importance, which has been very successfully treated in the Duchy of Baden. There is even here considerable divergence between the real and estimated areas, especially of small crops; yet the general results show the wisdom of the method of gathering local statistics by intelligent private individuals. France, Belgium, Austria, and Sweden have made tolerably complete divisions of crops, and their schedules approximate the true practical ideal. Austria, composed of diverse nationalities, has had unexpected success in her method.

Only a few countries publish authoritative statements of crop-yield; hence, reliance must be placed on estimates of residents, which, though only approximations, may, by careful discrimination between the intelligent and unintelligent reports, between small and large farming, between modes of culture and known results, be made to indicate results closely approaching the actual truth. Discrimination should be made between rich, medium, and poor soils, but political divisions cannot be ignored. The heads of divisions in the schedules of crop-yield should accurately correspond with those of area; the land measures and weights should be reduced to hectares and kilograms.

Great inconvenience is felt from the lack of reliable statistics of woodland and wood production. Estimates in this department should be made only by men of experience, whose number is small. The points of inquiry should be few and practical, embracing heaths, hedges, deciduous trees, (cultivated or not,) conifers, brushwood, &c. Timber valuable for industrial purposes should be particularized. An annual enumeration of all sorts of live stock should be taken at a uniform period of the year. The maximum season is that in which the young are just born and the old not disposed of; the minimum is the winter, when every farmer reduces the amount of live stock to feed during the absence of pastures. These extremes should, as far as possible, be equalized. This class of statistics is generally defective. France and a few other countries have obtained satisfactory data. The schedule proposed by the congress embraces each class of animals, discriminated according to

age, with the number slaughtered or lost by natural death, and the products either of their living bodies or their carcasses.

The number and size of barns and the number and classification of the agricultural population are important topics of statistical inquiry, but unfortunately have received very little attention. The tax-rolls of Europe are very inadequate to determine the truth upon these points. It would be desirable, if possible, to divide landholders into groups according to the extent of their properties. The number of the population, with an exact designation of their occupations, together with the real estate owned by each class, should be given.

The above inquiries should be elaborated in a decennial census. There should also be an annual inquiry into the yields of different crops, prices of farm-products, cost of transportation, imports and exports, labor-wages, loans, rents, &c. These should be made at a period early enough to render their information available in arrangements for the coming winter and spring, although its early publication might sacrifice entire accuracy to desirable promptness. To secure such a statement it would be desirable to agree upon an average yield in each circle of inquiry, and to express the yield of each district by a single percentage of the average. It should be made as early as November.

Reports of prices of land and of fruit products are usually too local for general statistics. Market reports require a wide and thorough acquaintance with national and local customs in regard to measurements. Purchases for cash or immediate delivery should be distinguished from those on time. Exports and imports are carefully collated by States having a customs-tariff, but the variety of classification renders it difficult to bring it within the range of general statistics. Uniformity of market quotations is also very important. The cost of railroad freights is also difficult to systematize on account of different prices in different countries. It is therefore best to confine the inquiry to the most important routes and to the extreme and medium rates of each year. Labor-wages present greater difficulties than, at first sight, would present themselves, on account of the variety of local influences determining the problem. The rates of interest upon loans is important and should be gathered from reports of commercial and other authorities. The number of real-estate transfers is matter of public record, but it would be desirable, in addition, to ascertain the proportion of forced sales and the general influence of transfers upon the average size of estates. Data concerning rents are not easily accessible, as these do not always represent the real value of the property.

The first great point in international statistics is uniformity of leading schedules. When governments shall adopt a common nomenclature, at least for their leading tables, and promptly publish and exchange reports, statistical inquiry will greedily seize upon them and work their statements into every desirable form. Perhaps an international bureau might be established under superintendence of the congress.

AGRICULTURE IN RUSSIA.

Russia in Europe is ten times as large as France and consists mostly of a vast plain, toward the center of which arise several plateaus less than a thousand feet above the sea. The country embraces vast forests, interminable prairies, and large areas of arable land of a fertility unknown

in Western Europe, yielding, with very imperfect cultivation, from 30 to 35 bushels of wheat per acre. With improved processes of culture, and an extension of railway communications, these vast capabilities of production will yet make themselves felt upon the markets of the globe.

The climate of Russia, however, is much more severe than in the same latitudes of Western Europe. Its extremes of temperature are very trying to all except the most robust forms of organic life. Widely separated from the Atlantic Ocean, exposed to north winds from the Arctic, to northeast winds from Siberia, and, in the south, to the dry winds from Central Asia, none of which bring a supply of rain, the country is exposed to frequent droughts which very greatly restrict cultivation. The new conquests south of the Caucasus Mountains, and portions of the Crimean region, are exceptions to the above statements, enjoying a regular and temperate climate.

The vast extent of Russia renders the gathering of reliable statistics a matter of great difficulty. Yet, for several years, a statistical committee has been systematically at work, with headquarters at St. Petersburg. From its patient statistical labor it appears that the aggregate area of European Russia is about 1,861,459 square miles, or 1,191,333,701 acres. From this area deducting 340,926,492 acres, the estimated surface covered by buildings, roads, lakes, rivers, swamps, heaths, commons, and waste-lands generally, there will remain 850,407,209 acres available for production, about 71 per cent. of the whole. This residue includes 468,627,562 acres of forest-lands, 241,382,474 acres of arable land, and 140,397,173 acres of grazing-land.

The forest area, in regions accessible to general markets, has already suffered depletion to an extent affecting the moisture of the atmosphere, and efforts are being made to restore the balance of nature by replanting woodlands and by restricting the cutting of timber. The great mass of the Russian forests is found in the governments of Archangel, Vologda, Olonetz, Kostroma, Perm, Viatka, and Orenburg. These north and northeast departments, whose united surface is about half that of European Russia, are, for the most part, covered with forests. Some of these wooded regions, especially in Archangel, have been but partially explored. A considerable portion is known to be swampy and but little capable of cultivation. The grazing-lands are found mostly in the south and southeast. Here stock-raising will find its greatest extension. The cultivated lands are mostly in the central governments and the region south and southeast of Moscow. In Koursk, Toula, Voronége, Tamboff, Kieff, Kowno, Podolia, Riasan, and Kalouga, arable lands constitute from 50 to 70 per cent. of the whole area.

The leading crops grown on the arable lands are the cereals, epecially wheat and millet. The other crops next in importance are the sugar-beet, hemp, flax, tobacco, and grapes, but all these occupy but a limited acreage; sugar-beets cover about 272,000 acres; hemp and flax, 2,470,000 acres; tobacco, 86.450 acres, &c. The vine is cultivated only in the South, and on the banks of the Don. Most of the arable land is very fertile, about 98 per cent. being designated as black land, (*tschernozieme* or *tchernozème*;) without fertilization it yields from fifteen to twenty times the seed sown. This black land produces seven-tenths of the grain-crops of the country. From late researches by Prof. P. A. Ilyenkow, of the Agricultural and Forest Academy of Petrowsky, near Moscow, it appears that this kind of land composes the north half of the government of Ssamara; the half of those of Ssimbirsk, Tamboff, and Riasan; the whole of those of Ssaratoff, Pensa, Voronége, Kharkow, Poltawa, Yekathérinosslaw, Kieff, and Podolia; and, finally, the larger portion of

Kherson, Taurida, and the Don region. This soil is noted for its black color, especially when moist; when dry, it generally becomes gray, but some varieties retain their deeper tinge throughout. This color is due to the decomposition of vegetable matter. It has been ascertained that in Ssamara 10 per cent. of the soil is composed of organic matter, and in Riasan from 8 to 8½ per cent. But the fertility of the soil depends not on these elements, but in a very strong mixture of mineral substances, indispensable to vegetation, which, having several times entered the composition of plants, have returned to the soil in a more assimilable form. These mineral elements do not embrace more of phosphoric acid or potash than less fertile soils, but they contain a larger proportion of soluble silicates. Partially-decomposed rock is also a prominent element in the soil.

This region embraces deposits of fossil phosphate of lime, some of which are remarkably rich in fertilizing elements. These deposits are scattered over a triangular region, of which the apex is at St. Petersburg and the other angles at Odessa and Orenburg. They lie, generally, in from one to three beds, though in some cases amounting to seven, with a variable thickness. Sometimes they crop out upon the surface, and again they are buried many feet. In some cases they occur in thick slabs, and in others in massive blocks; in still others they exhibit a nodular form. The principal deposit of Central Russia is in Koursk, where it forms a basin nearly one hundred miles long. The phosphate is here eligibly arranged for working in large slabs, about 6 or 7 inches thick, with kidney-shaped nodules on the under side penetrating the ground for several inches. In some portions of this region the practicable yield of phosphate of lime is estimated as high as 10,000 tons per acre. Analyses at different points show that from 30 to 60 per cent. of the soil is composed of this material. Other deposits, scarcely less rich, are noted in different portions of this region. It is estimated that the central zone of this region, running through Smolensk, Orel, Koursk, and Voronége, averages not less than from 6,000 to 8,000 tons of phosphates per acre, while the Tamboff deposits run from 12,000 to 24,000 tons. The exploitation of these deposits, as yet scarcely commenced, opens a wide field of industrial enterprise, promising incalculable results to Russian agriculture.

Yet, with these splendid natural resources, agriculture in this country is anything but prosperous. The soil, ever since the emancipation of the serfs, is still held in large bodies by a small number of proprietors, the large proportion of whom are but little alive to their social responsibilities, and most of them are destitute of capital sufficient for the proper cultivation of their estates. The price of land, except along railway lines, is extremely low. On the Volga River, about sixty miles from a railway terminus, farms may be purchased at less than $1 per acre. More favored localities command as high as $25 to $30 per acre. The poverty of the peasantry is another barrier to agricultural progress. Their lack of capital forbids their occupancy of farms from year to year, with a systematic and recuperative culture, and hence they engage mostly as day-laborers or share-farmers. Leases of nine years are very rare; they seldom exceed two or three years. Arrangements for such a tenure must be provisional and temporary, looking to the realization of speedy returns of profit to meet the high rental. It is needless to say that such a system takes no cognizance of exhaustion of the soil.

De Fontenaye, a French traveler in Russia, states that in 1868 the black land of Ssamara yielded as high as 50 hectoliters per hectare,

about 57½ bushels per acre, though the average did not exceed 40 or 41 bushels. For such results it is estimated that 120 francs per hectare, or $9 to $10 per acre, must be invested by the actual cultivator. Allowance must be made for years of drought in which the average yield falls to 5 or 6 bushels per acre. Under such conditions, the farmer with an ordinary market realizes from $4 to $5 per acre on an average. A farmer owning his own land here enjoys special advantages, realizing, without speculative risk, from 15 to 20 per cent. average profit upon his investment, including both good and bad years. He is able to sell wheat at 10 to 12 francs per 100 kilograms, or from 58 to 70 cents per bushel. Agricultural hand-labor is always cheap, the wages of male hands ranging from $40 to $50 per annum, with board, or from $70 to $76 without board. Good harvesters are difficult to secure at 50 to 80 cents per day without board, or from 40 to 60 cents per day with board.

Of late years the attention of proprietors has been directed to the systematic cultivation of their estates. Institutions of credit are also springing up in some parts of Russia, which will afford the capital necessary for a more extended farming enterprise. The vast plains of Central Russia, where thousands of acres lie without a single break in the surface, will yet witness the complete success of steam-culture and of the application of agricultural machinery on the grandest scale. Improved farm-implements are brought into the country in increasing numbers. English manufacturers have devised patterns for plows specially adapted to the culture of these regions, as well as threshing-machines driven by portable engines requiring little more fuel than the refuse straw of the crops.

While cereal culture forms the basis of farming enterprise in Russia, the sugar-beet and textile plants will demand increasing attention. Sugar-beet culture is diffused through Kieff, Podolia, Tschernigoff, Karkov, Poltowa, Koursk, Toula, Orel, and Tamboff, and is enlarging its scope, especially to the westward. Three hundred beet-sugar factories have been organized, giving employment to 70,000 workmen. The necessity of importing coal, however, raises the cost of manufacturing sugar to a figure higher than in France or Germany. The quality of the product averages very high. The seed sown is mostly the white Silesian. It is thought that the extension of railways will remove most of the causes which enhance the cost of production.

Of oleaginous plants flax is most generally cultivated. It extends over all of European Russia and over part of Siberia. The total product of flax in the empire is estimated 441,000,000 pounds, and of flaxseed over 300,000,000 pounds. Hemp is largely cultivated in Central Russia. Its aggregate annual product is supposed to average about 275,000,000 pounds. The most of this home-product is absorbed by domestic manufacture. The export is almost solely of flax, that of Riga being in great esteem throughout Europe for the fabrication of linens. About 50,000 acres are devoted to cotton in Central Asia; tobacco occupies about 86,450 acres. The grape crop, in the southern provinces, average over 6,000,000 pounds per annum.

The total value of soil-products is thus averaged: Forest-products, $120,000,000; cereals and potatoes, $848,000,000; sugar-beets, $4,400,000; textile plants and oleaginous grains, $65,480,000; tobacco, $2,400,000; grapes, $10,000,000; total, $1,050,280,000. Forest-products average about 26 cents per acre in gross value; arable-culture about $3.80 per acre. What the French call "industrial plants," those forming the basis of special manufactures, yield the greatest average values.

Area and production are thus given in tabular form:

	Area.		Total value of product.	
	Hectare.	*Acres.*	*Francs.*	*Dollars.*
Forest products	189, 643, 300	468, 418, 951	600, 000, 000	120, 000, 000
Cereals and potatoes	96, 487, 200	238, 323, 384	4, 240, 000, 000	848, 000, 000
Sugar beets	110, 000	271, 700	22, 000, 000	4, 400, 000
Textile and oleaginous plants	1, 000, 000	2, 470, 000	327, 400, 000	65, 480, 000
Tobacco	35, 000	86, 450	12, 000, 000	2, 400, 000
Vines	50, 000	123, 500	50, 000, 000	10, 000, 000
	287, 325, 500	709, 694, 985	5, 251, 400, 000	1, 050, 480, 000

ENTOMOLOGICAL RECORD.

By Townend Glover, Entomologist.

Recent notes on the Phylloxera from foreign sources.—In November last, information was received from Henry Erni, United States consul at Basle, Switzerland, that the *Phylloxera vastatrix* had made its appearance near Geneva, and in December the following letter was received, which is published in full:

Referring you to my dispatch No. 95, about the appearance of the grape-root louse at Pregney, near Geneva, the riddle received lately an important solution, for the insect was discovered in the grape-houses of the Baron Rothschild, at his villa near Geneva. It is proved that some of these grape-vines were imported from England, in 1869, where the disease occurred in grape-houses as early as 1863. From these facts the origin of the grape-louse at Pregney appears obvious.

At the meeting of the French Academy, on the 19th of October last, Professor Dumas stated that two substances had now been discovered capable of destroying the *Phylloxera:* 1st, the sulpho-carbonate of potassa; and 2d, coal-tar. Neither of these would injure the grape-plant. Experiments made on a large scale at Cognac and Montpelier, France, by delegates of the academy, were highly efficient. Both ingredients are cheap, for the price of a kilogram of each does not exceed one franc. The sulpho-carbonate of potassa is dissolved in water up to 37° Baumé, and 80 cubic centimeter ($\frac{8}{100}$ liter) poured upon every diseased grape-root. The best time is in November and March, the ground at that time being moist and the insect sure to be in winter quarters. The expense per vine amounts to about 10 centimes. Applying coal-tar, each root receives about 2 kilograms of this liquid, when it will penetrate the ground about 2 feet deep. In both cases the grape-louse is effectually killed.

I am, sir, &c.,

H. ERNI,
United States Consul.

We also give extracts from the report of the international congress of vineyardists, at Montpelier, France, October 28, 1874, on the same subject, from the Journal d'Agriculture Pratique, No. 46:

The floor was taken by Mr. H. Marès, permanent secretary of the agricultural society of Herault, and president of the ministerial commission. He commenced by recalling to mind the experiments of 1872 and 1873, with the *phylloxera*, which were unsatisfactory on account of the invasion of the "pyrale." In 1872 a new experimental field was selected, near Montpelier, belonging M. Michel Termand. The experiments commenced the 6th July, and comprise fifty-one methods, applied to squares of 25 vines each, the squares being separated by two rows of untreated vines, left to serve as means of comparison, and to prevent confusion in the effects of various modes of treatment. One hundred and forty methods have since been tried in the same vineyard, of which thirty-three were beneficial and nine injurious; the others appeared to have no effect. The most beneficial were as follows, the soil being chalky and ferruginous: Potassium sulphate disolved in urine; a mixture of the sulphurized manure of Berre, colza cake, and ferric sulphate; potassium sulphate dissolved in water; potash soap dissolved in water; soot; a mixture of farm-dung, wood-ashes, and ammonium hydrochlorate; cow-urine alone or with the addition of gas-tar. All the methods which have proved advantageous are also manurial, especially the salts of potash and ammonia. The injurious

methods are those insecticides not manures, as carbonic sulphide, turpentine, petroleum, gas-tar, and phenic acid not diluted. The committee came to this conclusion: that manures, especially those rich in potash and nitrogenous substances, benefited the affected vines.

The trials were continued in 1874 on the thirty-three squares already improved, one-quarter of each being left to see if the improvement was permanent. The total number of experiments made was two hundred and fifty-nine, extending over two and one-half hectares. The squares which were benefited in 1872 and 1873, have in some cases this year almost returned to their original vigor, but the *phylloxera* has not disappeared.

As regards the fruit, the following treatment has given the best results: 1. Yard-dung, wood-ashes, and sal ammoniac. 2. Yard-dung, wood-ashes, and fat lime. 3. Cow-urine and fish oil. 4. Cow-urine alone. 5. Oil-cake. 6. Potassium, sulphate, and urine. 7. Cow-urine and gas-tar. 8. Soot. 9. Sulphur, salt of Berre, ferric sulphate and colza-cake. The vines surrounding the squares treated were also visibly affected.

The experience of 1874 confirms and completes the results of 1872 and 1873, showing a diseased vine may at least temporarily be restored to vigor by energetic treatment. The commission considers itself justified in asserting that manures, rich in potash and nitrogen, mixed with alkaline or earthy sulphates, refuse of salt-works, soot, wood-ashes, ammonia, or fat lime, have increased the productiveness of the vines and allowed the fruit to ripen.

According to M. Marès the vine-disease is the result of combined causes, and subject to several conditions, viz: 1. The nature of the soil, it as affects the vine and the insect, frequently a determining condition. 2. The influence of climate on the vine, and also whether or not it favors the extension of the insect. 3. The strength or vigor of growth of the vine itself, which varies according to the variety and mode of culture. The wild vine does not perish; the stock nearest approaching it is hardly attacked.

M. Laliman spoke next, affirming that rooted American cuttings had been cultivated in localities where the *phylloxera* had as yet failed to appear, either on the American or native stocks.

M. Plauchon then discussed the Americans, dividing them into three principal groups: 1. The Lambrusca; berries with foxy taste. 2. Œstivalis; berries small, leaves deeply indented, wooly on the veins. 3. Cordifolia, of which the Clinton is a variety; leaves smooth, berries small. The Scuppernong, derived from the Cordifolia, attains a prodigious development, one stock covering one-third of a hectare, but it is too wild. All these resist the *phylloxera* better than our varieties, perhaps because they have not been so long in a state of cultivation. The insect does not extend its ravages beyond the small roots of the American varieties. But while the Americans do extremely well in France, they should not be imported where *phylloxera* is unknown, for fear of introducing it, as the speaker is decided in asserting that it originated in America.

M. Max Cornu gave a summary of his experiments. He confined himself to substances giving off poisonous vapors, among which sulpho-carbonates gave the best results.

M. Bouchet de Bernard, in a communication, advocated grafting French vines on American stocks, thus obtaining good wine and roots capable of resisting the attacks of the *phylloxera*. M. Leissoniere supported these ideas, asserting the positive inferiority of the American wines. M. Terrel de Chênes stated that during five or six weeks the *phylloxera* left its subterranean abode and crawled up the stock, hiding under the bark six inches above the ground. M. Douysset told how well the American vines grew at Roquemaure. And the session terminated with a communication from M. Petit, of Nimes, who lauded the value of coal-tar against the *phylloxera*.

At 8 o'clock, 29th October, the members assembled at Comedy square, to visit the field of Las Sorres, and view with their own eyes the results spoken of by M. Marès. The experimental field should give some consolation to our brethren of the South, for the squares of green vines in the middle of general desolation show the genius of man may triumph over the *phylloxera*, as it already has over the Oidium.

The cellar of Saporta belonging to M. Vialla was visited, and the excursion terminated at the vineyard of M. Gaston Bazille, near Lattes. His yards join others not yet treated for the *phylloxera*, and we can hardly describe the extraordinary difference in the vines. Here they are digging up the stocks to throw away; there they are covered with leaves and vigorous branches. A part were treated with cow-urine and calcium sulphate, a part with urine alone. In another place, submersion has been tried with success and new ditches are now being dug.

In the session of October 30 M. Lichtenstein continued an essay by M. Roessler, delegate of the Austrian government. In his country the grape-growers believe the *phylloxera* came from America. They are opposed to destroying the vines, and believe in studying the insect and fighting it with manure and phosphates, ammonia, and potash. This treatment succeeds in porous soils, and to obtain this porosity the learned delegate had made use of dynamite, raising the ground thus from a great depth without injuring the vines. He then puts some chalk and phosphorus at the foot of the stock and irrigates. A gas is disengaged by the humidity, which destroys great quantities of insects,

and by this means he obtains a crop. M. Lichtenstein added to this communication the result of his personal observations, that from the 15th August to the 15th September the *phylloxera* takes wings and departs. He was not able to distinguish the sexes, but there was a time when the insect laid an egg which gave birth to the mother of the legions which devastate the vineyards. At this time the insect is within reach, and should be destroyed. In studying the *phylloxera* of the vine the speaker discovered the *phylloxera* of the oak.

Viscount de Saint Trivier, delegate from the Rhone, gave a history of the progress of the *phylloxera* in his neighborhood, where it appeared three years ago. He pulled up his vines in April and June but found no *phylloxera;* but in July they appeared, which fact made him think, with M. Cornu, that the temperature must be at least 15° cent. He obtained good results by covering the stocks with a sort of paste made of saw-dust and coal-tar. M. Denis employed boiling water, to which he added one-tenth of tobacco-waste.

M. Loubet did not believe in medicines, but advocated patient replanting till the disease disappeared of itself, as he believed it soon would.

MICROSCOPIC OBSERVATIONS.

By Thomas Taylor, Microscopist.

[Continued from the October report.]

Cranberry rot and scald.—It has been suggested by several correspondents of this Department that an application of lime to the decaying vegetable matter composing cranberry bog-lands would increase fermentation rather than prevent the evil, and that the application of some other substance would probably prove more suitable for the purposes required. The action of lime on cranberry land differs materially from its action on farming land in general. Cranberry lands vary exceedingly in their conditions. I have found, for example, in New Jersey undecomposed peat-bogs six feet thick, charged with sulphureted hydrogen and acetic acids. On such soil cranberry vines grow vigorously, and become heavily matted. The bloom is plentiful and the fruit grows in profusion, but under continual high temperature and drought fermentation is induced in the berries, and the cranberry "rot" succeeds. On the other hand, I have found a cranberry plantation having a soil of well decomposed peaty matter six feet thick, and free from all disagreeable odor. Other conditions were also favorable to high culture, such as a plentiful supply of cool water, and cool breezes during hot weather.

Other plantations presented conditions entirely different from these. At Pemberton the cranberry vines are planted mostly in black sand, a soil composed of pure white sand and a small portion of peaty matter, amounting to only $2\frac{1}{2}$ per cent. of the latter. This soil, when sufficiently moist and subjected to a proper temperature, is quite favorable to cranberry growth, and proves very profitable; but during long droughts and high temperature the berries, even on this soil, also rot. In the absence of moisture, the roots fail to sustain the organic functions of the berry, and it becomes subject to the same kind of decay and rot that are observed when a healthy berry is removed from a healthy vine and subjected to high heat of the sun. This fact is well understood by cranberry-growers. The soil which accumulates in old mill-ponds differs from the foregoing. It is composed mostly of decomposed leaves, moss, and similar substances, being a well decomposed vegetable sediment, most of which had probably fermented in the forest before it was washed by rains into the ponds. By draining the water from these ponds gradually, the sediment consolidates into the condition of humus matter.

Sometimes large trees in a state of fermentation are found in the bottom of mill-ponds, and bad soil and rotting berries have always been found in their immediate neighborhood. Pure sand, in some cases, has been used successfully in cranberry culture when irrigated with cool and running peaty water; and so also clayey sand, but with indifferent success. In one case I found a condition of soil differing from all these. It consisted of "black sand," or "savanna," as it is sometimes called, and had on its surface about three inches of a heavy, undecomposed, fermenting peat, which had been spread over it by artificial means. Lastly, cranberry land sometimes consists of a thin layer of well decomposed peat, six to eight inches in depth, but rendered useless by being charged with back water from adjacent fermenting bog-land.

In the use of lime, under such conditions, science and common sense must be exercised. In the first place, a bog consisting of six feet of fermenting muck, with a poor supply of pure running water, cannot be easily brought into the condition of pure humus matter by the use of forty bushels of lime to the acre. This amount will prove beneficial, and if the following season should have favorable climatic conditions, and additional applications should be made, more satisfactory results may be expected from its use than would occur without it; but if a long drought and high temperature should follow, the value of the lime would not be appreciable; and yet the same amount applied to a thin layer of fermenting peat, with a proper supply of water, would give marked and valuable results. The application of lime to well decomposed peaty matter or humus will not cause fermentation, but simply oxidation, producing a class of organic acids highly beneficial to plant-growth, being always combined with more or less ammonia. The application of caustic or carbonate of lime, especially the former, to savanna land, may be generally considered as injurious to it in the absence of a liberal supply of water charged with soluble humus matter; because the lime, whether caustic or otherwise, will soon destroy by oxidation the small percentage of vegetable matter contained in it. The savanna lands of the Cranberry Park Company, at Atsion, N. J., have a bountiful supply of peaty water at command, and the sour portions may be safely treated with lime in any form, while the savanna lands, near Pemberton, in the same State, require very different treatment. All the land in that neighborhood which I examined was in a healthy condition, and free from sour acid odors; but some mode of irrigation will be required to keep the soil moist during long droughts. The application of sulphate of lime—land-plaster—which absorbs water from the atmosphere, would be more favorable for such land.

It is acknowledged that the savanna lands have a great tendency to be impoverished quickly under cultivation. I would recommend the adoption of the following mode of ameliorating such land: Take any quantity of heavy peat-muck, and make a compost of it with quick-lime, turning it over frequently, and allowing the full action of the atmosphere on it. Frost will tend to pulverize it, while high temperature will favor fermentation, destroying its albuminoids. The lime will neutralize its tannic acid, and allow the proteine compounds preserved by it to pass through the stages of decomposition, converting the vegetable mass into humus matter. Any excess of lime will combine with the acetic and other organic acids present, neutralizing them. The whole mass, when dry, should be pounded or reduced by a rolling-machine to the form of powder, and spread over the surface of the savanna lands.*

* The expense of collecting and pulverizing need not exceed three dollars per ton. Rolling-mills, suitable for this purpose, used in the manufacture of artificial fertilizers, may be had in Philadelphia, or in any of the other cities of the United States.

Such a course should have been taken to improve one of the extensive plantations near Tom's River, alluded to in my previous report.

There is much evidence to show that the roots of the cranberry-vine succeed best when planted in loose, porous soil. While traveling over the highly-cultivated plantation of Joseph C. Hinchman, he pointed out a number of barren spots and strips of land, which in former years had proved as well adapted to the growth of the vine as any other part of his land. Mr. Hinchman stated that persons who were employed in picking the berries, would frequently draw heavy boxes over the vines, and in this way compact the sand or soil around the roots. In other cases they would form in groups, and sit on the cranberry-vines when taking their meals. In all such places the vines ceased to grow thriftily. Col. D. Gowdy also remarked that he could not account for the comparative barrenness of the land on the edges of his artificial water-courses. He said that formerly the vines grew in profusion on them, yielding fine crops of berries. On comparing the edges of the water-courses, artificial and natural, of Mr. Hinchman with those of Mr. Gowdy, a marked contrast appeared. On Mr. Hinchman's plantation the profusion of vines and fruit growing on the margins of the stream was quite remarkable. On the banks of his principal stream the runners often extended from one to two yards in length, and were frequently seen floating on the surface of the stream, and bearing an abundance of ruby-colored fruit. When we take into consideration the fact that hundreds of persons pass over all the cranberry lands during the picking-season, it need not be surprising should a diminution of the cranberry-crop occur from this cause. While making an examination of the cranberry-plantation of Joseph J. White, near Pemberton, N. J., I failed to detect the odor of sulphureted hydrogen in the cultivated soil, but under the trodden paths I found it in abundance. In this fact we have at once a proof of the value of a porous soil, which will not only allow its deleterious gases to escape into the atmosphere, but will also permit the atmospheric air to penetrate freely to the roots of the growing vines.

In company with a committee, I visited the cranberry-plantations of John Webb, of Jackson Township, Ocean County, who was doubtless the first cultivator of cranberries in New Jersey. Mr. Webb commenced his experiments about the year 1843, although having no practical knowledge on the subject, but relying wholly on such information as he gained from newspapers coming occasionally into his hands. Living as he did in an isolated place, a few miles from Cassville, with no capital, he was embarrassed with many difficulties; still he persevered with his rude experiments, studying, as it were, instinctively the habits of the cranberry-plant, until success crowned his labors. On our arrival we found that he had just completed the plowing of his cranberry bog. His plan consisted in throwing up light furrows of vines, one on the other, without allowing them to cover one another. I believe that Mr. Webb's plan would prove very successful if applied to some of the plantations I have described, as in the case of barrenness, and when polluted with fermenting matter and sulphureted hydrogen. Bog lands covered with clayey sand would be much improved by commingling it with the peat soil, and in this way removing the clayey sand from the immediate roots of the vines. In such cases, of course, the vines should be resanded with coarse, sharp, clean sand.

FACTS FROM OFFICIAL SOURCES.

WHEAT IMPORTS OF GREAT BRITAIN.—The United States, as a wheat-exporting country, more than sustains its usual preponderance among the contributors to the bread-supply of Great Britain. In a recent report we stated that this country had furnished 27 per cent. of these supplies during the period of fifteen years ending in 1872, and Russia 24 per cent., Germany, 17; France, 9; British America, 5; the remaining 18 being divided among the Austrian territories, Egypt, Denmark, Chili, and other countries. In 1873 this country's contribution is 45 per cent.; that of Russia, less than 22. In 1874, to December 31, the United States, 55; that of Russia, 13 per cent. In wheat and flour our export to Great Britain of the calendar year exceeds an equivalent of fifty-two million bushels.

Reduced to dollars, the price per cwt. of the wheat of the principal exporting countries is as follows:

	1873.	1874.
Russia	$3.16	$2.78
Austrian Territories	3.16	3.43
United States	3.26	3.07
British North America	3.30	2.94

The average value of maize in 1873, per cwt., was $1.76; in 1874, $2.11.

	Quantities.		Value.	
	1873.	1874.	1873.	1874.
Wheat from—				
Russia ..... cwts.	9,598,096	5,714,488	£6,072,723	£3,180,723
Denmark ..... do..	301,758	167,286	205,450	103,956
Germany ..... do..	2,153,857	3,053,680	1,544,850	2,017,623
France ..... do..	1,170,522	300,299	747,737	163,835
Austrian Territories ..... do..	29,730	2,814	18,616	1,932
Turkey, Wallachia, and Moldavia ..... do..	367,487	659,676	218,565	364,082
Egypt ..... do..	1,260,401	293,880	697,194	172,242
United States ..... do..	19,742,726	23,048,552	12,895,779	14,178,791
Chili ..... do..	1,557,128	1,925,334	980,702	1,180,455
British North America ..... do..	3,767,330	3,807,174	2,486,584	2,238,167
Other countries ..... do..	3,802,595	2,506,277	2,578,489	1,599,256
Total	43,751,630	41,479,460	28,446,689	25,201,062
Wheat meal and flour from—				
Germany ..... cwts.	687,243	751,366	679,885	706,039
France ..... do..	1,669,356	659,568	1,598,878	606,457
United States ..... do..	1,580,697	3,290,235	1,380,792	2,915,752
British North America ..... do..	444,729	389,355	399,130	332,096
Other countries ..... do..	1,822,235	1,139,084	1,780,512	1,149,476
Total	6,204,260	6,229,608	5,839,197	5,709,820
Indian corn, or maize ..... cwts.	18,768,127	17,683,212	6,621,720	7,484,178
Indian-corn meal, (including maizena) ..... do..	6,836	8,511	10,570	14,405

FRUIT CULTURE IN MICHIGAN.—A State census of Michigan was essayed in 1874, from which is compiled the following statement of quantities of fruit grown in 1872 and 1873, with a record of the county and township making the heaviest product of variety:

Variety.	Year.	Total product.	Leading county.		Leading township.	
Apples.....bush.	1872	7,236,471	Oakland	517,642	Armada, Macomb.....	56,943
	1873	5,927,875	Lenawee....	423,129	Berrien, Berrien	43,085
Peaches .....do..	1872	318,454	Berrien	140,450	Benton, Berrien.....	40,883
	1873	22,031	Van Buren..	9,072	South Haven, Van Buren.	8,910
Pears.....do..	1872	33,932	Berrien	6,200	Saint Joseph, Berrien...	2,090
	1873	40,857	....do	9,591	.....do	4,300
Plums .....do..	1872	6,301	Lapeer.....	693	Metamora, Lapeer	180
	1873	3,667	Oceana	373	Saint Joseph, Berrien ...	217
Cherries.....do..	1872	60,958	Calhoun	5,640	Battle Creek, Calhoun...	1,271
	1873	66,746	Oakland ...	8,415	Saint Joseph, Berrien...	1,431
Strawberries .....do..	1872	50,420	Ottawa	4,256	.....do	8,175
	1873	48,922	....do	3,944	.....do	6,955
Currants and gooseberries.....bush.	1872	36,484	Branch	2,254	Barry, Barry.....	700
	1873	40,562	....do	2,299	.....do	800
All kinds, except grapes, bushels	1872	7,743,020	Oakland	526,845	Benton, Berrien.....	68,502
	1873	6,150,660	Lenawee....	431,473	Quincy, Branch	44,272
Grapes ....lbs.	1872	2,323,500	Kalamazoo..	*3,657	Kalamazoo, Kalamazoo..	*3,368
	1873	2,960,100	Berrien	*5,408	.....do	*3,053

*Cwt.

The area in fruit is reported as follows:

Acres of orcharding	237,061.00
Acres of vineyards	1,007.64
Acres of raspberry-bushes	946.52
Acres of strawberry-vines	1,647.32
Acres of currant and gooseberry-bushes	386.37
Total acres of fruit	241,048.85

The counties having the largest acreage in orchards are Berrien, 14,001, and Oakland, 12,932; and the next in order of decrease are Lenawee, Kent, Jackson, Washtenaw, and Hillsdale, the last having 9,186 acres. Those having the most acres in vineyards are, Berrien, 243; Monroe, 136; and Ottawa, 116. Berrien has 374 in raspberries and 947 in strawberries; Ottawa has 82 in raspberries, and 109 in strawberries; Muskegon, 58 in vineyards, 64⅛ in raspberries, and 129⅝ in strawberries. In currants and gooseberries, Branch is far in advance of all others, reporting 63 acres; the next in order are, Saginaw, 24⅜; Muskegon, 23⅙; Ingham, 20; and Berrien, 20.

The following townships, the leading producers in the years named, report the following aggregates, not including grapes:

1872.	Bushels.	1873.	Bushels.
Benton, Berrien County.....	68,502	Quincy, Branch County.....	44,272
Saint Joseph, Berrien County....	59,808	Berrien, Berrien County.....	43,085
Armada, Macomb County.....	57,405	Niles, Berrien County.....	40,112
Reading, Hillsdale County.....	55,342	Saint Joseph, Berrien County....	38,958
Almont, Lapeer County.....	50,343	Reading, Hillsdale County.....	38,316
Avon, Oakland County.....	50,055	Pittsford, Hillsdale County.....	37,323

The counties producing apples most largely are Oakland, northwest of Detroit, and Lenawee, the second from Lake Erie, in the southern tier. The greatest production of peaches in these years was in Berrien and Van Buren, the most southern counties on the eastern shore of Lake Michigan. Berrien is also first in pears both years. The leading county in plums was Lapeer, north of Oakland, in 1872, and Oceana, on Lake Michigan, in 1873. Calhoun, in the second tier of southern counties, and Oakland, lead in cherries; Wayne, (Detroit the county-seat,) in strawberries; and Branch, in the southern tier, in currants and gooseberries. Berrien is now far ahead in grapes. Apples constituting 98 per cent. of all fruits, exclusive of grapes, the apple counties are those making the greatest total production.

It is thought that less than half the orchards in the State have yet come into full bearing; many are just beginning, and many more have not yet reached that point. Hence there is a certain prospect of a rapid increase in average production.

SUGAR-CONSUMPTION IN THE UNITED STATES.—The annual statement of the sugar-trade of 1874, by the New York Commercial List, shows the receipt of foreign cane-sugar as amounting to 652,596 tons, against 636,497 in 1873. New York received 431,315 tons, an increase of 54,746 tons; Boston, 69,479 tons, a decrease of 24,508 tons; Philadelphia, 38,854 tons, a decrease of 14,440 tons; Baltimore, 77,201, a decrease of 19,396 tons; New Orleans, 27,141 tons, an increase of 10,903 tons; other ports, 15,606 tons, a decrease of 1,206 tons. The ton in this statement is 2,240 pounds. The foreign sugar trade appears to be concentrating at New York and New Orleans, the other ports showing a heavy decline.

The stock on hand at the beginning of 1874 and 1873, respectively, was 71,451 tons and 41,803 tons, making the total supply of the two years, respectively, 724,047 tons and 679,300 tons. Of this supply 12,045 tons were exported in 1874, against 15,124 tons in 1873, leaving the stock available for home consumption in 1874, 712,002 tons, against 664,176 in 1873. Of this available stock there were left over at all the ports January 1, 1875, 50,133 tons, against 71,451 January 1, 1874, showing the total amount of foreign sugar consumed or distributed for consumption in 1874 at 661,889 tons, against 592,725 the previous year. The increased consumption in 1874 was 69,144 tons, while the increase of 1873 over 1872 was 25,152 tons. But the consumption of domestic cane sugar in 1874 was only 48,500 tons, or 10,800 tons less than in 1873, making the total consumption of cane sugar of all sorts 710,369 tons in 1874, against 652,025 tons in 1873, and 637,373 tons in 1872. That is, the increase amounted to 58,344 tons in 1874, against 14,652 tons in 1873.

The above figures do not include the States and Territories on the Pacific coast. The consumption of cane sugar in these States during 1874 is estimated at 30,046 tons, making, for the whole country, 740,415 tons of cane-sugar. Add, for sugar made from molasses, 43,600 tons; for maple-sugar, 15,000 tons; for beet-root, sorgho, and other miscellaneous kinds, 2,000 tons; and the total amount of all sorts of sugar consumed in 1874 was 801,015 tons, against 740,525 tons in 1873, an increase of 60,490 tons, or nearly one-twelfth.

The population of the United States, according to the ninth census in 1870, was 38,500,000. Allowing 3 per cent. annual increase, about the average prior to the late civil war, and the aggregate of 1871 would be about 39,666,000; 1872, 40,875,000; 1873, 42,000,000. During 1874 the decline of foreign immigration materially checked the increase of population, leaving an aggregate of about 43,000,000. During 1870 the total consumption of cane sugar alone was 1,188,000,000 pounds, or about 30.9 pounds per capita; during 1871, 1,412,623,360 pounds, or 35.6 pounds per capita; during 1872, 1,427,715,520, or 34.9 pounds per capita; during 1873, 1,460,937,000 pounds, or 34.8 pounds per capita; 1874, 1,591,236,560 pounds, or 37 pounds per capita. Adding about 200,000,000 pounds per annum for molasses-sugar, maple-sugar, beet-sugar, &c., and the annual consumption per capita will be about 5 pounds greater than cane sugar alone, as stated above. This rapid increase in sugar consumption is one of the remarkable facts showing the drift of our civilization.

FRENCH FORESTRY-STATISTICS.—According to a semi-official note in the Journal des Débats, the total forest surface under governmental su-

pervision in France was 7,416,529 acres, of which 2,743,388 acres belong to the state, and the remainder to communes and various public institutions. Alsace and Lorraine, ceded to Germany, contained 395,257 acres of public forest land. The Orleans family had previously recovered 61,915 acres that had been confiscated, making a reduction of 457,178 acres from the former area. On the other hand, 161,598 acres belonging to the civil list of the late imperial *régime* have been transferred to the state, making the net reduction only 295,580 acres. During 1847, 147,211 acres were replanted, making the present total area of forest lands in France 7,593,740 acres, or nearly 6 per cent. of the national area. The gross revenues of the French forests average about 15 francs per acre, of which about 8 per cent. cover expenses of administration. The Prussian forest service for 1873 reports a gross revenue of 8.26 francs per acre, of which 22 per cent. are absorbed by the expenses. As the French system was originally copied from the Prussian in 1827, this difference of economic results is remarkable.

WINE-CULTURE IN ITALY.—The growth of the vinicultural interest in Italy during the last few years has lately manifested itself by remarkable results. At the London Exposition in 1862, of 130 kinds of Italian wine exhibited, 45 received premiums. At the Vienna Exposition of 1873, of 230 Italian wines exhibited, 101 either received a premium or an honorable mention. Italy devotes over 6,000,000 acres to vine-culture, producing, in 1873, over 870,000,000 gallons of wine. Of this amount about 250,000,000 gallons are credited to Naples and Sicily; 200,000,000, to Emilia, Umbria, and the Roman marches; 200,000,000 to the older provinces. The average price, as officially estimated by the Italian statistical authorities, was about 19 cents per gallon, making the total value of the wine-product about $165,000,000. The value of exports of Italian wine rose from $2,799,696 in 1871, to $4,692,672 in 1872. France takes the largest proportion of this export; next in order, England, Switzerland, Austria, and the United States. Egypt takes a large quantity in bottles, while considerable quantities of bottled wine are shipped to Tunis, Tripoli, Brazil, and Holland.

FRENCH SUGAR PRODUCTION.—*Le Journal Officiel* gives the following comparative statement of sugar production of France during the last two seasons:

	1874–'75.	1873–'74.
Total product	304,323,230 pounds.	265,288,313 pounds.
Total consumption	124,033,247 pounds.	116,834,176 pounds.
Stock on hand October 31	180,129,990 pounds.	150,791,873 pounds.
Sugar-factories in action	514	499
Sugar-factories inactive	10	23
Quantity of juice defecated	671,025,854 gallons.	475,419,519 gallons.

Sugar-beets were more abundant, but the juice was somewhat less rich in saccharine principles. Consumption, weighed down by taxation, did not keep pace with production, whence raw sugar did not maintain prices remunerating to producers. Beet cultivators, sugar producers and refiners manifest an equal inquietude in regard to future legislation affecting the sugar industry.

BRITISH IMPORTS OF ALIMENTARY SUBSTANCES.—The imports of animal and vegetable food products into the United Kingdom during October, 1874, amounted to £5,823,000, a loss, compared with October, 1873, of £1,061,000. Living animals amounted to £731,000, a gain of £175,000; butter to £848,000, a gain of £135,000; cheese to £485,000, a gain of £26,000; eggs to £182,000, a gain of £39,000; salt and dried fish, £134,000, a gain of £20,000; meat, fresh and salt, to £128,000, a gain of £34,000; rice to £308,000, a gain of £3,000. On the other hand,

wheat fell off £1,047,000; flour, £83,000; lard, £91,000; maize, £235,000 potatoes, £37,000. The total gain was £432,000; total loss, £1,403,000 of which two-thirds was in wheat alone. Leaving out that cereal, the later importation shows a small net gain. This shows the beneficent influence of a large domestic cereal crop. Lower prices have made the reduction in values of larger proportion than that of quantities, which is, however, quite large.

POTATO-CULTURE IN ENGLAND.—The Royal Society of England has been unremitting in its efforts to stay the potato malady. One of its members, Lord Cathcart, has offered a prize of £100 for a memoir upon the disease and a complete remedy. This offer not having produced any satisfactory result, the society offered a similar prize for an early potato that would resist the malady for three years. The seed was sent to each of the great potato districts—Yorkshire, north and south, Cumberland, Tyld, in Lancashire, Marsh, in Lincolnshire, Essex, Higham, in Kent, Devonshire, Staffordshire, Bedfordshire, North and South Wales, Morayshire, Perthshire, the Lothians, Renfrewshire, Ulster, Connaught, Leinster, Munster, and other parts of the United Kingdom. Six varieties were experimented with, but not one escaped the disease. The experimenters concur in the necessity of rejecting damp soils for potato-culture, and also agree that manure should be applied before planting. They also agree that the seed should consist of whole potatoes, of medium size, instead of fragments. The importance of this tuber in the British Isles is shown by the fact that it occupied altogether, in 1874, 1,412,851 acres, of which 520,430 were in Great Britain and 892,421 in Ireland. The product, estimated at £14 per acre, amounts nearly to £20,000,000, or $100,000,000.

THE ENGLISH AGRICULTURAL LABORER.—The forces at work throughout the civilized world for the elevation of the laborer have already greatly ameliorated the condition of the English peasantry. The advance in their wages has been considerable, though unequal in different localities. The number of allotments of gardens for laborers has greatly increased. No less than 67,422 such holdings were returned in England alone in 1872. They are more numerous in the corn counties than in those mainly devoted to grazing. Educational facilities, hitherto enjoyed sparingly by this class, are more generally improved. There is beginning to be felt, as the natural though not legitimate result of this awakening, an antagonism between labor and capital, stimulated doubtless by unwise counsels of the laborers and possibly also of the Farmers' Union. The question was recently discussed quite fully in the London Farmers' Club, the leading participator being Mr. Herbert Little, from whose address the following extract is taken:

Actuated more, apparently, by silly spite than by higher motives, the present policy of the union seems to be that of wholesale deportation of agricultural laborers to foreign lands. A more dangerous game could scarcely be played, or one less likely to fulfill the intentions of its promoters. Far better would it be to encourage migration to the fullest extent from overstocked country districts to those home centers of manufacturing industry where labor is already at a premium. There is the danger that if within reach of their native soil they may at any time be deluded into the idea that after all they were as happy and well off there, and that they may feel a desire to return. But get them well out of their native land, argue their present advisers, and not only is there little fear of their return to trouble us, but those who are left behind immediately become worth higher wages. But this consequence by no means necessarily follows, while the great impetus given to emigration may be succeeded by a reflux or paralysis which may entirely upset the calculations of the emigrants' friends. There is even danger that a reaction may set in against emigration altogether, if the hordes of unskilled rustics who are now being shipped off almost against their inclination, should fail to find in the countries to which they are exiled the blessings promised by their unscrupulous advisers. Already America complains of a surfeit of unskilled

and even of expert workmen, and it is far from improbable that the time is at hand when the re-emigration of large bodies of men from the United States to this country may counterbalance all the efforts of the union for the depopulation of our rural districts. A far stronger power than any wielded by farmers' or laborers' unions will, in the long run, regulate with inexorable precision the interchange, and determine the localization of human labor. I allude to the simple law of supply and demand.

AGRICULTURAL IMPROVEMENT IN AUSTRIA.—The Austrian minister of agriculture reports that special encouragement has been given to various special cultures. The organization of agricultural instruction, the breeding of horses, the constitution of studs, and, finally, rural administration, properly so called, have received special attention. A traveling professor has been appointed to visit the different viticultural districts of Dalmatia, to hold conferences upon the manufacture of wine. He was specially charged to call attention to the value of associations for this purpose. The forestry school of Mariabrunn has increased its pupils 50 per cent. Its course of instruction embraces lessons in the woods, as well as in the laboratory. Local associations have been more active, and have presented an unusually interesting class of discussions.

FRENCH AGRICULTURAL STATISTICS.—The French government is endeavoring to secure the prompt annual publication of a volume of national statistics, embracing movements of population, wages, benevolent institutions, public and private charities, agricultural and industrial statistics, &c. The latest issue, however, represents only the year 1871. From its statements it appears that cereal culture occupied 28 per cent. of French territory, or 14,896,525 hectares out of 52,857,657, the hectare being equal to 2.4711 acres. Their production had risen to 681,000,000 bushels, beside 253,000,000 quintals of straw, with an aggregate value of 5,000,000 francs. Wheat occupied 48 per cent. of the acreage devoted to cereals, and produced one-half their total value. Next stood oats and rye, and then barley, buckwheat, and maize; but the last three covered but 18 per cent. of the cereal acreage, and produced but 14 per cent. of its annual value. During the year agricultural disasters footed up a loss of 118,207,236 francs, of which 38,812,953 francs represented losses from fire; 47,576,202 francs, from hail; 4,763,992 francs, from inundations; 27,054,088 francs, losses in farm-animals. In addition to the above it is stated that losses from frost aggregated 112,500,000 francs, and animal diseases, 18,000,000 francs.

BRITISH COLONIES IN AUSTRALIA.—The following statistics of the colonies named are from official reports for the year 1873:

Colonies.	Population.	Acres cultivated.	Horses.	Cattle.	Sheep.	Pigs.
Victoria	790, 492	964, 996	180, 342	883, 763	11, 323, 080	160, 336
New South Wales	560, 275	456, 825	328, 014	2, 710, 374	10, 928, 590	238, 342

The taxation per head of population was, in Victoria, £2 4*s.* 10¾*d.*; in New South Wales £2 9*s.* 4*d.* In the former the value of the total imports was £16,533,856; total exports, £15,302,454. In the latter, imports, £11,088,388; exports, £11,815,829. In Victoria, miles of railway under construction, 145; of telegraph open, 3,870; under construction, 210. In New South Wales, of railway under construction, 58; of telegraph open, 6,521; under construction, 912. In Victoria the increase of population in the ten years following 1861 was 35.4 per cent.; the increase of males, 22 per cent.; of females, 56 per cent.

SIZE OF BRITISH FARMS.—According to the agricultural returns for 1873, the average area under crops, fallow, and grass in each holding, or separate tenure, was in England and Sotland 56 acres, and in Ireland 26. This was exclusive of land let in "allotments," that is, small patches assigned to laborers to be cultivated for themselves, out of work-hours. In the eastern counties of England the average extent of holdings was, for the most part, higher than the general average, being, in Cambridge, 59 acres; Essex, 82; Huntingdon, 69; Lincoln, 55; Norfolk, 56; and Suffolk, 72. A comparison of the census taken in 1871 with that of 1851 shows a diminution in the number of small, and a corresponding increase in the number of large farms. In 17 representative counties, out of 59,870 farmers making returns in 1871, 12,075 cultivated less than 20 acres; in 1851, these counties returned 12,941 of this class; in 1871, of farmers holding not less than 50 and less than 75 acres, 6,370 were returned; in 1851, 8,253 of the same class; of farmers holding less than 100 acres, in 1871, 33,162 were returned; in 1851, 39,139. On the other hand, the number of farms of 300 acres and upward, in 1851, was 7,771; in 1871, 8,410; the number containing 500 acres and upward, in 1851, 2,755; in 1871, 3,194; the number of 1,000 acres and upward, in 1851, 492; in 1871, 582; of 2,000 acres and upward, in 1851, 64; in 1871, 90.

IMPORTS OF HAVANA.—The importations of the articles named into Havana between January 1, 1865, and September 30, 1874, were as follows:

Years.	Jerked beef.	Flour.	Lard.	Hogshead-shooks.	Box-shooks.	Boards.
	Quintals.	Barrels.	Quintals.	Number.	Number.	Thousand feet.
1865	256,874	196,831	55,926	24,214	291,028	5,872
1866	197,210	325,270	83,651	19,860	248,680	10,928
1867	247,000	147,565	96,808	21,891	469,304	8,223
1868	296,104	144,020	128,028	38,749	491,298	12,802
1869	238,014	175,620	156,938	72,090	362,850	8,947
1870	185,878	257,144	141,347	46,961	495,554	14,795
1871	205,987	192,577	68,868	49,034	868,976	11,683
1872	143,598	179,235	26,580	43,685	541,686	24,663
1873	208,497	233,543	82,647	22,228	596,285	18,511
1874	235,408	357,409	121,907	9,173	330,672	9,118
Annual average	220,718	220,622	96,380	35,017	431,079	13,015

FOREIGN TRADE OF THE UNITED STATES.—The following table shows the values of our imports from, and of our domestic and foreign exports to, the countries named for the fiscal year ending June 30, 1874:

Countries.	Imports.	Domestic exports.	Foreign exports.
Great Britain and Ireland	$193,595,330	$373,566,508	$7,587,644
British North America	38,158,004	42,505,914	4,589,243
British West Indies	5,024,911	9,472,948	210,441
British East Indies and Australia	15,929,841	4,268,906	68,844
British Possessions in the Mediterranean and Africa	2,023,281	4,060,794	26,516
France	51,771,109	48,729,429	739,024
French Possessions in America	1,444,940	1,385,356	19,060
French Possessions in Africa	149,339	135,560	29,390
Spain	4,598,204	11,643,715	9,423
Cuba and other Spanish Possessions	99,468,498	21,861,834	2,164,758
North German Union	44,074,252	64,344,622	1,369,088
Holland	2,516,623	13,712,846	202,578
Dutch West Indies	1,654,960	992,001	40,730
Dutch East Indies	3,857,706	451,462	122
Denmark and Danish West Indies	457,390	2,430,791	22,156
Russia and Russian Possessions	1,257,170	10,284,803	15,937
Austria and Austrian Possessions	488,642	1,682,249	5,972
Portugal	506,135	1,553,042	25,819

SILK PRODUCTION IN EUROPE.—In the report for 1872, of the *Commission des Soies*, read before the *Societé d'Agriculture, Histoire naturelle et Arts utiles*, of Lyons, is found a summary of the status of silk-culture in France and other parts of the world. During 1871, in France, 100,000 ounces of silk-worms' eggs, treated according to Pasteur's method, averaged 30 kilograms, or 66 pounds of cocoons per ounce, the best results indicating double the average. The aggregate product of eggs treated by this process was 6,600,000 pounds of cocoons, representing a value of 18,000,000 to 20,000,000 of francs. It was used on a large scale and with great success in Italy and Austria. During 1871 silk production, as a whole, indicated superior crops both in quantity and quality in France, Spain, and the Levant, equaling the results of 1860, with, perhaps, a slight depreciation in quality. Japanese eggs were the most reliable, but native eggs were produced in such quantity as to revive the hope of reproducing the old French worms in a healthy and robust condition. In the seven leading silk-producing departments of France 505,290 ounces or cards of eggs had been hatched during the year, of which 328,790 were Japanese and 176,600 were native-bred. The gross product of cocoons was 16,217,411 pounds, averaging 32 pounds per ounce of eggs. In ten departments, including the above, the average of the whole was reduced to 28.6 pounds, but about one-third failed to germinate, otherwise the average would have been 43 pounds. The most satisfactory results for native eggs were obtained in the departments of Var, the Alps, and the Eastern Pyrenees. The native eggs also were less costly than the Japanese. Official statistics gave the aggregate number of silk-growers at 139,922, of which 103,621 were operating in a small way and the remainder on a large scale. These ten departments produced nine-tenths of the entire yield of France, which was estimated at over 23,000,000 of pounds.

The Chamber of Commerce of Turin estimated the crop of Italy at about 43,827,000 pounds. In spite of the intelligent efforts devoted to native insects, but partial success had been realized, the best results having been obtained with Japanese eggs—especially the green varieties.

The statistics of 1872 embrace twenty departments of France, in which 807,261 cards of eggs were placed to hatch, but not over half germinated. Of the eggs used 61 per cent. were Japanese, 29 per cent. native, and 10 per cent from other countries. The greatest success in hatching was found in Var and the Basses Alpes. The loss from failure to hatch was there about 50 per cent. greater than in 1871. The principal causes of this failure were defective hibernation, cold and rain at the commencement of the hatching period, bad selection of eggs, &c. The largest loss was in the Japanese eggs. The total product was 22,070,384 pounds of cocoons, averaging about 26 pounds per ounce of eggs hatched. The averages ranged from 80.5 pounds in Hautes Alpes to less than 10 pounds in Loire. The product of raw silk was estimated at over 1,400,000 pounds. Of the cocoon product, about 246,727 pounds were devoted to the reproduction of eggs, yieiding not quite an ounce of eggs to the pound of cocoons, or 231,350 ounces on the whole. Most of this branch of reproduction was in the Basses Alpes, Gard, Drome, Ardeche, and Vaucluse. The market price of Japanese cocoons was from 2.8 francs to 2.9 francs per pound; native, from 3.4 francs to 3.8 francs. The average price of eggs was 14 francs to 16 francs per ounce. The cocoons were perceptibly dearer in 1872 than in 1871, though the eggs were cheaper. Mulberry leaves were sold at about 1 franc for 220 pounds. The official census returned 199,306 silk-producers, of which 35,766

hatched over 5 ounces. The average consumption of the whole number was 4.05 ounces, and the average product was 108.94 pounds of cocoons.

In Spain the largest portion of the crop was from Japanese eggs, which have been quite successful in that country; the progeny of the imported eggs generally improve in size and quality upon their parents; they are generally green. A native yellow breed, raised in the mountains, is highly esteemed. Some Chinese cocoons are well spun, but are deficient in weight of silk. The aggregate product was 5,296,000 pounds of cocoons, from which about 384,000 pounds of raw silk were realized.

The crop of Syria was estimated at 3,771,800 pounds of cocoons and 236,900 pounds of raw silk.

The crop of Broussia was 2,644,800 pounds of cocoons, yielding 170,580 pounds of raw silk.

Greece produced about 2,248,000 pounds of cocoons.

Volo and Salonica, in European Turkey, exported 330,000 pounds of dried cocoons, equivalent to about three times that quantity of fresh ones and to 72,600 pounds of raw silk.

Italy stands at the head of silk production, excelling in scientific study, practical methods, sericultural stations, and publications of all sorts. From the report of the minister of commerce and agriculture, it appears that in Piedmont the breeding of silk-worms was very satisfactory, the best results being obtained with imported Japanese eggs, though some of these failed to germinate on account of imperfect preservation. Their progeny have had various success in reproduction, in some cases excelling the parent breed. The product of cocoons in Piedmont averaged from 55 to 66 pounds per ounce of eggs. In Lombardy, the yield was still better than in Piedmont; the reproduced eggs gave better results. The cocoon product averaged nearly 80 pounds per ounce of eggs for Japanese and 44 for native eggs. The crop was satisfactory in Venetia, where the market-prices were enhanced. In Liguria, where reproduced eggs were more generally used, the result was, on the whole, good. The silk industry of the kingdom was generally prosperous in spite of the failure to germinate in many localities, though a newspaper published at Turin, *Il Commercio Italiano*, thinks the official figures too glowing for the reality. The native white and yellow breeds and the reproduced Japanese were not generally successful.

Brown County, Minnesota.—The following items are condensed from a communication from the secretary of the agricultural association of this county: Quite a number of the farmers insured their crops in the Wisconsin Mutual Hail Insurance Company. In June last a hail-storm did extensive damage, and the insured received as indemnity sums ranging from $25 to $800. The secretary thinks the liabilities to damage from hail-storms are so great throughout the Northwest that the practice of insuring crops against them should become general. But much greater damage was done in the county last season by grasshoppers than by hail. Three towns raised about half crops, and the remainder from that down to nothing. Corn was damaged the least; many farmers had full average crops; the secretary, 50 bushels shelled corn to the acre. The association has introduced a new variety of mammoth squashes, from which specimens have been raised ranging from 70 to 125 pounds each. They are reported good for stock, but too watery for cooking. Buckthorn plants, one year old, purchased and set last spring, have done well, and promise to meet a want for hedges. The attention

of the association has been directed to the lupine raised in Northern Germany as a green crop to plow under. He recommends its more extensive use in that region, and says: "It grows luxuriously on poor sandy soil, where no other vegetable will grow; making it an excellent renovator of poor and worn-out soil." He adds: "There is no scarcity of hay, and no disease among stock, but many farmers suffer for want of food for themselves."

INDUSTRIAL ASSOCIATION IN WASHINGTON TERRITORY.—Our correspondent in Thurston County reports that the Western Washington Industrial Association has recently purchased, at Olympia, grounds sixty acres in extent, on which to hold annual fairs, and that $3,000 will be at once expended in permanent improvements. The site has a supply of water and fine scenery, including a beautiful bay, snow-capped mountains, &c. The association, of which Dr. J. C. Kellogg, of Seattle, King County, was president for 1874, was "organized to develop the resources of Washington Territory."

MODES OF COOKING RICE IN INDIA.—Rice, the staple food of India, is prepared in numerous styles; among these are the following methods, used by the natives of Bengal: First, paddy (unhusked rice) is soaked in cold water twenty-four hours, after which it is dried in the sun, and when sufficiently dry to bear the process is husked in a tread-mill. In the process the grains broken by husking are separated by a fan from the unbroken. Second, the paddy is first soaked in water, then boiled, dried, and husked; different varieties require to be soaked for periods of different length. If the paddy is oversoaked, the rice is dark-colored; if overboiled, it is coarse in appearance; if overdried, it is much broken. Third, the paddy is parched. In this process the grain in parting with its moisture swells up to about four diameters, becomes very light and white in appearance, and the husk is split and separated from the desiccated, puffed grain. Fourth, "flattened paddy." This is first boiled well, and then, after being slightly dried, under the pestle of the tread-mill is husked and flattened at the same time. Fifth, parched rice. The husked rice, being slightly wet with water and salt, is placed on a parching-pan or sand-bath, (the latter gives a better flavor to the rice,) and being briskly stirred, it immediately swells to about one and a half diameters, and becomes anhydrous and blistered by the escaping moisture. But if the rice is cured by boiling the paddy twice before husking, then moistening the husked rice with salt and water and drying it by fire, it is made to contain sufficient moisture to swell the grain when parched to three or four diameters. The foregoing preparations are all white and light. They are eaten generally with salt, pepper, and mustard-oil. Khai (parched paddy) is specially suited for the sick as a healthful, dry, and light food. Confections are made of it with syrup of sugar, syrup of molasses, a variety of spices and condiments, in various forms. Sixth, boiled rice, called bhat. This is the principal food of the natives. "A Bengali, however richly fed, does not feel satisfied unless he takes his usual bhat; meat, fishes, soups, dols, curries, and chatnies, however varied and nicely prepared, are aids and secondaries to bhat." The modes of cooking boiled rice, either alone or in connection with other articles of food, as milk, sugar, and almost every kind of indigenous fruit and vegetable, are too many and diversified to afford room here for description. Rice also enters as an ingredient into a great variety of confections.

CAROLINA RICE IN INDIA.—An official report of a highly successful experiment in cultivating Carolina rice in India is published. The experiment was made in Punjab, on canal-irrigated land. From 3½ seers the yield was 17 mounds, "or about 5 mounds per seer." As there are 40 seers in a maund, this is two hundred fold. The experimenter states:

The grain of the Carolina rice is much larger than that of the India rice, and, on boiling the two together, it was found that the former was done sooner, was much larger, of a whiter color, and possessed a sweeter flavor. The plant of the Carolina rice is equal to that of good India wheat, but stronger, not being liable to be thrown down by a strong wind or rain.

GOVERNMENT GARDENS IN INDIA.—The following statements are condensed from a report for 1873–'74 of the superintendent of the government gardens at Ootacamund, presidency of Madras, India. All newly-imported vegetable-seeds are first tested in the gardens, and those specimens which do not germinate well are destroyed. Hence, those distributed during the year gave general satisfaction. Seeds received from Landreth & Son, of Philadelphia, are noted as germinating well, and "some kinds grew more rapidly than the English seeds." In July, 1873, the government added to the gardens a new tract, to be "devoted to the cultivation of specimens of the choicest varieties of coniferous plants likely to succeed in the climate of the Neilgherries." The soil upon trial proves to be well adapted to the pine and fir tribes; upward of 400 trees of select varieties have been planted, and all are doing well. New varieties, imported from Europe and Australia, were to be added the coming season. Among plants cultivated in the gardens during the year were eight new varieties of the flowering shrub, *Camellia*, imported from England, and doing well—"easily propagated, either by cuttings or layers, and require little care when once established." Several species of oak, from Australia; varieties of strawberries, also from Australia, with very encouraging results; the *Rhea*, a valuable fiber-yielding plant, and seedling potatoes. A large number of the latter were raised from seeds imported from America, some of which promise to be valuable for cultivating on the hills. With reference to frequent applications from all parts of India, for trees from Australia, especially the *Eucalyptus globulus*, the report states:

For all purposes requiring strength and durability, few timbers in the world can compare with those of Australia. This superiority over other timber lies in their tougher and more closely packed tissues. Other advantages, possessed by such timber as the different species of iron-bark, are their flame-resisting qualities. Lately the *Eucalyptus globulus* has attracted much attention, not only for the value of its timber, but as possessing wonderful medicinal properties.

The distributions during the year included 4,475 packets of flower and vegetable seeds; 6,877 flowering plants and shrubs; 2,528 timber-trees, and 471 fruit-trees.

AN IMPORTANT INQUIRY.—In Great Britain a prize of 25 guineas has been offered for the best essay on "The application of sanitary science to rural districts, with a view to insure the highest condition of health and the prevention of disease." The successful essay is to be the one which best presents the following points: First, means practicable and easy of application for securing a supply of pure water and the discharge and disposal of refuse; second, the most simple plan of rural organization for securing cleanliness and pure air within and around dwellings; third, the best means of carrying out the objects specified under the most varying circumstances.

ILLINOIS ORCHARDS AND WOODLANDS.—The State board of equalization report that the number of acres in orchards returned by county

assessors in Illinois in 1872 was 320,702; in 1873, 334,067; increase, 13,365 acres. The number of acres of woodland in 1872, 6,289,236; in 1873, 6,928,061; increase, 638,825 acres.

COLLEGE-FARM EXPERIMENTS.—Mr. B. F. Johnson, in charge of farm experiments in the Illinois Industrial University at Champaign, has issued a programme of proposed experiments. In it subjects for experiment are designated under seven heads; cereals; clovers, and grasses; the industrial and commercial plants; roots; vegetables; commercial and other manures; and fertilizers. A condensed statement of the more important modes and results arrived at follows: For corn, the great crop of the State, seven distinct experiments are designated; first, to obtain and test seed of two large varieties from South America; the Caragua, unlike any corn cultivated in Illinois, but, where grown, greatly valued for soiling; and the Casco, a giant kind, with a view by crossing to enlarge and invigorate varieties now in use; second, to give an acre the best known fertilizing, culture, and care, with a view to the largest possible yield; third, in a five-acre patch, to give every alternate eight rows deep and thorough cultivation continued up to maturity; but the other half, only "the common cultivation" terminated at the usual time; with a view to decide the extent in thoroughness and duration, to which cultivation may be profitably carried; fourth, in a five-acre patch, with strips of rows alternated in the same way, to terminate cultivation in alternate strips with the soil turned up to the rows and a high ridge between them; but in the other half with the surface-level; fifth, in a five-acre patch, alternating the same way, to treat one-half with deep, but the other with shallow, cultivation; sixth, to plant together several of the largest and best kinds, of different complexions, and from the product select the best ears, regardless of color, for the next seeding, and so on, with a view to ascertain "the true tendency in color, size, and quality, when nature makes the selection;" seventh, to plant one of the best varieties as remote as may be from other cornfields with a view to test the practicability of keeping any one kind unmixed. Without specifying modes, experiments are proposed with spring-wheat, "quite a doubtful crop in Central Illinois," spring-rye, "a rare crop," and oats, with the aim of rendering a doubtful crop more certain, a rare one more general, and improving one already general and profitable. Trials of barley-seed from abroad are proposed with the design of ascertaining why it is now a very doubtful crop, and whether success is practicable; and of buckweat, also very doubtful, by sowing the common and the silver-hull varieties two or three weeks earlier than the usual time; tests of alfalfa, lucerne, Italian rye-grass, and orchard-grass, with a view to discover grasses for pasture and forage which will withstand droughts. Under "commercial and industrial crops" experiments are proposed with cotton, flax, hemp, hops, and tobacco; under "vegetables," potatoes are assigned a prominent place, and next to them cabbage.

SWINE IN HUNGARY.—From an improved breed introduced from Serbia, about 1840, have been gradually reared up two distinct varieties which now constitute the current stock of swine in Hungary. "One of these breeds has pale, yellowish bristles; the other is black, with a lighter shade only toward the belly." These hogs are covered in summer with a smooth "hair-coat," but in winter with "thick curly hair," which serves as a protection against rough weather. The season for producing pigs is usually limited to the month of January. The sow produces a litter of from five to eight. They do not attain full growth short of

twenty months. At that age breeding-sows begin to bear and continue until the seventh year. The sows are fed on barley-meal until the pigs are about a month old, after which they are fed once a day only, three to four pounds of corn, being driven to pasture forenoon and afternoon. At six or eight weeks the pigs are weaned. The males having been castrated, they are driven as early as April, when the weather is favorable, to pasture, or rather with the better breeders, to fields or lucerne or clover provided for them. They, however, continue to receive some grain until the stubble-fields are open to them. In autumn they are driven to the forests, and in many localities they return the last of December half-fattened on acorns. They are then sold to persons who make a business of fattening. Swine are rated as "half-fat" at 300 pounds; when they reach 400 to 460, they are reckoned as "prime ware," and are sold as pork, 40 pounds being deducted from live weight.

The annual export of swine from Hungary, as far back as 1840, did not exceed 350,000 head, much the largest part being transit trade. From 1860 to 1865 it averaged 422,000 head per annum, more than 200,000 of which were bred in Hungary. Success gave increased impetus to the business. The chief feeding-place, a veritable pig-town, arose in the neighborhood of Buda Pesth, at Steinbruch. In 1872, at the latter place, the import amounted to 549,620 head; the export, 520,130. The value of the imported pigs was $14,660,285; value of maize consumed, $2,200,000; total, $16,860,285; value of exports in fattened pigs, $16,635,285.

TRICHINA.—Mr. Charles G. Boemer, of Vervay, Switzerland County, Indiana, reports to this Department the result of microscopic examinations recently made by him to determine whether pork in that locality was affected with this parasite. Out of 187 slaughtered hogs examined, 11 were found to be affected. Three of these contained encysted *trichina spiralis*, and eight, various other forms. The parts examined were the ham, shoulder, and tenderloin. A magnifying power of from 50 to 100 diameters most distinctly revealed the parasite when present; a higher power cut off the light too much. He also found in the muscles of a rat he examined, trichina identical with those in the flesh of the swine.

AGRICULTURE IN UTAH.—A correspondent in Kane County, Utah, reports as follows: Last season fruit of almost all kinds in that locality yielded 25 to 50 per cent. above the average; sweet-potatoes yielded in some places about 4 tons to the acre; wheat, corn, cotton, sugar-cane, and all other crops were full average. Farmers in almost all parts of the Territory are forming co-operative companies, and those who worked on that system last year did well.

CONSUMPTION OF PAPER BY DIFFERENT NATIONS.—Signor Eugenio Morpurgo estimates that the Russians consume paper at the rate of 1 pound per capita per annum; the Spaniards, 1½ pounds; the Italians, 3½; the French, 7; the Germans, 8; the English, 11½; the Americans, 171. He states that there are in the whole world 3,960 paper-making establishments, the aggregate annual product of which is estimated at 1,809,000,000 pounds of paper. One-half is used for printing, one-sixth for writing, and the remainder for packing.

EXHAUSTIVE WHEAT-CULTURE.—Our correspondent in Stearns County, Minnesota, presents the following trenchant statistical facts to illustrate the impolicy of the exclusive devotion to wheat-culture which has so seriously injured the farming interest of the Northwest. For six

years past wheat in Stearns County has not averaged over 14 bushels per acre, nor over 70 cents per bushel, making the average money product per acre $9.80. The average cost of cultivation—including 1½ bushels of seed, $1.40; plowing, $1.75; seeding and harrowing, $1; harvesting, thrashing, and stacking, $5.30; and hauling to market, $1.25—amounts to $10.70, showing a net loss of 90 cents per acre, without allowing for interest on investment, wear and tear of machinery, &c., which would enlarge the debit balance still further. To work a farm of 60 acres on this principle would bring the farmer in arrears annually $114. "Is it any wonder that mortgages are accumulating and western farmers are complaining of hard times?" Our correspondent thinks that this destructive system is passing away, and that a new era is dawning in which farmers of that region, by diversifying their industry, will place the balance on the other side of the ledger.

ANTIDOTE FOR SMUT IN WHEAT.—Our correspondent in Douglass County, Oregon, fully indorses the recommendation of our correspondent in Sonoma, Cal., in the October report, in regard to soaking seed-wheat in a solution of sulphate of copper. The only amendment he suggests is to increase the proportion from six to eight ounces of the drug to the cental of seed.

WINE-PRODUCTION IN SOUTHERN FRANCE.—At the session of the International Viticultural Congress, in October, 1874, at Montpelier, France, M. Saint Pierre, professor in the medical school of that city, by invitation, gave some facts in regard to the fabrication of imitated wines, a branch of business which had of late rapidly developed in Hérault, especially at Cette and Mèze. The product of this manufacture is mostly exported, the bulk being sent to Russia, Denmark, Holland, England, and North and South America. Cette alone makes nearly 8,000,000 gallons per annum, worth about 15,000,000 francs. Two-thirds of this aggregate are consumed in America. The only wines that can be successfully imitated are those rich in alcohol, such as the wines of Spain and Portugal. It is not true that grape-juice is the only thing omitted in the composition of these wines, as that is the cheapest ingredient. Nor is coloring matter used to any extent, as the wines to be imitated are white. The Portuguese formerly colored their wines with elderwood, but abandoned it on finding that it injured the wine. The imitation of Spanish wines utilizes a large amount of cheap wines in the south of France, the production of which has been stimulated of late years. These wines show scarcely 11 degrees of alcohol, but with the addition of sirup of mulberry and alcohol the strength is raised to 21 degrees. The professor, with great *naiveté*, pleads for the encouragement of this industry.

Some difference of opinion was manifested in regard to the use of sulphuric acid in fermentation. It was contended that in very small proportions it could be used with advantage and without danger. Others thought that it should be combined with gypsum, thus securing a double decomposition, in which an equivalent of tartaric acid was evolved, which is the natural acid of the wine. It was objected that the sulphuric acid of commerce is too often charged to a dangerous extent with arsenical principles.

The members of the congress visited Cette and Méze, and inspected several manufactories. One of the largest at Cette had then stored over 280,000 gallons in cellars containing from 80,000 to 100,000 gallons each. The total value of the whole deposit is stated at a million francs. The cost of storage, including casks, &c., amounted to 650,000 francs, at 10

francs per hectoliter. Vineland, in the neighborhood, yields 800 francs per acre in wine product, representing a cash value of 10,000 francs per acre invested in the soil. If the phylloxera should compel the destruction of these vines, the value of the land will sink to one-fifth of what it is at present. At Méze one establishment astonished the visitors by the vast extent of its cooper-shops, and its steam-engines of great power pumping the wine from great cisterns into the casks. This extensive use of machinery has superseded in a large measure the expensive hand-labor formerly employed. In the south of France six hours is counted a day's work. A radical change in the conditions of labor is foreshadowed in this primitive region. Combinations of workmen have at times elevated the day's wages to 10 francs for six hours' work. The congress also inspected the process of imitating Spanish wines.

MARKET-PRICES OF FARM-PRODUCTS.

The following quotations represent, as nearly as practicable, the state of the market at the beginning of the month:

Articles.	Prices.	Articles.	Prices.
NEW YORK.		**BOSTON.**	
Flour, superfine State ...per bbl.	$4 00 to $4 50	Flour, western superfine..per bbl.	$4 00 to $4 50
extra State .....do...	4 80 to 5 65	common extra .....do...	4 50 to 5 00
superfine western ...do...	4 00 to 4 50	red wheats, good to fancy northwestern ..per bbl.	5 25 to 9 00
extra to choice western, per barrel	4 75 to 8 00	white wheats, good to fancy western..per bbl.	5 00 to 8 00
common to fair southern extra.....per bbl.	4 90 to 5 85	southern family.....do...	6 50 to 8 00
good to choice southern extra.....per bbl.	5 90 to 8 25	Wheat .....per bush.	— — to — —
Wheat, No. 1 spring ...per bush.	1 20 to 1 25	Corn .....do...	90 to 92
No. 2 spring .....do...	1 11 to 1 17	Oats .....do...	66 to 72
winter, red, western, per bushel	1 20 to 1 32	Rye .....do...	1 00 to 1 05
winter, amber, western, per bushel	1 20 to 1 32	Barley ... .do...	1 20 to 1 60
winter, white, western, per bushel	1 30 to 1 37	Hay, eastern and northern, per ton	10 00 to 23 00
Rye.....per bush.	92 to 95	choice western ....per ton.	22 00 to 23 00
Barley .....do...	1 40 to 1 60	Beef, mess.....per bbl.	10 50 to — —
Corn .....do...	86 to 97	extra mess.....do...	13 50 to — —
Hay, first quality .....per ton.	14 00 to 19 00	family .....do...	16 00 to 17 00
second quality.....do...	13 00 to 14 00	Pork, prime .....do...	18 00 to — —
Beef, mess .....per bbl.	9 50 to 10 50	mess .....do...	21 00 to 21 50
extra mess .....do...	11 00 to 12 50	Lard .....per lb.	14 to 14½
Pork, mess.....do...	19 75 to 20 50	Butter, New York and Vermont, per pound	32 to 40
extra prime.....do...	17 00 to — —	western .....per lb.	22 to 37
prime mess .....do...	19 00 to — —	Cheese, New York and Vermont, factory .....per lb.	13 to 16
Lard .....per lb	13⅝ to —	western factory....do...	12 to 15½
Butter, western .....do...	18 to 33	Sugar, fair to good refining..do...	8⅛ to 8⅝
State dairy.....do...	30 to 42	Cotton, ordinary to good ordinary .....per lb.	12¼ to 14
Cheese, State factory.....do...	14 to 16	low middling to good middling.....per lb.	14 to 15½
western factory ....do...	12 to 15½	Wool, Ohio and Pennsylvania, per pound	53 to 60
Cotton, ordinary to good ordinary .....per lb.	11⅝ to 13¼	Michigan .....per lb.	50 to 52
low middling to good middling ... ...per lb.	13¾ to 15	other western.....do...	45 to 52
Sugar, fair to prime, refining, per pound	8¼ to 8½	pulled.....do...	40 to 55
Tobacco, lugs .....per lb.	10½ to 13½	California.....do...	— to —
low leaf to medium leaf .....per lb	12¾ to 17	**PHILADELPHIA.**	
Wool, American XXX and picklock.....per lb.	53 to 65	Flour, superfine.....per bbl.	3 75 to 4 00
American X and XX, per pound.....	47 to 57	Pennsylvania, extra to choice.....per bbl.	4 25 to 5 75
American, combing, per lb.	51 to 65	western extra to patent, per barrel.....	4 25 to 7 12½
pulled .....do...	33 to 45	Wheat, white.....per bush.	1 35 to 1 40
California spring clip, per pound	25 to 37	American .....do...	1 25 to 1 26
California fall clip..per lb.	18 to 27	red .....do...	1 22 to 1 23
		Rye.....do...	1 00 to — —

Market-prices of farm-products—Continued.

Articles.	Prices.				Articles.	Prices.			
PHILADELPHIA—Continued.					CINCINNATI—Continued.				
Barley.....per bush.	$1 60	to	—	—	Lard .....per lb.	$0 13½	to	$0 14½	
Corn .....do...	80	to	$0	84	Butter, choice.....do...	28	to	30	
Oats .....do...	62	to	69		prime .....do...	24	to	25	
Hay, baled, prime .....per ton.	20 00	to	22	00	Cheese, prime to choice factory, per pound	15	to	15½	
baled, common to fair shipping.....per ton.	19 00	to	20	00	Sugar, New Orleans, fair to good, per pound	8	to	9	
Beef, western mess .....per bbl.	7 00	to	9	00	New Orleans, prime to choice.....per lb.	9¼	to	9½	
extra mess .....do...	8 00	to	9	00	Tobacco, lugs .....do...	12	to	25	
Warthman's city family, per barrel	16 00	to	—	—	leaf.....do...	15	to	37½	
Pork, mess.....per bbl.	20 00	to	20	50	Cotton, ordinary to good ordinary .....per lb.	10½	to	12¼	
prime mess.....do...	18 00	to	—	—	low middling to good middling.....per lb.	13	to	14½	
prime.....do...	19 00	to	—	—	Wool, fleece, common to fine, per pound	43	to	47	
Lard .....per lb.	13¾	to	18		tub-washed .....per lb	48	to	50	
Butter, choice middle State.do...	32	to	44		unwashed, clothing do...	32	to	33	
choice western .....do...	30	to	32		unwashed, combing .do...	35	to	38	
Cheese, New York factory..do...	16	to	16½		pulled ....do...	35	to	38	
Ohio factory .....do...	15	to	16		CHICAGO.				
Sugar, fair to good refining do...	8½	to	8⅝						
Cotton, ordinary to good ordinary .....per lb.	11¾	to	13⅜		Flour, choice winter extras, per barrel	5 25	to	6	50
low middling to good middling .....per lb.	13⅜	to	14⅝		common to good ..per bbl.	4 25	to	5	00
Wool, Ohio X and XX.....do...	52	to	58		choice spring extras.do...	4 40	to	4	60
other western .....do...	—	to	56		patent spring .....do...	6 00	to	10	00
tub-washed.....do...	55	to	62½		spring superfines....do..	3 00	to	3	75
pulled.....do...	43	to	52½		Wheat, No. 1 spring ...per bush.	93½		93½	
combing.....do...	65	to	68		No. 2 spring.....do...	90¼	to	90½	
BALTIMORE.					No. 3 spring.....do...	84½	to	84⅝	
Flour, superfine .....per bbl.	4 00	to	4	50	Rye, No. 2 ....do...	98	to	99	
extra.....do...	4 75	to	6	00	Barley, No. 2 .....do...	1 24	to	1	28½
family and fancy ....do...	5 50	to	8	50	Corn, No. 2 .....do...	61	to	62½	
Wheat, red .....per bushel.	1 15	to	1	28	Oats, No. 2 .....do...	52¼	to	52¼	
amber .....do...	1 15	to	1	35	Hay, timothy. .....per ton.	15 00	to	18	50
white .....do...	1 20	to	1	35	prairie .....do...	11 50	to	12	50
Rye.....do...	97	to	1	00	Beef, mess .....per bbl.	8 25	to	—	—
Oats .....do...	63	to	65		extra mess.....do...	9 25	to	—	—
Corn .....do...	78	to	85		Pork, mess . ...do...	19 05	to	19	12½
Hay, Maryland and Pennsylvania .....per ton.	15 00	to	20	00	prime mess.....do...	16 75	to	17	00
Pork, mess .....per bbl.	20 50	to	—	—	extra prime.....do...	14 00	to	14	50
extra prime .....do...	17 00	to	—	—	Lard .....per cental.	13 10	to	—	—
Lard .....per lb.	14½	to	—		Butter, choice to fancy ...per lb.	30	to	37	
Butter, western .....do...	18	to	35		medium to good .. .do...	24	to	27	
eastern.....do...	22	to	40		Cheese, prime factory.....do...	14¾	to	15½	
Cheese, western factory ....do...	14½	to	15½		good.....do...	14	to	14½	
eastern factory.....do...	15	to	16½		Sugar, N. O., common to choice per pound	7	to	9	
Sugar, fair to good refining.do...	7¾	to	8¼		Wool, tub-washed .....per lb.	45	to	57	
New Orleans, grocery grades.....per lb.	7¾	to	8½		fleece-washed.....do...	40	to	48	
Tobacco, lugs.....per cental.	6 00	to	11	50	unwashed .....do...	27	to	36	
common to medium leaf, per cental.....	8 50	to	14	50	pulled .....do...	42	to	47	
Cotton, ordinary to good ordinary .....per lb.	—	to	13¼		SAINT LOUIS.				
low middling to middling .....per lb.	13¾	to	14		Flour, winter, common to choice, per bbl.....	4 00	to	7	00
Wool, unwashed .....do...	34	to	36		spring .....per bbl.	4 00	to	5	50
washed.....do...	50	to	55		Wheat, white winter...per bush.	83	to	1	08
CINCINNATI.					red winter.....do...	95	to	1	06
					spring .....do...	85	to	90	
Flour, superfine.....per bbl.	3 75	to	4	10	Corn .....do...	64	to	74	
extra.....do...	4 70	to	4	90	Rye.....do...	90	to	97	
family.....do...	4 90	to	5	10	Barley .....do...	1 00	to	1	50
Wheat, winter, red ....per bush.	1 07	to	1	10	Oats .....do...	55	to	62	
hill, (amber).....do...	1 12	to	1	14	Hay, timothy.....per ton.	19 00	to	22	00
white .....do...	1 14	to	1	22	prairie.....do...	12 00	to	16	00
Rye .....per bush.	1 09	to	1	10	Beef, mess .....per bbl.	14 00	to	15	00
Barley ....do...	1 25	to	1	48	Pork, mess.....do...	19 25	to	19	75
Corn.....do...	70	to	71		Lard .....per lb.	12	to	14	
Oats .....do...	59	to	63		Butter, prime to choice dairy, per pound.....	30	to	33	
Hay, baled, No. 1.....per ton.	20 00	to	21	00	prime to choice country packed.....per lb.	25	to	29	
lower grades.....do...	14 00	to	19	00	Cheese, Ohio factory .....do...	13	to	13½	
Beef, plate ..... per bbl.	— —	to	—	—					
Pork, mess .....do...	19 00	to	19	25					

Market-prices of farm-products—Continued.

Articles.	Prices.		
SAINT LOUIS—Continued.			
Cheese, N. Y. factory.....per lb	$9 13	to	$0 13½
Wool, tub-washed .....do...	50	to	54
fleece-washed.....do...	32	to	52
unwashed.....do...	28	to	36
NEW ORLEANS.			
Flour, superfine .....per bbl.	5 00	to	— —
extra.....do...	5 25	to	5 62½
choice to fancy .....do...	5 75	to	6 75
Corn, white, ...per bush	92	to	93
yellow .....do...	90	to	—
Oats.....do...	72	to	73
Hay, choice.....per ton	— —	to	— —
prime .....do...	24 00	to	— —
Beef, Texas.....per bbl.	11 20	to	— —
western.....do...	11 00	to	15 50
Fulton market...per ¼ bbl.	11 50	to	— —
Pork, mess .....do...	20 00	to	21 00
Lard .....per lb.	12¾	to	14¾
Butter, choice Goshen .....do...	43	to	—
choice western .....do...	30	to	32
Cheese, choice western factory, per pound.....	16	to	16½
N. Y. cream.....per lb.	18	to	—
Sugar, fair to fully fair.....do...	6¼	to	7¾
prime to strictly prime, per pound	7⅞	to	8¼
clarified, white, and yellow .....per lb.	8½	to	9½

Articles.	Prices.		
NEW ORLEANS—Continued.			
Cotton, ordinary to good ordinary.....per lb.	$0 11¼	to	$0 13½
low middling to good middling .....per lb.	14⅝	to	17½
Wool, lake and fall clip... do...	25	to	—
SAN FRANCISCO.			
Flour, superfine .....per bbl.	3 90	to	4 30
extra.....do...	4 50	to	— —
family and fancy ....do...	4 75	to	5 12½
Wheat, California ....per cental.	1 40	to	1 60
Oregon.....do...	1 40	to	1 55
Barley .....do...	1 20	to	1 50
Oats .....do...	1 45	to	1 75
Corn, white.....do...	1 40	to	1 45
yellow .....do...	1 30	to	1 35
Hay, State .....per ton	12 00	to	16 00
Beef, mess.....per bbl.	8 00	to	9 00
family mess.....per ¼ bbl.	6 50	to	8 00
Pork, mess .....per bbl.	23 00	to	24 00
prime mess .....do..	17 50	to	20 00
Lard .....per lb.	13	to	15
Butter, overland .....do..	25	to	40
California .....do..	25	to	50
Oregon.....do..	20	to	35
Cheese.....do..	12½	to	16
Wool, native .....do..	12	to	20
California.....do..	15	to	22
Oregon .....do..	18	to	22

LIVE-STOCK MARKETS.

NEW YORK.			
Cattle, extra beeves...per cental.	$13 75	to	$14 00
good to prime.....do....	11 50	to	13 50
common to fair.. ...do....	9 00	to	11 90
Texas & Cherokees.do....	8 50	to	10 50
milch-cows.....per head.	40 00	to	80 00
veal-calves.....per cental.	7 00	to	10 50
Sheep, fair to extra .....do....	6 00	to	7 50
Swine .....do....	7 50	to	8 00
PHILADELPHIA.			
Cattle, prime beeves ..per cental.	7 75	to	8 25
fair to good.....do....	6 00	to	7 50
common .....do....	4 00	to	5 75
Sheep .....do....	5 00	to	8 00
Swine, corn-fed .....do....	9 75	to	10 75
BALTIMORE.			
Cattle, best beeves....per cental.	5 50	to	7 12
first quality .....do....	4 37	to	5 50
medium .....do....	3 75	to	4 75
ordinary .....do....	3 00	to	3 75
general average ...do....	4 62	to	— —
most of the sales ..do....	4 25	to	5 50
milch-cows.....per head	30 00	to	45 00
Sheep .....per cental.	2 25	to	6 50
Swine .....do....	9 00	to	9 75
CINCINNATI.			
Cattle, good to choice butchers' steers.....per cental.	4 75	to	6 00
medium to fair ....do....	3 50	to	4 50
common .....do....	2 50	to	3 25
milch-cows.....per head	30 00	to	50 00
veal-calves....per cental.	3 50	to	5 50
Sheep, common to extra....do....	4 00	to	6 00
Swine, good to choice .....do....	7 45	to	7 65
fair to medium .....do....	7 15	to	7 40
CHICAGO.			
Cattle, extra-graded steers, averaging 1,500 pounds, per cental.....	6 50	to	7 35

CHICAGO—Continued.			
Cattle, choice beeves, 1,200 to 1,400 pounds, per cental.	$5 75	to	$6 25
good beeves, 1,000 to 1,250 pounds.....per cental.	5 25	to	5 70
medium to fair .....do....	3 75	to	5 25
Texans, corn-fed... do....	4 00	to	5 00
Texans, through-droves, per cental.....	1 75	to	4 00
Sheep .....per cental.	3 00	to	6 50
Swine .....do....	6 25	to	7 25
SAINT LOUIS.			
Cattle, fair to choice native steers, per cental.....	4 75	to	6 00
common to fair natives, per cental	3 25	to	4 50
inferior to common, per cental	2 00	to	3 50
Texans, fair to choice, per cental.....	2 50	to	3 75
Sheep.....per cental.	2 25	to	4 75
Swine .....do....	4 00	to	6 90
Horses, plugs .....per head.	40 00	to	75 00
plain .....do....	80 00	to	110 00
street-car, heavy ..do....	75 00	to	125 00
heavy-draught ....do....	130 00	to	170 00
good drivers..... do....	100 00	to	150 00
extra.....do....	175 00	to	180 00
Mules, 14 to 15 hands high .do....	75 00	to	120 00
15 to 16 hands high .do....	120 00	to	180 00
extra .....do....	175 00	to	200 00
NEW ORLEANS.			
Cattle, Texas beeves, choice, per head.....	40 00	to	46 00
first quality ....per head.	30 00	to	35 00
second quality .....do....	20 00	to	25 00
western beeves, per cental.	4 00	to	6 00
milch-cows.....per head.	35 00	to	100 00
calves .....do....	7 00	to	9 00
Sheep, first quality.....do....	4 00	to	5 00
second quality .....do....	3 00	to	4 00
Swine .....per cental.	5 00	to	7 50

FOREIGN MARKETS.

WHEAT.—The weather in the wheat-growing regions of Europe threatened a winter of a fluctuating and injurious character, but it subsequently developed a tendency to severe cold. This, however, has been partially moderated, and the weather, though seasonable, has not been extreme. A very considerable rainfall has ameliorated the autumnal drought, giving more promise to the growing crops. The wheat region around Odessa had suffered to such an extent that all hopes of a fair crop had been surrendered, but subsequently the rain fell copiously, followed by snow. Yet this favorable change, prognosticating a good yield, did not induce holders of grain to sell, but rather to hold on till spring, in hope of better rates. British farmers, generally with good fall sowings, were inclined to take the same view of the situation and to act accordingly. These facts have checked the downward tendency of the wheat market, and had, by the middle of December, produced a slight re-action, which, however, has not shown a very permanent character, though the confidence in better prices seems to be buoyant in many quarters, especially in Odessa. In Holland and some parts of Germany the markets were at once active and steady, but in Belgium and France there was a tendency to inaction.

During the second week in December, the sales of English wheat, noted by the Mark Lane Express, amounted to 64,783 quarters, at 44*s.* 8*d.*, against 62,380 quarters, at 61*s.* 6*d*, during the corresponding week of 1873. The London averages were 46*s.* 4*d.*, on 2,998 quarters. The week opened on a moderate supply of English wheat, with reduced foreign arrivals, almost all from America. There was moderate inquiry, and transactions fully equaled the prices of the previous week. In Mark Lane, London, Essex, and Kent, white brought from 45*s.* to 50*s.* per quarter; ditto, red, 42*s.* to 46*s.*; Norfolk, Lincolnshire, and Yorkshire, red, 42*s.* to 46.; Dantzic, mixed, 50*s.* to 58*s.*; Königsberg, 47*s.* to 57*s.*; Rostock, 47*s.* to 50*s.*; Silesian, red, 46*s.* to 48*s.*; ditto, white, 49*s.* to 51*s.*; Pomeranian, Mecklenberg, and Uckermark, 45*s.* to 49*s.*; Ghirka, 42*s.* to 43*s.*; Russian, hard, 40*s.* to 44*s.*; Saxonska, 45*s.* to 47*s.*; Danish and Holstein, red, 41*s.* to 51*s.*; American, 42*s.* to 46*s.*; Chilian, white, 51*s.*; Californian, 52*s.*; Australian, 52*s.* to 55*s.* In Liverpool, Canadian, white, is quoted at 9*s.* 10*d.* to 10*s.* 4*d.*; American, white, 9*s.* 10*d.* to 10*s.* 4*d.*; ditto, red winter, 9*s.* 5*d.* to 9*s.* 10*d.*; No. 1, spring, 9*s.* 2*d.* to 9*s.* 9*d.*; No. 2, spring, 8*s.* 8*d.* to 8*s.* 6*d.*; average Saidi, 8*s.* 3*d.* to 8*s.* 6*d.*; California, average, 9*s.* 10*d.* to 10*s.* 3*d.*; Oregon, 10*s.* 6*d.* to 10*s.* 8*d.*; Chilian, 9*s.* 3*d.* to 9*s.* 6*d.* In Paris the trade was calm, with unchanged prices. White brought 42*s.* 6*d.* to 47*s.* per quarter; red, 41*s.* to 45*s.* 6*d.*, the market closing heavily. The French country markets showed a disposition to recede. The heavy rains had rendered the roads in Algeria unfit for transportation, hence the supplies were short. The Baltic, being frozen in a large portion of its surface, had stopped the movement from Russia to the western markets, except by rail. The general tone of the market was against sellers.

FLOUR.—The recent rains upon the European continent had raised the streams, and again set in motion the mills which had stopped running, especially in France. This caused a sudden increase in the supplies of flour, which caused some stagnation in the market. There was at the opening of the second week in December, in Mark Lane, a good supply of country flour, with a fair amount of foreign arrivals, mostly American, in barrels. An increased demand had stiffened up prices,

which were fully maintained. In Mark Lane the best town households brought 36*s.* to 43*s.* per quarter; best country households, 32*s.* to 33*s.*; Norfolk and Suffolk, 29*s.* to 31*s.* In Liverpool English and Irish superfines brought 33*s.* to 36*s.* per 280 pounds; extra, 38*s.* to 42*s.*; French, 37*s.* to 47*s.*; Trieste, 48*s.* to 60*s.*; Spanish, 38*s.* to 39*s.*; Chilian, 31*s.* 6*d.* to 36*s.*; Californian, 37*s.* to 38*s.*; American western and extra, per barrel, 22*s.* to 24*s.*; Baltimore and Philadelphia, 22*s.* to 24*s.*; Ohio and extra, 23*s.* to 28*s.* 6*d.*; Canadian, 22*s.* to 23*s.* 6*d.*; ditto, extra, 24*s.* to 27*s.* In Paris the market was dull at 32*s.* 8*d.* to 35*s.* 3*d.* per 280 pounds.

MAIZE.—The supply in Mark Lane was short at the opening of the second week in December, and prices were higher. White was quoted at 40*s.* to 42*s.* per quarter; yellow, 37*s.* to 40*s.* In Liverpool, American, new and old, brought 39*s.* 6*d.* to 40*s.*; Galatz, 41*s.* to 42*s.*

MONTHLY REPORT

OF THE

DEPARTMENT OF AGRICULTURE,

FOR

FEBRUARY AND MARCH 1875.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1875.

CONTENTS.

MONTHLY REPORT.

DEPARTMENT OF AGRICULTURE,
STATISTICAL DIVISION,
March 27, 1875.

SIR: The statistical report of the present month embodies statements of local preferences for material in soil-fertilization, of the products employed in feeding and fattening animals, the length of time and cost of winter-feeding, the local surplus and local deficiencies of crops; a statement of the production of tobacco in 1875, its quality and value; a record of minor official statistics; current market-prices of products in this and other countries; and bulletins of the work of other divisions of the Department of Agriculture.

J. R. DODGE,
Statistician.

Hon. FREDERICK WATTS,
Commissioner.

STATISTICAL RETURNS FOR MARCH.

The March circulars sent to our statistical corps, which now represents 1612 counties, including nearly all of the producing area of the country, are of a miscellaneous character, and not repeated annually. It was deemed desirable to obtain a statement of local preferences for fertilizers and modes of soil-fertilization, and also of the kinds and proportion of products for feeding and fattening animals, the length of time and cost of feeding in winter, and some facts indicative of the local surplus and local deficiencies of the different crops. The following list of questions was very generally answered in the returns which were received from 1096 different counties:

1. What fertilizers are used in your county? What proportions of such fertilizers are farm-yard manures? home-made composts? commercial fertilizers? Are the latter deemed profitable?

2. What proportion of hay-fields are usually in clover? what in cultivated grasses, and principally of what kinds? what in native or wild grasses? Is green-manuring with clover practiced? If so, is the full crop, the second growth, or only the stubble turned under? Please state the practice and its results in soil-improvement; specific and significant facts desired, rather than general views.

3. Number of months in the year in which domestic animals are fed exclusively? Number of months in which partial feeding supplements pasturage? and what are the principal kinds of forage used, and proportions of each? Is grain fed to animals? If so, when, how liberally, and to what kinds of stock? What proportion of your corn-crop is consumed in the county?

4. What is the cost per head, in cash-value, of forage, for wintering horses? milch cows? sheep? What is your estimate of the average value of each of these classes of stock in autumn? in the spring? Is there an average increase of weight during the winter, or decrease? and how much of either?

5. What percentage, if any, of the value of your crops is sold to go out of the county? What is the leading crop thus sold? What proportion, if any, of your farm-animals is sold to go beyond the county?

6. What products of agriculture are brought into the county for consumption, and what percentage of the home consumption? What farm-animals, if any, are brought from abroad, and to what extent?

7. Has your county derived any advantage the past year from association and co-operation, in marketing crops, or in procuring supplies? If so, can you give an approximate estimate of the aggregate sum thus saved? Individual facts in this connection will be acceptable.

LOCAL PREFERENCES FOR FERTILIZERS.

The investigation demonstrates the fact that farmers are learning the necessity of increasing the store of plant-food in the soil, of having it in an immediately available form, and of supplementing notable deficiencies with specific fertilizers. They are becoming better versed in the philosophy of fertilization, and better able to adapt their practice to the peculiarities of their soils, and to their local resources in material for fertilization, both by an increase in theoretical or scientific knowledge and in experience gained in successful application of such acquirement. Not all are thus intelligent; a large proportion yet see by the dim light of tradition, and follow only methods found successful in their personal observation, often with little regard to differing circumstances of soil and situation. It is true, nevertheless, that the average practice of these practical men is essentially sound, and really based on reason and science.

Though half of the counties in the United States are cultivated almost literally without fertilizers of any sort, and another fourth with the casual aid of green manuring, or a little lime, or plaster, or cotton-seed, or a "cow-penned" lot, or some trifling saving of farm-yard manure, it is still true the practice of systematic fertilization is increasing. It is not only increasing, but is followed with a better adaptation of means to ends, and with a superior economy in the choice of material.

"What fertilizers are used in your county?" The following table, which gives the proportions of farm-yard manures and other fertilizers, presents the average of the returns of each State, and doubtless with sufficient accuracy for the purposes of the investigation, of the true averages of all the counties of the several States. In examining the figures it must be remembered that they indicate percentages of whatever fertilizers may be actually employed, however small in quantity or unimportant in value, which are almost too insignificant for estimate in the States west of the Alleghanies:

States.	Farm-yard manure.	Other fertilizers.	States.	Farm-yard manure.	Other fertilizers.	States.	Farm-yard manure.	Other fertilizers.
	P. ct.	*P. ct.*		*P. ct.*	*P. ct.*		*P. ct.*	*P. ct.*
Maine	73	27	North Carolina	51	49	Ohio	85	15
New Hampshire	84	16	South Carolina	26	74	Michigan	73	27
Vermont	85	15	Georgia	33	67	Indiana	84	16
Massachusetts	75	25	Florida	45	55	Illinois	95	5
Rhode Island	78	22	Alabama	53	47	Wisconsin	90	10
Connecticut	81	19	Mississippi	60	40	Minnesota	98	2
New York	68	32	Louisiana	.....	.....	Iowa	100	.....
New Jersey	69	31	Texas	70	30	Missouri	95	5
Pennsylvania	76	24	Arkansas	65	35	Kansas	100	.....
Delaware	72	28	Tennessee	80	20	Nebraska	100	.....
Maryland	40	60	West Virginia	77	23	California	98	2
Virginia	59	41	Kentucky	97	3			

The manure of farm-animals is seen to be the main reliance for sustaining fertility. Commercial fertilizers—organic and mineral—are somewhat in use in New England, especially in Maine and Massachusetts, including quantities of fish-refuse and sea-weed. They are also used sparingly in the Middle States; but the cheaper minerals, lime and plaster, and still cheaper green-manuring, monopolize a large proportion of the percentages credited to "other fertilizers." The South Atlantic States from Maryland to Georgia, inclusive, use not only the largest proportion of manipulated fertilizers, but the largest quantity in comparison with other sections. The cost of such material amounts to millions in each of these States. Little fertilizing matter is applied to the soil from Alabama westward, with the single exception of such quantities of cotton-seed as are not required for seeding and for a few oil-mills. In the eastern portion of the Ohio Valley experiments are tried with commercial fertilizers by a few progressive farmers, and the use of clover as a fertilizer is considerably practiced there by immigrants from Maryland and Pennsylvania. And here we may stop. The remainder of the country has heretofore practiced the draining of farm-yard manures into creeks and rivers, or the removal of barns from their inconvenient accumulations; or, if they all have not literally adopted this practice, they have not indicated much faith in the necessity of manuring. And yet these returns show that the lands of Iowa and Minnesota, and even of Illinois, are made to bear an increase of 20 to 30 per cent. by a single experiment in green-manuring. Thoughtful western farmers are seriously pondering the economy and profit of prairie-land fertilization.

As to commercial fertilizers our correspondents generally appreciate their value for specific uses, acknowledge their utilty in supplying lacking material for plant-growth; accord to them a positive value in hastening growth and maturity, but persist in the opinion that there is fraud in the manipulation of some kinds, and that the genuine are held at too high a price. They know that for the regular uses of farm-fertilization they can obtain the needed elements at a cheaper rate.

Many examples are given of the renovation of worn and apparently worthless soils, and the increase of fertility in fresh but unpromising lands. Fields that have been cultivated exhaustively for twenty and even forty years have been restored to original productiveness, not by guanos and superphosphates, at $60 to $80 per ton, but by inexpensive local resources, the cheapest and most reliable of which is found in clovering. In one case in Butler County, Pennsylvania, a section of thin, gravelly land, on which it was thought no one could secure a decent living, came into the possession of German immigrants at nominal rates. They cleared off the brush, plowed, cultivated, turned under green crops; saved every fertilizing material available; never duplicated a crop in five or six years' rotation, and that tract is now a garden, and from worthlesness has advanced to the value of $100 per acre, and is yearly becoming more productive. These owners, in some cases, have raised and educated families, lived comfortably, ride in carriages, and have money at interest. In other instances in which the aid of clover has been invoked, swine-feeding in the clover fields has been made a valuable means of soil-improvement. In the South, a region which many northern writers on agriculture assume most erroneously to be unsuited to grass culture, and which southern farmers have strangely neglected as a meat-producing section for obvious reasons, a new era is dawning, and clover and orchard-grass are in many places found to be sources of immediate and heavy profit, and of greatly increased fertility.

In light lands of more torrid temperature the cow-pea performs quickly and inexpensively the work of amelioration assigned to red clover in argillaceous soils. It is a plant literally worth millions to the South; possibly as good an ammonia-gatherer as clover; perhaps equally as good for fattening swine, and grown with greater facility in poorer soils. This investigation presents prominently three suggestive points: First, the use of fertilizers is becoming more general and more discriminating; second, few, if any, soils in the country are so rich that they cannot be made more productive by judicious fertilization; third, farm-yard manures are the best for general use; green-manuring is the cheapest means of soil renovation, and commercial fertilizers are useful for quick results and for specific purposes.

FARM-YARD MANURE.—Except near large centers of population, where the fertility of the soil carried to market in cereal and vegetable products can easily be returned in purchased manures, the main reliance for soil-restoration in every system of prosperous agriculture, is the manure made on the farm. The certainty of its adaptation to the wants of the soil from which it has been extracted, the practicability of securing it, and that without paying out cash or incurring debt, and the gain in utilizing much that would otherwise be worthless, must ever give it precedence for general farming-purposes, over all other fertilizers. Among the many advantages resulting to the farmer from having manufacturing or mining industries in his own neighborhood, prominent is that of being able to market for ready cash, hay, straw, and other coarse products, and at the same time cheaply replace the fertility taken from the soil in their production. The accumulations of manures in manufacturing and commercial cities and in the mining districts of Pennsylvania are taken at high prices, often $8 to $10 per cord, not only by gardeners and tobacco-growers, but by farmers, and their judicious use is found to be remunerative to such a degree that he who buys the most is usually found the most prosperous.

COMMERCIAL FERTILIZERS.—A majority of our returns indicate a growing preference on the score of comparative results and relative cheapness of home-made manures, over the manipulated compounds known popularly as commercial fertilizers. In many sections the use of this class of fertilizers is becoming more and more limited to garden productions, in the cultivation of which, hastening growth and maturity is an important element, and to special crops upon which the profitable effects of commercial compounds of established reputation have been proved by trial for a series of years. Repeated experiments with commercial compounds, which have ultimately proved unprofitable, have created a prevalent antipathy to *new* experiments. On the other hand, returns generally indicate that the use of unmixed organic or mineral fertilizers is on the increase. Adulteration in these is more easily detected, and the effects on like soils are comparatively uniform and well established. In the Eastern, Middle, and older of the Northwestern States neither commercial fertilizers nor home-made composts are used, to the neglect of farm-yard manure, but only as additions, after that has been exhausted.

A majority of returns from New England, including all from New Hampshire, report that commercial fertilizers are deemed unprofitable. But in Oxford, Me., superphosphates are considered almost indispensable, especially on corn, and in Penobscot and Cumberland they are used to some extent with favorable results, particularly gypsum on grass in the spring; gypsum is also popular in Franklin, Vt., and phosphates in Caledonia, on buckwheat and turnips, but not for general farming. The

same is reported from Norfolk, Mass., except that those which "tend to drive special garden-crops, may pay." In New London County, Connecticut, guano is liked for garden-crops, and superphosphates deemed beneficial on most crops; in New Haven, a great variety is used, which "pay well if of good quality and properly applied;" in Hartford they are used largely in connection with stable-manure.

About one-half the returns from New York report the profitable use of gypsum, particularly on clover. In Seneca it is deemed by far the cheapest commercial fertilizer; in Onondaga, in dry seasons, it nearly doubles the crop of clover. Lime is used in a similar way, though not so extensively, with like results. Exclusive of these, correspondents express the opinion, based upon experiments, that commercial fertilizers are not profitable. There are a few exceptions. In Broome they are considered profitable to drill in with wheat; profitable in some localities of Suffolk, and Chautauqua predicts that they will be more used in the coming than in any previous season.

In New Jersey, lime excepted, no county reports them unqualifiedly profitable. In Burlington, while marl, guano, and phosphates are largely used in some crops, the main dependence is on manure either made on the farm or purchased in Philadelphia. Guano only is used in Camden, and "less and less each season;" in Gloucester they are only profitable for special crops.

In Pennsylvania, lime holds the foremost place among commercial fertilizers. It is considered one of the cheapest, most reliable, and effectual. It is extensively used with uniformly favorable results. It is most used on clover or to facilitate decomposition in green-manuring. In Bucks, plowing under clover with the liberal use of lime is the cheapest and quickest way to renovate poor soil. Lehigh reports that to keep up a luxuriant growth of clover and other grasses a field should be limed every five or six years. Lebanon, that "the only practice of soil-improvement is with lime and barn-yard manure, repeated about once in seven years; 50 to 100 bushels of lime per acre is put on land for corn, and manure on oats-stubble for wheat. This process has doubled production on all crops within the last twenty years." Gypsum is used, less extensively, in the same way, and with a single exception like results are reported. Butler County reports that it is now much less used than formerly, being "deemed only stimulating in its effects by which one crop is benefited at the expense of the next." Returns are almost unanimous against the general use of compounded commercial fertilizers. High prices, frauds, and uncertainty of effect compared with farm-yard manure are the principal objections. One says "it increased the crop for one year, but had the effect to make the land more sterile after that." Another, "Guano has become so adulterated that its use has been discontinued by many." "Farmers have generally come to the conclusion that barnyard manure pays best." These are illustrations of the general tone. The only marked exception is from Adams, which reports that the better kinds are used by many of the best farmers, and that "the rapidly-increasing demand by intelligent farmers is evidence of their utility." In Bucks they are used advantageously to supply deficiencies in barn-yard manure, since the farmers, after having been extensively humbugged, are now more careful in selecting. Hence it is reported that the farmers in that and the adjoining counties control a large manufactory for phosphates and bone-dust, now in operation in Philadelphia, worked on the co-operative plan.

In Delaware they are less used than formerly.

In Maryland the current of opinion runs in the opposite direction. In

each of the returns the use of commercial fertilizers is reported, and the proportions indicated are 56 per cent. against 40 per cent. of farm-yard manure. Queen Anne reports that they are used freely, principally superphosphates, in the wheat-crop, and that even when wheat is low they pay well, as they will double the succeeding crop; Charles, that 90 per cent. of all fertilizers are commercial, and are specially profitable on the after-crop of clover for improvement of land; Calvert, 60 per cent., mostly Peruvian guano and superphospates, and profitable for the tobacco-crop; Montgomery, also 60 per cent., and Caroline 50, and profitable in both; Harford, that they are the principal fertilizers used, by far the largest part being bone-dust, and deemed profitable at about $42 per ton; Carroll, that bone-fertilizers are profitable, but none others; Washington, that bone-fertilizers are profitable on all soils. On the other hand, in Worcester, though 67 per cent. of all fertilizers are commercial, they are deemed unprofitable—"in many instances the result has been injurious to the land and disastrous to its cultivator;" in Talbot, though the chief reliance is on them, they are "not always profitable;" in Prince George, about 10 per cent. of the fertilizers are commercial, chiefly used on tobacco, but now so adulterated as not to be profitable; and in Cecil the price is found too high to to admit of much profit.

Fifty-four returns from Virginia indicate that 40 to 50 per cent. of the fertilizers used are commercial. They are largely used on special crops, as tobacco, wheat, and garden-truck. Gypsum and lime, or shell-marl, are extensively used with special reference to the production of clover and grass-crops. The general tone of returns indicates a profitable use for these special purposes, (and especially crops for market on which profit largely depends on early maturity,) but not for general farming. The following extracts, among others, show the direction in which the views of advanced farmers are tending in respect to the use of different fertilizers:

Sussex: Our best farmers now use all their available means in the making of farm-yard manures and composts, and are realizing commensurate advantages from such efforts. It has become a fixed belief among our farmers that the commercial fertilizers give no really profitable return, and only embarrass with debts which all the crops made by using them barely liquidate. *Henrico:* Peruvian guano and superphosphates largely used, but bone-dust yields better results than any fertilizer except farm-yard manure. *Powhatan:* Profitable on tobacco, followed by wheat, if combined with farm-yard manure. *Lunenburgh:* Commercial fertilizers are mostly used, but are less profitable than farm-yard manure. *Loudoun:* Extensively used, but, gypsum excepted, the impression is gaining ground that they do not pay.

With respect to their advantageous use in grass-culture the report from Montgomery states: "Farmers have been very successful in setting grass on exhausted lands by drilling in fertilizers with wheat. Lime gives good results, and a clover-crop is increased 50 to 100 per cent. sowing plaster." In Westmoreland, though for the last few years they have yielded little if any direct profit, "still, considering the improved condition of the land and its increased adaptation to the cultivation of grasses, the use of them is regarded as judicious;" in Shenandoah, they are deemed profitable in securing good stands of grass; in Wythe, profitable from the certainty with which grass, sown with wheat, sets; in Chesterfield, gypsum is least expensive and most effective, especially on clover and peas; in Prince Edward, desirable on clover and the grapes. The tide-water regions find fish a great resource in fertilizing. In several counties the use of commercial fertilizers has been abandoned on account of frauds; in a large number they are reported unprofitable without qualification.

The remaining Atlantic and eastern Gulf States report a growing disposition to supersede the use of commercial fertilizers by home-made composts; but the former are still somewhat extensively used on wheat and cotton, and, in North Carolina, on tobacco. Several counties in this State report that the use is confined to tobacco; in a majority of the counties reported, they are either not deemed profitable, or only so to a limited extent under specified conditions. In Caswell, there is a general disposition to dispense with them; in Lenoir, less used than a few years ago; in Martin, not one-fourth as much used in 1874 as in 1873; in Chatham, less profitable than manure and home-made composts; in Wake, "easily handled and well adapted to a thriftless farming community, they are used by every planter who has the money or the credit to buy; but the more intelligent and successful planters are learning to depend on home-sources for ammonia, and only purchasing the phosphates." A few returns are unqualifiedly favorable. Randolph reports that on thin, worn-out land, 200 pounds of guano per acre frequently increases the yield of wheat four-fold; Cleveland, that they pay fully 50 per cent.; Duplin, that they are almost a necessity for the production of cotton, paying 50 to 100 per cent. on the investment; and Gaston, that the use of them is on the increase. Several returns specify the use of gypsum on clover with profit. In Clay, lime is found very beneficial; only one-third of the returns specify the proportion used, but, so far as indicated, it amounts to about 13 per cent. against 36 of home-made compost and 51 of farm-yard manure.

Returns from South Carolina make the amount of commercial fertilizers used equal to that of both farm-yard manure and home-made composts. A majority report that they are deemed profitable; Barnwell, that they yield 30 to 50 per cent. on cost; Williamsburgh, that, under favorable circumstances, they pay more than 100 per cent. But there are some important qualifications: in Richmond, they are thought profitable *if the farmer can pay cash down;* in Beaufort, home-made composts prove more profitable; in Fairfield, while the ammoniated superphosphates are deemed paying fertilizers, the same value in composts, with acid phosphates, is more remunerative; in Greenville, the yield of cotton, per acre, annually decreases, and the expense of fertilizers increases.

In Florida, returns indicate that the use is very limited and apparently decreasing. Owing to a want of knowledge in their proper use, and to impositions, they have grown into disfavor in Madison County; in Gadsden, with few exceptions, the use of them is abandoned; in Suwannee, they are deemed unprofitable. Per contra: Orange reports that they are profitable, and used more and more every year, Peruvian guano being the favorite; and in Putnam and Santa Rosa they are profitably used on garden-crops. Phosphates, bone-dust, salt, ashes, gypsum, guano, and fish-guano are specified.

Though returns from Georgia show that two-fifths of the fertilizers used are commercial, only about one-fourth report them positively profitable; another fourth, either of doubtful utility or less profitable than other fertilizers; and the remainder positively unprofitable. There appears to be a decided movement toward substituting for them home-made composts, and a growing appreciation of farm-yard manure.

Brooks: It is a question whether they have not done more harm than good; thousands of dollars are paid out annually, and when the season is not suited it is demonstrable that it would have been better if they had not been applied. *Stewart:* Largely used from 1869 to 1872, inclusive, but less now; certainly have helped to impoverish our people. *Upson:* Most are purchased on time, and when pay-day comes round, planters swear that the stuff did no good and is the last they will ever buy. But when planting-

time comes again they say, "Believe I will try it once more." *Harris:* Not valuable or profitable, except a few chemicals needed to make compost with manure and cotton-seed. *Baldwin:* Farm-yard manure more profitable. *Murray:* Farm-yard manure preferable by far. *Columbia:* Farmers have at length found out that they were "paying too dear for the whistle." *Decatur:* Not so many use them as formerly. *Cherokee:* Home-made composts have proved much more profitable. *Troup:* Farmers beginning to see the folly of using so much of fertilizers to the neglect of home-made manures. Will use next spring not more than one-third the previous quantity. *Henry:* Will be less used, as farmers are making two-thirds compost, or phosphate and farm-yard manure. *Gwinnett:* Farm-yard manure entered but little into fertilizers until last year; then it was composted with "chemicals." The composts at a cost of one-third of commercial guano were equally valuable. *Jefferson:* Farm-yard manure composted with cotton-seed more valuable.

The most prominent returns of favorable results are from De Kalb, where 1,500 tons are used, mostly for cotton, at an average cost of $60 per ton, which pay a very good profit; in Houston, where 2,000 tons are used; in McDuffie, giving 20 to 30 per cent. of profit; and in Carroll, very profitable when the land is well worked. West of Georgia commercial fertilizers are little used.

A large majority of returns from Alabama declare them unprofitable. Cotton-seed is largely composted with manure and other ingredients, and farm-yard manure constitutes about 53 per cent. of the whole. In Shelby, commercial fertilizers, when not used in connection with vegetable matter, are considered a positive injury; in Conecuh, used in 1867–'70, but very little since, proving less profitable each year; in Bullock, less used last year than for several years previous; in Pike, while some deem them profitable, many of the best farmers think otherwise; in Lowndes they have been mostly abandoned; but in Russell they are considered very profitable if pure; also in De Kalb, (with the same qualification,) "especially on cotton, increasing the yield 100 to 200 per cent.;" in Lauderdale, among them, only gypsum on clover and other grasses has proved profitable.

From Mississippi few returns with definite specifications have been received. The use of commercial fertilizers appears to be quite limited and not increasing, farm-yard manure and cotton-seed being the main reliance. In Rankin they have been found unprofitable and abandoned; in Clark, profitable, when the land is subsoiled and the fertilizer covered deep, but manure and cotton-seed are deemed better. Claiborne reports that they increase the yield one-third; and Pike, that they are profitable in the hands of skillful planters.

The returns from Louisiana which answer the inquiry report that they are not deemed profitable. In Claiborne they have been tried and abandoned. La Fourche, where bone-dust has been used, is the only parish reporting the present use of any commercial fertilizer. Cotton-seed takes the precedence, then manure and composts.

Among over fifty returns from Texas no one reports the use of any commercial fertilizer. The same is true of Arkansas, except that Drew reports that guano, superphosphates, &c., were tried on cotton six or seven years, and did not pay. In Tennessee, nearly half the returns specify the use of gypsum, largely in connection with clover, and, as in other States, the results are uniformly favorable. Lime is used less extensively, principally as an ingredient in composts. With these exceptions, the use of commercial fertilizers is very limited, and apparently declining. In Greene and Putnam they are less used than formerly; in Washington, only used by farmers who drill in wheat, and in that case are very profitable, as they hasten the maturity of the grain.

In West Virginia the use of commercial fertilizers is very limited. Not including lime and gypsum, which are used to some extent, two-

thirds of the returns report the use not profitable; others, a doubtful result; and only two a decidedly favorable one. Marion reports that 150 to 200 pounds of Peruvian guano on poor and exhausted land will increase a wheat crop about 16 bushels per acre; and Mineral, that they are much more used than formerly. The reason assigned is that, as farmers generally do not house their stock, and therefore have no farm-yard manure, by using commercial fertilizers they largely increase their productions.

In Kentucky and Ohio, lime, gypsum, and bone-dust are used to a considerable extent with beneficial results. A few other kinds have been tried on a small scale, but in Kentucky the returns are unanimous, and in Ohio, with but few exceptions, against the use of them. In Christian, Ky., gypsum is very profitably used on both clover and tobacco; in Ashland, Ohio, on clover and corn; in Adams, bone-dust and superphosphate of lime were tried last season with marked good results. In a field made up of clay land, flat and rolling, and marly banks, the owner drilled in with wheat a commercial fertilizer, omitting the latter in some rows. The result was, in place of 2 or 3 bushels per acre on the wet and 10 on the dry, clay land, and 15 on the marly banks without the fertilizer, an average of 20 bushels per acre on the whole with it, and a good set of grass in place of none. In Washington the practice of using bone-dust for wheat on old fields is increasing.

In Michigan commercial fertilizers appear to be little used, and for the most part deemed unprofitable, except gypsum, the profitable use of which on clover and other crops is noted in almost every return. Cass reports its extensive use, and the prevalent belief that, at the price paid, and at the rate of 50 to 100 pounds per acre sown on clover to pasture or for green-manuring, fertility can be given to soil as cheaply as with barn-yard manure, at no expense except that of hauling it half a mile. The following extract is from the return of Clinton:

> The theoretical rotation for crops is, first year, corn in sod; second, oats, with wheat in the fall; third, clover and timothy sown with gypsum and the wheat taken off; fourth, gypsum sown, and pastured; fifth, gypsum sown, and mowed. This system does not produce wheat enough to suit many, and they supplement it by plowing under clover for wheat, seeding the following spring, pasturing, but not closely, the next summer till July, then plowing up and sowing wheat again. In this case gypsum is sown every spring. This system has been followed on some fields for fifteen years, with constantly increasing yield.

In Indiana, also, gypsum is extensively and profitably used. Noble reports that it constitutes 60 per cent. of all fertilizers, and applied to clover-fields increases the crop about one-third; Elkhart, that it is applied much more extensively than farm-yard manure, the only other fertilizer used; Kosciusko, that on an old field covered with sorrel it was freely sown while the sorrel was green and immediately plowed under as fallow. In the fall it was seeded to wheat, which yielded 40 bushels per acre. Before the use of gypsum the same field had yielded only 10 to 15 bushels. A few returns note the use of lime and more of bone-dust, with good effects. Other commercial fertilizers are but little used, and, with few exceptions, reported unprofitable. In Floyd, bone-dust and superphosphates are profitably used, the former for permanent and the latter for immediate effects. Also, offal from the slaughter-houses is very profitable; screened coal-ashes in orchards, salt and lime in preparing ground for every purpose except for corn; and wood-ashes when properly applied.

In Illinois, out of sixty-four county returns, four specify the use of gypsum and three of lime, in small quantities; four composts, and one, Pulaski, "ashes and sawdust to a limited extent." All others return

farm-yard manure only, quite a number stating that that is little used. Fayette and Kankakee report that gypsum has been tried and not found profitable. Passing into Wisconsin, gypsum again becomes popular. More than half the returns report the use of it, and none specify unfavorable results. Lime is used to a considerable extent, but no other commercial fertilizer is reported.

In Minnesota, out of thirty-six returns, the exclusive use of farm-yard manure is reported in all, except salt in Crow-Wing, with good effect; gypsum, lime, and compost, in Olmstead; lime in Isanti, and ashes and lime in Steele. Out of fifty-three returns from Iowa, but a single county reports the use of any other fertilizer than farm-yard manure. In Delaware County, a small quantity of gypsum was used last year, for the first time, with profitable results. The case is not much different in Missouri. Grundy reports the use of some bone-dust with profit; Nodaway, that lime, gypsum, and ashes are highly valued by the best farmers; Callaway, that some guano is used on fine tobacco, as it is thought to yellow it and make it ripen sooner; Washington, that some lime has been tried and found profitable; and Cape Girardeau, that gypsum is applied to clover. These are the only returns out of over sixty which report any use of commercial fertilizers. In Kansas, Nebraska, California, and the Territories, their use is as yet unknown.

HOME-MADE COMPOSTS.—Returns generally concur in reporting an increasing use of composts mixed on the farm. They especially indicate, in the cotton States, a growing conviction, confirmed by the results of experiments, that it is far more safe and economical to buy commercial ingredients known to be suitable to combine with manure and other composting elements on the farm, than to pay the extravagant price demanded for commercial compounds, which often prove to be adulterated and comparatively worthless. In New England, barn-cellars are the rule with the best farmers, (but unfortunately this is not the larger class,) and muck, loam, or other material is hauled in to absorb the liquid manure, while the stock is at the barn. The same is true of the hog-pen. In the Eastern States, whenever wood-ashes are made they are utilized, leached or unleached, in supplementing farm-manure, sometimes in composts, but perhaps oftener in the hill or drill. Lime, with scrapings from the road-side, and whatever refuse is available, enter into composts. In the Northern Atlantic States, on the coast, manure on the farm is extensively supplemented by marine fertilizers, as muscle-mud, sea-weed, fish refuse, &c., all of which are very profitable. In the neighborhood of cities, fertilizing matter of all kinds, which accumulates in them, enters largely into composts. The return from Camden, N.J., for instance, reports that thousands of loads of street-sweepings from Philadelphia, mixed with stable-manure in the proportion of 2 to 1, are used as a highly valued fertilizer. In the Southern States mineral or other commercial ingredients enter more largely into composts with cotton-seed and farm manure. Edgecomb, N. C., reports a system of composting, which, though it involves a combination of elements not in accordance with received opinions, has produced the best results for more than twenty years. The ingredients are soil or subsoil, (often more valuable in composting than worn soil,) not too sandy, cotton-seed, or any material which will ferment, any animal manure, and shell-marl, lime, or ashes. The proportions are about 1 bushel of cotton-seed (or its equivalent in other vegetable manure) to 25 of earth, 5 of animal-manure, and from 40 to 60 of marl or lime; all to be thoroughly mixed. Our reporter has lands which he has cultivated in

this way for more than twenty years, and they are more productive now than at the beginning. The general conclusion in the county is, that the best results are secured from farm-manures by composting them. Fairfield, S. C., reports that dissolved bone, ground and made soluble with sulphuric acid, added to cotton-seed, makes a very cheap and popular fertilizer, which is coming into general use. The following extracts from returns in Georgia, while they indicate the change for the better in progress, afford hints which may be valuable to other sections :

Harris: Very many planters are making their own fertilizers with farm-yard manure, top-soil, cotton-seed, and phosphates. *McDuffie:* Compost made by mixing one ton of ground bone and different acids with one and a half tons of cotton-seed and one and a half tons of stable-manure, is far superior for corn or cotton to any of the commercial fertilizers, and does not cost over one-third as much per ton. *Bartow:* A compound of acid phosphate and cotton-seed has been used for the last two or three years, and the use is annually increasing. It costs about $20 per ton of 2,000 pounds, and is equal to the regular manipulated commercial manures sold at $55 to $60 per ton. *Wilkes:* Composting, by one of several formulas, as gypsum, acid, phosphates, &c., is increasing every year. *Camden:* The cheapest plan for making manures here is by yarding cattle at night in a pen well filled with alternate layers of marsh grass and marl muck—these materials being plenty. With proper system one cart-load per week of "long manure" to each animal can be made and well adapted to our sandy soil. *Troup:* Farmers are seeing the folly of using so much of commercial fertilizers to the neglect of home-made manure. *Jefferson:* Farmers are waking up to the importance of the compost-heap, and it is devoutly hoped that the time is not distant when it will supersede and crowd out the costly commercials which deplete the pockets of farmers in Georgia of millions every year.

Returns from Florida and Alabama show that these States are beginning, and only beginning, to follow the example of Georgia in home-made composts. In Mississippi and Louisiana cotton-seed is almost the only fertilizer used; even farm-yard manure is neglected; and in Texas and Arkansas both of these are extensively coupled together in the returns as the only fertilizers. In the States west of the Mississippi there is no composting worthy of mention. In Tennessee and West Virginia, and the States further north in the Mississippi and Ohio Valleys, the practice has as yet made but little progress.

GREEN-MANURING.—Returns show that the practice of plowing under clover as a green manure is gaining in all sections where clover is grown to any extent. That it proves one of the cheapest and most effectual means of improving soils, and at the same time one of the most valuable fertilizers for growing crops, and especially for wheat and corn, is made evident by very general returns, in which testimony, as will be seen below, is largely fortified by definite facts, as ascertained by experiments continued for a series of years. A very few report that this process of manuring is not practiced for the reason that some other is considered more profitable; but only two report that it is positively injurious. Juniata, Pa., reports that it is "considered worse than useless," and Duplin, N. C., as follows:

Our farmers are averse to green-manuring with any crops, believing it a positive injury rather than a benefit to the land. A few years since the Bear Marsh Agricultural Club instituted a series of experiments with the cow-pea as a manurial crop, and in every instance, where the peas were plowed under green, the land failed to produce as good a crop as when the peas were allowed to mature and fed off on the land. In 1868, a gentleman from Pennsylvania purchased a farm in this vicinity, and in September turned under the growth of weeds &c. green, on part of a field of low ground, and to this day the portion so treated has never produced so good a crop as the remainder of the field.

Returns indicate that the first crop is turned under less frequently than the second, and that less frequently than stubble. But throughout the more northern States, in which hay is the most valuable production,

and fields are usually continued in grass so long as they yield a paying crop, the all but universal custom in seeding down land is to sow clover and timothy together. The first crop will be clover almost exclusively; after that the timothy gradually gains on it, and usually by the third or fourth year wholly supersedes it; and, therefore, when the field is plowed it is timothy rather than clover stubble which turns under. Owing to the value of clover for hay in New England and some of the Northwestern States, buckwheat is not unfrequently used as a substitute in green-manuring. In the South Atlantic and Gulf States, where hitherto but little clover has been grown, the "cow-pea" is used quite extensively, and the reported results are, almost without exception, very satisfactory.

Penobscot, Me., Sullivan, N. H., Berkshire, Mass., Washington, R. I., and Hartford and New Haven, Ct., report the full crop turned under, to a limited extent, with good results. In the latter county it "serves as a good basis for a tobacco-crop," but in Windham it is thought more valuable for hay. In New York the practice is more general. In Suffolk some farmers turn under the full crop with benefit; but it is generally thought that the crop of clover-hay fed to animals, with the consequent profit on them and the dropping returned to the soil, is more profitable. In Albany, though better crops can be obtained after clover than after timothy, yet, as the latter brings one-third more than clover, farmers "will crop with it, since they must have the crop that brings the most money, in order to meet current expenses." In Queens, some permit clover to grow till the early part of May and then plow under for corn, with improvement to the land; but sedge-hay from the salt-marshes is frequently plowed under with superior results. Our correspondent says: "I have raised 100 bushels of shelled corn to the acre, and our agricultural societies have given premiums to crops of 120 bushels per acre from land manured by sedge-hay raked into the furrows." In Columbia, stubble turned under "improves the soil to a large extent." In Niagara, both the full crop and the stubble turned under for wheat give satisfactory results. In Washington, though only practiced to a limited extent, it is deemed the cheapest fertilizer known, "used in any manner convenient for the time." In Genesee generally the whole crop is plowed under the latter part of June, and considered the best way of improving soil and keeping it fertile. In Ontario, plowing under the full crop has been discontinued, and the practice is now confined to stubble. Among other counties reporting the practice are the following:

Yates: The whole of the first crop turned under in full bloom, and the land left fallow until seeding-time for wheat; the second crop, and most frequently only the stubble, turned under just in time for wheat. The first mode the best. *Seneca:* Extensively; the full crop not turned under as much as formerly. The first year the first crop is cut for hay, and the second for hay or seed, according as it fills; the second year the first is cut, and the second for seed, if it fills well, and the stubble turned under for wheat. If the second crop does not fill, the whole is plowed under. *Greene:* Usually plow under the first crop in June; replow the 1st of August, and about the 1st of September sow wheat or rye. A good crop of clover turned under is better than twenty loads of barn-yard manure. *Onondaga:* Not extensively; my neighbor sowed 10 acres to clover; the second year plowed it under in August, and sowed to wheat the 1st of September. Though the land was poor the yield of wheat was 25 to 28 bushels per acre. But present pay, or all we can get thi year, seems to govern; so most of the farmers cut the second crop of the small variety for seed; if the large variety, they feed till the 20th of June, then turn off, and save for seed. Realize 2 to 4 bushels of seed per acre. *Schenectady:* The common method is to sow 1 peck of clover-seed and 1½ bushels of plaster per acre; next season pasture or cut the crop; the latter is considered best. Two or three crops are thus taken off, then the stubble turned under; the next crop corn, then oats or barley, with clover as before. Where this rotation is practiced I have never known it fail to improve any soil where clover will grow.

In New Jersey, green-manuring with clover is practiced to a limited extent. In Gloucester the clover is mowed and pastured, and the stubble plowed under the second year; in Warren, the stubble only for corn; in Burlington, plowing under the crop is little practiced, because pasturing with hogs, cattle, and sheep, and plowing under the sod is preferred; in Hudson larger crops of corn and potatoes result from turning under red clover.

In Pennsylvania, green-manuring with clover, in connection with lime or gypsum, enters somewhat extensively into a system of rotation in which the culture of wheat, corn, and hay predominates. In Bedford the practice is growing in favor, and "universally deemed profitable;" in Lancaster, considered by the best farmers a progressive step in agriculture; in Tioga, the second crop for wheat, next to farm-yard manure, the best and cheapest fertilizer, and "should be at least two years old before turning under, as the roots are more valuable than the stalks;" in Fulton, it is less practiced than formerly, because farmers keep so much stock, and lime their land freely; in Montgomery, top-dressing with manure, lime, and compost is considered far better; in Dauphin, also, returning in manure all the hay grown on the farm, and turning under the stubble is thought to result in a greater improvement of the soil than turning under any green crop; in Montour, turning under clover in either mode is deemed equal to a coat of manure.

The extracts which follow will illustrate the varied practice and afford convincing evidence of satisfactory results.

Cumberland: The second growth plowed under in July for winter-wheat brings a fine crop. A good bed of grass plowed under in the fall for corn produces as large a crop as if the land was coated with barn-yard manure. *Clinton:* All who have tried it concur in saying that it benefits the land as much as, if not more than, a full dressing of barn-yard manure. *Bucks:* The custom is to sow clover on oats, let it lie one year, pasture or mow the following season, and plow for wheat after harvest. I have practiced it for fifteen years with marked advantage to the soil. *Adams:* To a limited extent by the better class of farmers who can spare in this way a good crop of grass. The second or third crop is usually turned under. *Washington:* In connection with lime produces excellent crops. This method followed by those who practice rotation, and it is claimed that by it land may be constantly improved. *Westmoreland:* Where grazing is more of an object than the cultivation of the cereals, clover-fields are pastured in the fore part of the season, and the ripened after-growth cut for seed or plowed under for a crop of wheat. In the latter way a very good stand of clover is obtained the next season, while the wheat and soil are both benefited. For many years I have pursued this course with decided success. *Fayette:* To some extent; second crop in high favor with our best farmers. Its beneficial effects not only in affording plant-food, but in securing a better mechanical condition of the soil. *Wyoming:* I came in possession of a field of five acres which had been cropped till nothing but mallows and pennyroyal grew, and it had been left an open common. I planted it in corn, using plaster for a fertilizer. The next spring sowed oats and one peck of clover-seed. The third spring sowed plaster on the clover. The last of August plowed under all that grew; sowed to wheat, and the following spring clover-seed on that. In the summer pastured the clover a very little, but in August plowed under the clover, sowed to wheat with clover-seed in the spring. The fifth summer mowed the first crop of clover, and plowed under again in August for another crop of wheat with clover-seed. In each instance plaster was sown on the crop after sowing the clover-seed in spring. The result of this fertilizing with clover and plaster, and cropping with corn, oats, and wheat, was, the land was made rich enough to produce any crop. The last of the three successive crops of wheat was attacked by weevils, which commenced on the outside and left scarcely any wheat within 16 or 20 feet of the fence; but the five acres yielded 102 bushels—$20\frac{2}{5}$ bushels per acre. *Lancaster:* I know of a tract of land that has been cultivated for twenty-six years and good crops raised by the application of clover turned under alone. The hay, corn-fodder, and straw have always been sold, and yet the land improved. *Clearfield:* The general practice, mow the first crop, let the second crop grow until after harvest, and then plow under whatever may be on the ground; harrow well, give a top-dressing, then put the wheat in with a drill. The wheat does well and the soil improves under this mode of treatment. My brother raised 34 bushels of Fultz wheat to the acre last year. *Luzerne:* The chief reliance of our farmers is barn-yard manure and clover, about half

and half. When clover is plowed under, it is usually after the first bloom has been fed off and a second has grown up and somewhat ripened. This usually gives the best result, as by this process the roots become larger, there is more growth of top, and often seed enough to renew the crop. *Erie:* The most successful rotation is, mow clover twice, and the next spring put on a heavy coat of stable-manure, plow under, and plant to corn; the next season, to oats or barley, and wheat the same fall, with clover the next spring.

From Delaware, Newcastle reports the practice by the best farmers, and with most gratifying results, especially on clay lands.

In Maryland the practice is extensive; that and commercial fertilizers constituting about three-fifths of all used. The following extracts, from very full returns, afford specimens of prevailing processes and results:

Cecil: After mowing and pasturing the sod is plowed under for corn, by which farms are very much improved; mine yields double, perhaps threefold, what it did twenty years ago. *Dorchester:* Generally the first crop is cut for hay, then pasture till time for stock to come to the barn; then plow under for corn; the best fertilizer we can get for that, and tells on the wheat-crop which comes after. *Charles:* Generally practiced; the first crop allowed to fall to the ground, as a cover, intead of turning it under, because regarded as preferable for its fertilizing effects. Have reclaimed an old worn-out field by using Turner's Excelsior, at the rate of 200 pounds per acre; a good stand of wheat and clover, the latter allowed to fall on the land, not grazed. The following year the increase of corn was threefold, the season not being very favorable. Clover is wholly regarded as the cheapest and most permanent fertilizer. *Carroll:* The full crop turned under for wheat considered by some as equal to a good coat of barn-yard manure. *Queen Anne:* On nine-tenths of our arable land red clover is almost invariably sown to succeed the wheat and oats crops. This clover is generally pastured the second summer, and, if not left over, is fallowed in August for wheat. We consider a good clover lay the best fertilizer for a wheat-crop. If the ground is well prepared, and a moderate amount of superphosphate drilled in with the wheat, to give an early start, a good crop, say 20 to 25 bushels per acre, is the almost certain result. Red clover is to us what the turnip-crop is to England. *Calvert:* The full crop seldom turned under; the usual practice to turn stock on the second year, when the clover is in full bloom; the stock trample most of it under foot, and it is plowed under the following spring. This system considered quite improving to the soil. Some years ago I had an odd corner, of five acres, thoroughly exhausted and dead-poor. I plowed the land, harrowed in commercial fertilizers at the rate of 400 pounds per acre, and planted in corn. The season was favorable, and the crop 40 bushels per acre, which paid for fertilizers and left a handsome profit. I followed the corn with wheat, drilling in an additional 200 pounds of phosphate per acre. The wheat-crop did not pay expenses, but the succeeding crop of clover was unusually heavy. This was flushed under the second summer, and wheat drilled in, with 200 pounds of phosphate. The result was a crop of 22 bushels per acre; worth more than the land would have sold for a few years before. I have since kept up the use of clover and phosphates upon that piece, without applying farm-yard manure or lime, and it is now as productive as any land I have.

From Virginia, forty-four out of fifty-four county returns note the practice, either with clover or pease, but in a large majority of instances the extent is very limited. These returns bear concurrent testimony to profitable results to both soil and succeeding crop. In Henrico, the green crop is not turned under, because the hay brings so high a price in the city, and farmers think they cannot afford to wait for the results of plowing under.

Middlesex: Practiced by all farmers whose land will bring clover. The full crop turned in soon as the heads begin to be brown, so as to insure a second seeding for the spring following. Wheat is sown, and when a good crop of clover has been turned in a heavy growth of wheat is considered sure. The soil in a high state of improvement, compared with other lands; good crops and thrifty farmers are the results of this practice. *Dinwiddie:* Generally the second crop plowed under in July or August. If a good crop of clover is turned under, a good crop of wheat follows, and the soil is permanently improved. *Matthews:* Field-pease more highly prized. These we sow in our corn and fallow either green or dry, and generally with good success. Peculiarly suited to our soil and climate, and of rapid growth, it is more valuable to use as a fertilizer than any crop we can raise. *James City:* The pea-fallow considered the best. *Craig:* To a large extent and with good results; sow plaster on first crop; cut for hay

or pasture off; plow under second crop and sow wheat, which never fails to yield a good crop. This is the cheapest way to improve our lands. *Chesterfield:* Extensively practiced; the second crop, when the seed has matured, is turned under. The better plan is to seed the land with oats in March, and then apply the clover-seed. If the land is rich enough, this invariably secures a good start. The following spring a good crop of clover is secured, and the second crop turned under. This continued a few years, with ten to twenty bushels of lime per acre, will result in increasing the wheat-crop at least 50 per cent. *Clarke:* The second crop; the land highly improved by clover and gypsum without any other fertilizer. *Prince Edward:* The second crop turned under for wheat generally results in a fair crop of wheat and always in improvement of the soil. *Mecklenburgh:* The second crop turned under, and considered the very best fertilizer for wheat.

In the remaining Atlantic and the Gulf States the practice is very limited, one reason being that clover is little grown. Twenty-one of the returns from North Carolina note the practice to a limited extent, five of them being with the cow-pea. In Burke, peas sowed in time to reach full growth by the last of August, and turned under with deep plowing, for wheat, are thought equal to clover, and much cheaper. "Peas seldom fail to yield a good growth of vine, even on poor land." Beaufort reports that pea-vines turned under after the peas have matured increase the succeeding cotton-crop 15 to 20 per cent.; in Pasquotank, clover turned under, though rarely done, is followed by wonderful results; our correspondent, in 1870, "had sixty acres in clover, turned the crop under in October, planted in corn the next season, and the usual crop was nearly doubled;" also, about ten bushels per acre of peas sown immediately after a crop of wheat or oats was taken off, and turned under when they commence maturing, nearly doubled the following crop, and were cheaper than the use of clover. In Wake, owing to very beneficial results, the practice of green-manuring with peas is increasing.

So far as reported from South Carolina and Florida the practice is confined to the cow-pea; in the other Gulf States, and Arkansas, the very limited practice is divided between the pea and clover. In Burton, Ga., clover turned under for wheat increases the yield, "at the lowest, one-third, and the land is improved 15 per cent. for subsequent crops. In Hall, farmers have been cultivating clover for ten years with very profitable results." They generally get two crops per annum, and the third year turn under the stubble, which improves the land greatly. In Taylor, crab-grass turned under in September "adds 20 per cent. to the next crop of corn or cotton." In Lauderdale, Ala., the second crop is sometimes turned under "with fine effect, almost doubling the yield in corn or wheat."

The practice becomes more prevalent again in Tennessee and West Virginia, being noted in more than half the returns. Clover predominates, but the pea is employed to some extent in the former, and in the latter State buckwheat and oats are used. Raleigh reports that some estimate that green oats turned under pay better than clover. In Tennessee, clover turned under has made lands "more productive now than they were thirty years ago" in Hancock; is considered the best fertilizer in Loudon; makes the best and surest crop of wheat in Sullivan; adds very much to the production of cotton, corn, and tobacco in Dyer; is the cheapest way to manure in Smith; increases the crop one-fourth in Williamson; improves the land every year in Putnam, and "in connection with lime proves one of the best fertilizers ever used."

A large majority of returns from Kentucky report the practice, in some form, to a greater or less extent, with uniformly favorable results. "Always benefits the succeeding crop;" "increases the crop of corn or wheat one-third;" "considered the great fertilizer of the country by our best farmers;" "red clover our best restorer of lands exhausted by

corn and other cereals;" "has a fine effect on the land, and increases the crop of wheat one-third"—these are specimens of reported results. The following more extended extracts are selected from a mass of similar ones:

Hart: For wheat it is thought best to turn under the full crop when in bloom; for corn, to turn under the second when in bloom, subsoiling at the same time; preferable to other modes of soil-improvement because by far the cheapest. *Hardin:* The second crop turned under, or the first grazed about a month, then left to grow till plowed under, in September. This always produces a fine crop of wheat, and when corn follows the next season the benefit is plainly seen. *Russell:* Usually pastured very close and turned under in winter or spring, when the land receives no benefit except from the roots. Lands run two years in clover, pastured close, and turned in winter or early spring, will produce at least 25 per cent. more corn than other lands of the same quality not clovered. *Mason:* About 1827 or 1830, red clover was introduced, and from that time has been our chief and almost our only fertilizer, entering into the crop-rotation on every farm. And, to-day, I have no hesitation in saying that fields which tired and were thought exhausted forty years ago, will yield a heavier crop of grain, hemp, or tobacco than when just cleared—never having had one dollar, save for clover or other grass seed, expended on them, or a single load of manure applied save the droppings of stock when fed or pastured thereon. Clover when sown alone is relied on as pasture only for hogs, and plowed under generally the fall or winter after the second year, for any and every crop, always with marked improvement.

Out of fifty-four returns from Ohio, fifty-one counties report the practice, though in a large majority the extent is quite limited. As in Kentucky, these reports concur in ascribing to the practice large advantage to both crop and soil. A few extracts selected from many, as illustrations, follow:

Fulton: We estimate one-fourth more wheat from the green-manuring. *Vinton:* The far better way to let the clover mature and the seed ripen before turning under. *Ashland:* Growing in favor every year. When the clover is nearly fit to cut, to plaster it before turning under, and then summer-fallow for wheat, is the most effectual and profitable method of manuring land. *Loraine:* Always improves the soil and often adds several bushels per acre to the crop of grain. The clover-roots the principal benefit to the soil. *Highland:* Judiciously practiced, it reclaims our worst worn-out lands. *Muskingum:* No other practice here proves so effectual for preserving the fertility of the soil. *Monroe:* By the practice the soil is improved at least 50 per cent. above the result of the common practice of cropping with barn-yard manure only. *Butler:* In connection with manure it is regarded as the great and cheap renovator of the soil. *Washington:* I have a field of 16 acres on the Muskingum River, of what we call bottom or plain land. It had become so reduced by continual cropping that it would produce only about 12 bushels of wheat or 30 bushels of corn per acre. In the winter of 1866 I sowed it to clover and secured a fine set. I let it remain without mowing or pasturing of any account, and it gave a fine growth in the summers of 1866 and 1867. In the fall of 1867 I turned it under, taking two boys to keep the furrows clear, and sowed it to Mediterranean wheat. In 1868 I harvested from the field 512 bushels of good sound wheat, (32 bushels per acre.) The next year it yielded 75 bushels of corn per acre. The seasons have not been so favorable since, but the land is now in better condition than in 1865.

Returns from Michigan, Indiana, and Illinois indicate that the practice has made considerable progress, though less extensive than in Ohio. In Michigan it is found a good fertilizer for fruit-growing. Ottawa reports that if the land is to be set in small fruits the next season, a full crop plowed under and summer-fallowed brings it into fine condition, and is much cheaper than commercial fertilizers. In Lenawee it is practiced by all farmers, and the full crop gives the most satisfactory results; in Van Buren, on the oldest and best cultivated farms, with the "invariable result of great improvement;" in Gratiot, is becoming more popular each year; in Calhoun, has increased the quantity and quality of wheat, so as to make the average yield at best 20 per cent. more than ten years ago. The only adverse return is from Oakland, which reports that it is now less practiced than formerly, since it is deemed "more profitable to let cattle and sheep eat the clover and plow under the

manure." The return from Cass says: "Our lighter sandy barrens, which, before the use of clover and plaster, very poorly paid for cultivation, have been raised to nearly first-class for profitable culture. The average of our grass-crops is fully 50 per cent. better than twenty years ago, and still increasing."

In Indiana the practice appears to be growing in appreciation in connection with both wheat and corn culture. In a majority of cases the stubble only is turned under. In Fulton, clover is regarded as "the great, indispensable fertilizer;" in Clinton, as "the economical mode of restoring lands;" in Madison, the full crop "improves the soil 40 per cent.;" in Marshall, the second crop for wheat increases the yield five to ten bushels per acre; in Switzerland, an experiment with corn, sown thickly, and turned under when knee-high, doubled the yield of wheat. "The yield was so surprising that the practice of green-manuring is likely to prevail to a much greater extent." In Posey, the clover, independently of its fertilizing effects, "pays a handsome profit."

From Illinois the only reported exception to uniformly favorable results is a partial one from Jersey: "Leaves the soil in good condition for corn, but for wheat, makes the straw weak, and the crop falls." Macon reports that the young roots supply the cut-worms with what they need, and save the corn. In Vermillion, the second crop ploughed under, after being partially fed off, increases the yields 30 to 50 per cent. In Hancock, the practice is on the increase, the stubble increasing the yield 33⅓, and the full crop 50 per cent. In Shelby, the second crop turned under produces the best and surest crop of wheat, and the seed comes up thick, making a first-class clover-field again. In De Kalb, the second growth turned under is "as beneficial as a generous coat of compost."

The practice has taken root in Wisconsin, but as yet has made comparatively little progress. Green Lake reports as follows: "The best results when clover is followed by corn well manured; then two or three crops of wheat with clover; some use a light seeding of clover and plaster with each crop of wheat, allowing the sheep to pick off the clover in the fall. Land treated in this way invariably improves." In Pierce, the first crop turned under results in great benefit to two or three succeeding crops of wheat.

So far as returns indicate, the practice has but little more than been introduced in the newer States of Minnesota and Iowa, though Jackson, in the latter, reports that the full crop turned under increases the yield of corn about 50 per cent. In Kansas, Nebraska, and California, where stable-manure is as yet generally regarded as a troublesome superfluity, the practice is scarcely known. In Missouri, out of over sixty returns, about one-third report the practice to some extent. In Chariton, the second crop turned under makes old, worn-out fields produce almost equal to new lands. In Boone, for wheat, it perpetuates the clover without the cost of seed or the labor of sowing again. In Stone, land on which the stubble is turned under produces a greater yield and better quality of wheat than any other. In Dent, "as the result of experience, consider it superior to barn yard manure;" in Grundy, also, "the result is rather ahead of barn-yard manure;" in Cape Girardeau, it is the most popular method of improving old fields; in Scott, the best fertilizer yet tried. The following extracts are specially suggestive:

Platte: Our practice in soil improvement is this: Sow tired land in wheat or rye in the fall; sow clover-seed on the same the following spring; let it remain in clover three or four years; then (turning under the second crop) put in wheat or corn. The yield of either will be almost double the amount that would be produced without

this process. *Callaway:* The most common mode is to graze the clover down after it blooms, or cut for hay two or three years, then plow under in August and sow in wheat. The best plan to enrich the land is to plow all under after the seed ripens and let it come up again in the spring. I know that this will enrich land very fast. *Howard:* In June, clover is cut for hay, or hogs turned on it, and so treated for several seasons. Then the aftermath is turned under in autumn, and a good crop of whatever is put in is sure to follow. *Lincoln:* The almost universal practice is to sow clover on winter-wheat in the spring; after cutting the wheat the stubble is pastured by hogs, cattle, and horses. The next spring no stock turned on before the clover is in bloom; then what is needed for home-consumption is cut, after which the hogs, cattle, and horses are again turned on. The third year the same process is repeated up to the 1st of August, when the ground is plowed and left to mellow till about the 20th of September. It is then planted in wheat, the drill being almost universally used. This practice insures a good crop of wheat and improves the soil. *Johnson:* The usual practice is to pasture with hogs, then turn under what they leave. One farmer, with some 15 acres of red clover and about 200 hogs, says: "That clover-field, for feed alone, is worth double the amount of land in corn, is good feed while there is no corn, and when I turn it under I get nearly or quite one-third more corn the first season than I should without it."

WINTERING FARM-ANIMALS.

The care of domestic animals involves considerations of increasing importance and complexity as civilized settlements advance over our continent, and as reliance upon the spontaneous products of the soil becomes more precarious. The necessity of providing in summer for the unproductive season of winter enforces a practical study, not only of the methods of increased production, but also of economical feeding. The inquiries of our March circular elicited a vast amount of specific information showing the practical treatment of these problems by American farmers. The field of inquiry being so extensive, embracing such a variety of climate, soil, and production, it was not at all surprising that wide differences in ideas and methods should be found in different regions. In every part of our country, except the extreme South and some portions of the Pacific coast, a portion of the year fails to yield fresh supplies of green food for farm-animals, necessitating the storage of dry food to tide over the winter. In a multitude of cases this obligation is imperfectly felt, and in many others entirely ignored. In some parts of the country farmers manifest a culpable inhumanity toward the brute creation, which is also a stupid disregard of their own interests, in failing to supply shelter and food for their farm-animals. The opposite policy, however, finds frequent illustration in the course of intelligent farmers in different States. These have discovered that true economy in live-stock production embraces a generous treatment of animals, and that in this case, as in all others, true interest is associated with humanity and duty.

In interpreting the general results of our March inquiries, attention will first be directed to the feeding-material provided for the support of farm-animals during the inclement season. The most natural food of cattle and sheep is grass, green in summer and cured into hay for winter. Horses, milch-cows, and swine are generally provided with a more or less liberal allowance of grain, and in some cases roots to a very limited extent. The great staple of winter-provision, however, is hay, which, in different parts of the country, exhibits a very great variety, both in its material and mode of curing.

CONSTITUENT PROPORTIONS OF THE HAY-CROP.—In New England the cultivated grasses proper cover from two-thirds to three-fourths of the hay-fields. Of these, timothy (*Phleum pratense*) is the prevail

ing element. This grass is also called herd's-grass in New England and New York. Red-top (*Agrostis vulgaris*) and occasionally orchard-grass (*Dactylis glomerata*) are cultivated by farmers for hay; not often as separate crops, but mingled with timothy. Blue-joint (*Calamagrostis canadensis*) is casually mentioned as growing in some meadows in Maine. Of fodder-plants, besides grasses, red clover, (*Trifolium pratense*,) white clover, (*T. repens*,) and alsike clover (*T. hybridum*) receive some attention, but are seldom found growing alone. In Maine and Vermont, clover constitutes about one-sixth; and in New Hampshire, probably one-fourth of the crop; in Massachusetts, Rhode Island, and Connecticut, it receives less attention. Wild grasses from salt or fresh meadows furnish about one-fourth of the hay-crop.

The Middle States manifest a preference for clover-crops, which cover nearly a third of the hay-fields. The largest proportion of hay from wild grasses is made in Pennsylvania, amounting to about 20 per cent. of the whole; in New Jersey it constitutes less than one-eighth of the crop, and in New York about one-sixth. Of the cultivated grasses, timothy is the chief reliance, though mingled with orchard-grass, blue-grass, (*Poa pratensis*,) Hungarian-grass, (*Panicum Germanicum*,) and red-top. Red-top, in Pennsylvania and in regions to the south and west, is frequently called herd's-grass.

Of the South Atlantic States, our returns indicate that probably the larger portion of the hay-crop of Maryland is made from clover, while a smaller proportion is from wild or natural grasses than in the New England or Middle States. In Virginia, timothy and clover are in about equal use, while wild grasses come in for a much larger share of the hay-crop than in Maryland. Of cultivated grasses proper in these two States, timothy is the staple, with an occasional mixture of orchard-grass and red-top. Passing down the coast, our correspondents in the Carolinas and Georgia made very few efforts to classify the grasses used for hay-production. Experimental culture with grass and clover seeds from the Department has been successful in the hands of some progressive farmers, but the idea of raising grass for hay to feed stock during the short southern winter has enforced itself upon but few minds in that section. Crab-grass, a term applied to different species in different parts of the South, is often cured into hay. Pea-vines have also, of later years, been dried for winter-use. The same remarks apply also to the Gulf States, though in some localities the experimental culture of German millet, perennial rye-grass, (*Lolium perenne*,) alfalfa, or lucerne, (*Medicago sativa*,) Kentucky blue-grass, &c., has been attempted with variant success. Several southern native grasses have occasionally been subjected to partial curing. Careful experiments are needed to show how far these grasses are available for winter stock food.

In the inland Southern States grass-culture reappears. Arkansas and Tennessee show a large proportion of clover, while the wild grasses are less used for hay-production than farther South. Timothy, red-top, millet, Italian rye-grass, (*Lolium Italicum*,) Hungarian-grass, orchard-grass, blue-grass, and other species and varieties approximating those of the northern States, are noted in many counties. This approximation to northern grasses is still more apparent in West Virginia and Kentucky. The last-named State is the genial home, *par excellence*, of the famed blue-grass (*Poa pratensis*.) In the two States last named the proportion of clover ranges from a fourth to a third of the entire hay-crop.

North of the Ohio River the cultivated natural grasses yield more than half the hay-crops of Ohio, Indiana, and Illinois, while the proportion of

wild grasses increases in Michigan and Wisconsin; clover occupies from a fourth to a third of the hay-fields, either separately or mingled with timothy, which is here, as in the Eastern States, the special favorite among the cultivated grasses. Blue-grass, red-top, Hungarian-grass, millet, orchard-grass, blue-joint, &c., claim attention in many localities.

West of the Mississippi River, Missouri has learned to discard the wild grass, as a hay-crop, to an extent unknown in other States of this region. In Iowa seven-tenths, in Minnesota eight-tenths, and in Kansas and Nebraska over nine-tenths of the hay-crops, are made from indigenous grasses.

On the Pacific coast the alfalfa, capable of resisting severe droughts, promises a special adaptation to peculiar climatic conditions. Large amounts of forage are also made from volunteer crops of grain—oats, wheat, and barley—which are mowed and cured in the same manner as timothy and clover in the Eastern States. No culture of white or red clover of any extent is found either in California or in Oregon. In the latter State timothy is found a profitable crop in many sections. Wild hay is also used in these States as well as in the newly-settled Territories, whose capacities for grass-culture and hay-production are not yet tested by experiment. Among the few attempts at grass-culture on these new soils, timothy enjoys about the same pre-eminence as in the older States. Occasionally alfalfa and red-top are spoken of; red or white clover very seldom.

Duration of the feeding-period.—The length of time in which the farmer expects to keep his animals upon dry feed of course varies with the latitude, but this general variation is also affected by local circumstances. In New England the average length of the feeding-period is about six months, commencing between the 1st and the 15th of November. Partial feeding lasts from one and a half to two months longer. Contrary to expectation, our returns show a larger average feeding-period in several of the southerly counties than in those farther north.

In the Middle States the average period of full feeding ranges from four and one-third months in Delaware to five and one-fifth in New York and New Jersey, Pennsylvania averaging about five months. In these States partial feeding lasts from one and a half to two months in addition. Maryland gives full feed about a fortnight longer than Delaware; Virginia about four months; North and South Carolina about three and one-half months; Georgia averages a little longer period. In these South Atlantic States partial feeding lasts over two months. Of the Gulf States, Florida and Louisiana scarcely recognize a winter-feeding-period. In Alabama, Mississippi, and Texas farm-animals (that are fed at all, for most are left to the range or cane-brake) are fed from three to three and a half months in full, with partial feeding for two to two and one-half months longer.

In the inland Southern States the average full feeding is about three and one-third months in Arkansas and four and one-third months in Tennessee and West Virginia, with about two months' partial feeding. Kentucky averages a somewhat longer period both for full and for partial feeding.

Ohio, Indiana, and Illinois being very nearly within the same climatic parallels, and with a small difference of elevation above sea-level, average nearly the same, about four and a half months' full feeding and a little over two months of partial feeding. The northern counties of Illinois, however, somewhat enlarge the average for that State. Michigan, Wisconsin, and Minnesota range from five and a quarter to five and

a half months' full feed, with a little less than two months of partial feeding. Iowa, with its more southern latitude, averages but little less than Minnesota, while Nebraska, though higher up the declivity of the Rocky Mountains than Iowa, reports a shorter average full-feeding period, only five months, with about two and a half months' partial feeding. Missouri and Kansas average about four and a half months' full feeding and two and a third partial feeding. On the Pacific coast it is difficult to average the statements of our correspondents on account of different usages in different localities. In most cases, wintering stock, in the sense of that term in the Eastern States, is unknown. Even in Oregon, a mild winter or rather rainy season supplies farm-animals with a full proportion of nutritious grasses, thus relieving the farmer of one of his heaviest cares. Of the Territories, only one county in Colorado reports stall-feeding, and that not over a month. In Utah it ranges from three to five months; in Washington very little, if any; in Dakota from two to five months. No particular feeding-period is noted in any of the other Territories.

KIND OF FEEDING-MATERIAL.—The staple of winter-feeding throughout the country is hay, either timothy or clover; but the demand for this material in the towns and cities induces farmers in many portions of the country to stint their own animals in order to realize the high prices it commands. Hence there is a great effort to supplement it with other products. Corn and oats are also fed to work-animals in nearly all the counties reporting in different States of the Union. In many of them grain is given more or less freely to milch-cows and to animals fattening for market. In quite a number of counties grain is fed to stock-cattle and to sheep, but these are communities of advanced ideas on the subject of stock-raising.

In New England, corn-fodder, wheat, oats, and rye-straw, wild hay, salt hay, and other organic matter are used to save hay and corn. One adventurous correspondent in Maine has tried feeding flour to cattle, but is not at all encouraged by the financial results of the experiment. Millions of bushels of western corn are used in feeding animals. Grain is fed to work-animals in all the counties reporting from this region; in many, to milch-cows, especially in the dairy-regions; in some few, to all kinds of stock.

The New York farmers practice a more general feeding of grain to all kinds of stock, especially toward the close of the winter. In addition to timothy and clover hay, straw, pumpkins, millet, Hungarian grass, corn-fodder, especially from sowed corn, and other supplementary materials, are pressed into service. New Jersey consumes about all her corn-crop on the farm, and uses about the same kinds of food previously enumerated. There is an increased amount of grain-feeding to all classes of animals. Pennsylvania produces a larger corn-crop. A generous winter-feeding is gaining ground in many counties. A careful use is also made of straw, corn, fodder, pumpkins, mill-stuffs, &c. Delaware being more exclusively agricultural, and with a smaller number of large towns and cities, is able to spare nearly or quite half of her corn-crop for market. There is here also a variant usage in regard to grain-feeding; in some cases corn and oats are exclusively given to work-animals, and in others also to cattle and sheep.

The same may be said of Maryland, where, however, a more enlightened policy leads to a more generous support of farm-animals. Nearly a third of the corn-crop is marketed, the remainder being consumed on the farm. Virginia sends about one-sixth of her corn-crop to market,

and supplements her hay-crops with corn-fodder, pea-vines, straw, &c. In North Carolina crab-grass hay is added to the other materials; 89 per cent. of the corn-crop is consumed at home. South Carolina adds to the miscellaneous list turnips, cotton-seed, rice-straw, rice-bran, &c. In this South Atlantic coast region the tendency to allow inferior classes of animals to shift for themselves during the winter-season is more observable in the lower latitudes. Florida also uses a miscellaneous list of semi-tropical materials to supplement hay and corn. The Gulf States generally use the same class of feed as Florida. Work-animals appear to be generally fed upon grain, but to other classes it is, as a general thing, given sparingly if at all.

Tennessee uses 86 per cent.; West Virginia, 92 per cent.; Kentucky, 87 per cent. In addition to hay and corn, these States use large quantities of corn-fodder, Hungarian-grass, straw, millet, &c. A more copious grain-feeding is practiced than in the States farther South. Work-animals, fattening-cattle, and milch-cows receive the most of this nourishment, but stock-cattle and sheep are also fed in many places.

So far as indicated by the counties reporting—for it is not given as the exact average for the entire crop of the State—Ohio feeds 82 per cent. of her corn-crop in counties where it is grown; Michigan, 89 per cent.; Indiana, 80 per cent.; Illinois, 73 per cent.; Wisconsin, 91 per cent. The hay-crop is supplemented by about the same materials as in the Eastern States within the same parallel. There is the same difference also in the liberality with which grain is dealt to different classes of animals; the tendency is toward a more rational and generous diet.

West of the Mississippi, Minnesota consumes at home 98 per cent. of her corn; Iowa, 75 per cent.; Missouri, 92 per cent.; Kansas and Nebraska, 93 per cent. In the two States last named this statement should be taken of average years. The grasshopper devastations last year materially reduced the crop. They almost entirely absorbed the surplus. In the older-settled parts of this region the tendency is to feed more grain to stock of all kinds, while in the newer settlements the traditional pioneer policy of partial starvation still prevails.

On the Pacific coast the volunteer crops of grain furnish a very nutritive forage when mowed and cured as hay. Corn is not a very abundant crop in that region, and hence but a small quantity finds its way to market. In some cases barley is used to fatten hogs. In some parts of Oregon hay is only given to poor cows, those in better condition being able to forage for themselves. A few counties in the Territories provide grain for live stock; others utilize straw, fodder, and other vegetable matter, but in most of our reports it is stated that animals are turned upon the range to shift for themselves during winter.

Cost of wintering.—*Horses:* In New England the cost of wintering horses is greatest in Rhode Island. This fact may be explained by the proximity of the agricultural regions to the town and city markets. The farmers in this State obtained higher prices for hay and corn during the last year than in any other State in the Union; hay there averaged $24.66 per ton; corn $1.18 per bushel, and oats 73 cents. The averages of States were as follows: Maine, $37; New Hampshire, $37; Vermont, $38; Massachusetts, $45; Rhode Island, $48; Connecticut, $45.

These figures are made from the averages of counties reporting, with due reference to the prices of feeding-material in those and in the remaining counties.

In the Middle States the maximum cost of wintering horses, $48

per head, is in New Jersey; next in order stand Delaware, $43; New York, $37, and Pennsylvania, $36. Delaware farmers, last year, received the highest average price for hay, $20 per ton, and those of New York the lowest, $13.10. New York received the maximum price for corn, 93 cents per bushel, and Delaware the minimum, 70 cents. The price of oats ranged from 52 cents in Delaware to 60 in New Jersey.

Of the South Atlantic States the highest average cost is in Maryland, $34 per head; next Georgia, $28; South Carolina, $24; Virginia, $22; North Carolina, $21. The farm-prices of hay ranged from $14.83 per ton in North Carolina to $23.83 in South Carolina; of corn, from 64 cents per bushel in Virginia to $1 in South Carolina; of oats, from 54 cents per bushel in Virginia to 91 cents in South Carolina.

Of the Gulf States, Florida seems scarcely to know anything of the necessity of wintering animals. One correspondent rather dubiously assigns $10 per head as the cost of wintering horses. Louisiana averges $18 per head; Texas, $20; Alabama, $22; Mississippi, $26. Florida farmers not raising any hay, our correspondents were unable to name any price obtained for it; Texas averaged $10.92 per ton; Alabama, $17.50; Louisiana, $20; Mississippi, $21.09. Corn ranged from 75 cents per bushel in Texas to $1.01 in Mississippi; oats from 84 cents per bushel in Texas to $1.02 in Mississippi.

Of the inland Southern States the average expense of horse-keeping through the winter averaged $20 in Arkansas, $21 in Tennessee, $18 in West Virginia, and $19 in Kentucky. Hay brings from $14.12 per ton in Arkansas to $19.08 in Tennessee; corn from 55 cents per bushel in Kentucky to 95 cents in Arkansas; oats from 53 cents per bushel in West Virginia to 92 cents in Kentucky.

North of the Ohio River the expense of horse-wintering averages $25 in Ohio, $28 in Michigan, $20 in Indiana, $19 in Illinois, $34 in Wisconsin. The farm-prices of hay ranged from $10.07 per ton in Wisconsin to $17.82 in Ohio; corn from 51 cents per bushel in Indiana to 65 cents in Michigan; oats from 44 cents in Indiana to 50 cents in Michigan.

West of the Mississippi the average cost of wintering ranges from $9 in Kansas to $28 in Minnesota; Iowa averages $16, Missouri $15, and Nebraska $13. Farm-prices of hay vary from $3.86 in Kansas to $12.05 in Missouri. The cheaper hay of Kansas and Nebraska is mostly made from the wild grasses of the prairies. Corn ranges from 43 cents per bushel in Iowa to 91 in Kansas, and oats from 38 cents per bushel in Iowa to 53 cents in Kansas. The high prices of grain in Kansas and Nebraska are largely the result of the grasshopper-devastations and the drought.

On the Pacific coast winter-feeding of live stock is scarcely known. One correspondent in California speaks of hiring pasture at from $1 to $1.50 per month. Another states that only in the wetter portions of the rainy season are farm-animals housed and stall-fed. At such times the cost of hay-feeding per month is about $5. Another states that green pasture lasts all through the winter. Work-animals are fed grain only when at work. Very little corn is raised, but oats and barley in considerable quantities. The same facts are reported as a general thing by our Oregon correspondents. Only their stock-cattle and poor cows are, in many places, treated even to hay; the hardier and better-conditioned animals take very good care of themselves upon the range. Farm-prices of hay in California, $15.09; in Oregon, $11.50; corn 98 cents per bushel in California and 94 cents in Oregon; oats 69 cents in California and 42 in Oregon.

In Colorado wintering horses costs from $5 to $25 per head; in Utah

from $10 to $50; in Dakota from $6 to $30. In our reports from the other Territories no estimates are given.

Milch-Cows: The cost of wintering milch-cows in New England varies from $23 per head in New Hampshire to $38 in Massachusetts; Maine averages $29; Vermont, $25; Rhode Island, $30; Connecticut, $37.

The Middle States average $24 in New York, $29 in New Jersey, $23 in Pennsylvania, and $26 in Delaware.

The average on the South Atlantic seaboard is $20 in Maryland; $11 in Virginia; $10 in North Carolina; $15 in South Carolina, and $14 in Georgia.

In the Gulf States our Florida correspondents report no averages, inasmuch as the cows there find pasture during winter. Alabama averages $10 per head; Mississippi, $8; Louisiana, $7; Texas, $6. These figures, as well as those for other Southern States, of course, refer to those animals that are "wintered" at all, and not to the far greater proportion left to find pasture as best they can. This wintering also means only occasional or partial feeding.

Of the inland Southern States, Arkansas reports $9; Tennessee, $16; West Virginia, $12; Kentucky, $17.

North of the Ohio River the average cost in Ohio is $16; in Michigan, $25; in Indiana, $15; in Illinois, $15; in Wisconsin, $21.

West of the Mississippi, Minnesota reports $13; Iowa, $11; Missouri, $11; Kansas, $6; Nebraska, $7.

On the Pacific coast, cows are generally pastured during the winter, and the amount of stall-feeding is too small for a reliable estimate.

In Colorado the cost of feeding cows is estimated from $7.50 to $40; in Utah from $9 to $45; in Dakota from $3.50 to $12.

Sheep: To winter a sheep in Maine costs about $3 per head; in New Hampshire, $2.50; in Vermont, $2.50. In Massachusetts the aggregate of these animals is too small and the individual flocks too scanty to give a basis for estimate. Rhode Island and Connecticut return very high rates.

The average cost in New York is $2.50; in New Jersey and Pennsylvania, $2; in Delaware, $2.75.

In Maryland the average is $2.75; in Virginia, $1.50; in North Carolina, $1.30; in South Carolina, $1.70; in Georgia, $1.50.

Florida has too few sheep to report on. In Alabama the cost of wintering is $1 per head; in Mississippi, 75 cents; in Louisiana, 50 cents.

In Arkansas the average is $1.07; in Tennessee, $1.66; in West Virginia, $1.21; in Kentucky, $2.07.

Ohio reports $1.75; Michigan, $1.90; Indiana, $1.60; Illinois, $1.55; Wisconsin, $2.

Minnesota averages $1.90; Iowa, $1.60; Missouri, $1.40; Kansas, $1.20; Nebraska, $1.

On the Pacific coast, sheep shift for themselves on the winter pastures.

These figures show the varying influences not only of different climates and soils but also of local circumstances. In the smaller New England and Middle States the agricultural area bears a smaller proportion to the number of commercial and manufacturing cities, and hence, consumption being in excess, the prices of hay and grain are enhanced and consequently the expense of wintering is greater. This explains the fact that the maximum expense of horse-wintering is in Rhode Island and New Jersey, and the minimum in Florida and the Pacific coast, where the winter months do not entirely arrest vegetation, and where the supply of green food is almost perennial. The highest cost of wintering

cows is in Massachusetts and the lowest in Kansas. The cost of wintering sheep is greatest in Massachusetts and least on the Pacific coast. The quantity and quality of fodder, roots, wild hay, and other supplementary feeding-matter are undetermined elements in the problem of winter-feeding of live stock.

INCREASED VALUE.—Nearly all the States report some increase in value in all classes of farm-animals from winter-feeding. The only decrease in the value of horses is in Michigan, in which several counties report an exceptional demand in the fall for horses, causing an increase of values at that period of the year. Cows and sheep are of lower average value in spring in Mississippi and Louisiana; cows scarcely hold their own in Delaware.

In New England the margin of differences is narrower in those counties where animals are expected to pay their expense of wintering by work or by yield of milk. Horses in the neighborhood of Boston bear a high average value, subject to trifling fluctuation in different parts of the year. In the rural districts, however, where the winter-keep of animals is very partially compensated by use, there is a very considerable difference in their value before and after wintering. This increase of value amounts in some cases to over two-thirds the cost of the food consumed, but the average is less than that. The value of the manure produced is an unascertained factor in the problem of wintering stock, and is of variable influence upon the general result, from the fact of its different treatment in different localities. The largest rate of increase of values of horses and sheep is in New Hampshire and the smallest in Massachusetts; of cows, the greatest is in Vermont and the smallest in Massachusetts.

The Middle States illustrate the same general principles. In New Jersey the proximity of the great commercial and manufacturing cities, New York and Philadelphia, besides several large cities within her own limits, gives rise to more winter employment for work-animals, which renders the high cost of feeding of less importance in enhancing spring values. Animals steadily worked do not come out of winter quarters in as high condition as those stabled and fed. Hence in this State is found the narrowest margin of increase in the value of horses, while the maximum is found in Delaware, where the opposite class of conditions prevails. A medium range of increment is found in New York and Pennsylvania, whose large areas are less within the scope of those urban influences. A larger proportion of the cows in New Jersey are kept for the winter supply of milk for the cities, the increased price of which, during that season, is intended to cover the cost of keeping. Delaware reports little, if any, increase of value, a fact which does not speak favorably for the care of milch-cows in that State. New York and Pennsylvania show greater margins of increase, from the fact that a smaller proportion of their cows are productive during winter. New Jersey fattens a large proportion of her sheep for the meat-market; hence the actual increase of mutton causes an average increase of over 60 per cent. in the counties reporting. The other States of this section report very considerable margins, but less than New Jersey.

On the South Atlantic seaboard, our correspondents, in counties neighboring to Baltimore, decline to give estimates on this point, a fact which indicates no great difference between fall and spring values. Of other counties in Maryland it is noticeable that the greatest difference is in Montgomery, on the Potomac River. In Virginia, Accomac, on the coast, reports but 10 per cent., while Mecklenburgh, on the south border and considerably distant from the sea, presents the greatest dif-

ference—33 per cent. In North Carolina, Pasquotank, on the coast, increases her values in spring but 10 per cent., while Duplin, in the interior, shows 40 per cent. In the other States of this region, and in the Gulf States, our reports show about the same range of facts in regard to horses; but in regard to cows and sheep the figures represent only that small portion of the animals that are fed during winter, and do not warrant general conclusions. Their money-value is too often depressed in the spring through poverty of condition, caused by partial starvation.

The inland Southern States exhibit higher ideas in the care of live-stock, and exhibit fewer instances of that gross neglect so general in the far South. The estimates of difference between fall and spring values seem to be more reliable, but are subject to local variations. Counties in different parts of Arkansas and Tennessee report no difference of value, while in neighboring counties margins of 20, 25, and 30 per cent. are presented. It is noticeable that in Kentucky there are no counties which do not show some difference; yet the average of the counties reporting is less than in the other States of this region.

North of the Ohio River, several counties report the money-value of horses at its maximum in the fall, on account of the greater local demand at that season. In a few other counties there is no increase of value, but in most cases there is a considerable difference. Of the counties reporting, Ohio presents the largest average difference of values of horses, Michigan of cows, and Wisconsin of sheep. Here, as in the States east of the Allegheny Mountains, our correspondents in the vicinity of large cities leave this part of their reports blank.

West of the Mississippi River, all counties reporting show some difference in fall and spring values. Minnesota shows the greatest increase in horses and Missouri the least; in cows, the greatest increase is shown by Nebraska and the smallest by Missouri; in sheep, the maximum increase is found in Kansas and the smallest in Missouri.

On the Pacific coast our correspondents seem reluctant to commit themselves to definite estimates. Local variation is also considerable, and enhances the difficulty of coming to general conclusions.

GAIN OR LOSS OF WEIGHT IN WINTERING.—In Maine, horses, being relieved from heavy work and adequately sheltered, show an increase of weight and an improvement of condition in spring, as also do milch-cows and cattle fattening for market. This, however, is the general rule in all parts of the county, especially in regard to work-animals; but in regard to stock-cattle and sheep, the exception becomes the general rule. Maine, New Hampshire, and Vermont show some decline on the whole. In Massachusetts, Rhode Island, and Connecticut, in spite of the higher cost of feeding-material, all classes of farm-animals are kept nearer their normal condition, because most of them are kept either for work or milk.

Our correspondence in New York presents a considerable variety of treatment of animals. Several counties report an absolute gain in weight, but the larger number acknowledge a decline. Even horses, in some cases, decrease from 50 to 100 pounds per head during the winter; cattle lose from 25 to 75 pounds; sheep from 10 to 15. Dairymen generally keep up their cows on grain, but the cows of other parties decline to a greater or less extent. In New Jersey the condition appears to be more generally kept up. The general practice in Pennsylvania falls below several admirable examples in different parts of the State. In Lancaster County it has been tested that good feeding will make a steer of 1,200 pounds, worth 5 cents per pound in the fall, weigh 1,600 pounds in the spring, and bring 7 cents per pound—a gain of $52, very largely

overbalancing the cost of winter-feeding and care. In Delaware all animals except horses decline in weight.

In Maryland there is also a decline, more perceptible in those counties in which poor shelter is the rule; the loss of weight ranges from 5 to 15 per cent. Down the Atlantic coast the rate of loss increases—cause, neglect. In Virginia, while horses almost hold their own, cows and sheep show losses from 10 to 40 per cent.; yet in some cases it is reported that fed animals increase 2 pounds per day. The depreciation of farm-animals grows still more marked in North Carolina, South Carolina, and Georgia, the decline of stock-cattle in several counties reaching an average of 50 per cent.

In Florida the winter-grass is abundant, though not very fattening; even in this mild climate it is reported that in many places it is esteemed lucky if cattle and sheep survive the winter. One correspondent in Alabama estimates the average loss of weight in cattle and sheep in his county at over 60 per cent. Another presents a pathetic picture of the faithful family cow "shivering herself away in the beating rains and winds," with no shelter except a fence-corner. "Sheep are not seen for weeks, and are very unwelcome visitors at the farm-yard, especially during cold sleeting weather." In more than one county of Mississippi cattle and sheep die of starvation. A less wasteful system appears in Louisiana and Texas, yet here are many flagrant cases of neglect, entailing terrible losses upon cattle and sheep.

In Arkansas the percentages of decline are less, though in one or two cases they amount to 30 per cent. In Tennessee the improvement is still greater. In West Virginia and Kentucky the average loss declines to 10 or 15 per cent., though some flagrant exceptions are noted.

There is an approach to normal condition in many counties of Ohio, where the rate of decline varies between 1 and 10 per cent., with isolated cases of greater loss. The value of good shelter is practically realized in the absence of decline and increase of weight in several counties. In Ross three and four-year old cattle under shelter gain from 200 to 300 pounds, but only 10 per cent. of the cattle are adequately sheltered. Here two-year-old stock, only half fed, will gain from 5 to 10 per cent. if sheltered. Most of the counties in Michigan report greater or less decline, though several maintain a good average. The loss in some cases amounts to 25 per cent. In Indiana there is a greater net decline of weight upon the whole. In Illinois the range of decline is about the same. Our reports from Wisconsin, less numerous than usual, show a generally better condition at the close of the feeding-season. In Waukesha County it is recommended that sheep be fed hay in yards surrounded by a tight board fence 6 feet high, and copiously littered with straw every two or three days.

In Minnesota the highest average decline does not exceed 10 per cent. In some counties of Iowa old stock falls off about 20 per cent., but this is partially balanced by the increase of younger animals. Cows generally lose; sheep and stock-cattle show a still greater decline. The average loss probably does not exceed 10 per cent. in any county. In Minnesota the range of cattle and hogs is between 40 per cent. gain and 40 per cent. loss. One correspondent is very severe on slipshod farmers, who are satisfied if animals can just kick in the spring. The better class of farmers, who, however, are in the minority, do not allow their animals to lose weight. In Kansas the rate of loss has been greatly increased by the devastations of grasshoppers, though in Crawford County live-stock have done exceptionably well. In Franklin, on the other hand, there was a fearful loss in the spring. In some counties the price

of animals declines toward spring, from the fact that their owners, having laid in too short supplies, are anxious to sell. In Lyon ordinary horses and cattle lose 25 per cent. in weight; wintered on prairie-grass alone, they lose 40 per cent., and 25 per cent. of them die. The general tone of the reports shows a serious decline. In Nebraska, with the same causes operative as in Kansas, the range of loss is much narrower, seldom exceeding 20 per cent. On the Pacific coast there is a general falling off of weight during winter, the loss of some counties reaching an average of 20 per cent. To this, however, there are exceptions. In San Joaquin, Cal., stock of all sorts held their own and looked well at the close of winter. Our Oregon reports indicate a decline, though the rate is not estimated.

In the Territories are found some localities with mild climate and abundant winter-grasses where, in ordinary seasons, live stock do well. But in most cases reported there is a decline in weight amounting, in several counties, to one-third. In years of unusual severity the losses of farm-animals are appalling. The merciful policy of good food and shelter will yet be found the most profitable.

Our March returns afford unwelcome evidence of the fact that American farmers, as a rule, calculate that their farm-animals, with the exception of working-stock, milch-cows, and animals fattening for market, shall come out of winter-quarters reduced in weight and depressed in condition. Numerous exceptions are found in the older States, where the higher economies of farming have begun to enforce attention, but these exceptional cases constitute a minority even in their own sections. A few farmers in the West and South illustrate this general policy of depletion by its extreme but legitimate results. The care of stock-cattle and sheep, and often of milch-cows, is a responsibility which they calmly cast back upon Providence, caring very little for the suffering inflicted upon their brute dependents, whose gaunt frames and uncomplaining misery awaken no sentiments of pity or compunctions of conscience. Their shriveled carcasses are allowed to rot upon the range, or are hastily removed from the field without even suggesting any idea of personal responsibility for this waste of animal life. The number of such farmers, in whom a blind and stupid greed has paralyzed the sentiments of humanity, is happily small, and growing smaller as the true principles of production become better understood.

But leaving out of view such extreme cases, the facts elicited by our March returns give considerable ground for sundry sharp criticisms by foreigners upon this branch of American farming, criticisms which one of our leading writers is compelled to acknowledge as just. The general disposition to allow farm-animals to decline in weight and condition during winter-feeding springs from inconsideration and neglect rather than from any lack of humane feeling. It is based upon a false economy. The food necessary to keep up the standard of condition during winter will be much less than that which will be required to restore the depleted carcass in the spring. A very considerable proportion of the loss of weight of animals during winter results from wasteful feeding and lack of shelter. The drafts upon the animal heat and vitality of unsheltered beasts amount to a third or a half more of feeding-material than would keep them in good condition under cover. But few, if any, of the farmers who expose their animals to the inclemency of the season make any extra provision of food; they seem rather to diminish the feeding in proportion to the exposure. Even the pittance doled out to animals wintered in the field is largely wasted by improper management.

The first great reform suggested by our returns is the enlargement of the stock of winter-food by the increased production of hay and other feeding-material. It is true economy to utilize straw, fodder, and other vegetable matters upon the farm, but these are generally deficient in some of the elements of nutrition, and need to be supplemented with hay or grain. Our grass-crops present but small returns for the surface they cover and the capital and labor invested. The State of New York, for example, scarcely averages a ton of hay per acre. Yet few of her farmers would think of entering a crop, for competition at any agricultural fair, of less than two or three tons per acre. With the same acreage, then, it is possible to double or triple our hay-crop by bringing up the practice to what has been shown to be practicable. Our pastures, which are more than double the area of our meadows, should be stocked with a better class of grasses. Experiments should be made with our indigenous grasses, especially with reference to the curing of hay for winter. It is believed that intelligent effort will yet make two spears of grass grow where one grows now. With such an enlarged basis of vegetable matter, it will be easy to supply our farm-animals with the amount of food necessary not only to keep up their standard of weight, during winter, but also to increase it.

But other reforms must be inaugurated. It is necessary to administer the food provided for animals with intelligent reference to its nutritive qualities and to their peculiar wants. Experiments should be made under scientific authority, showing the specific values of different kinds of food, and the results, carefully gathered and compared, should be placed within the reach of all our farmers. German farmers carefully follow the directions for feeding founded upon the latest experiments of the government agricultural stations. Some such scientific authority is pressingly needed to direct the practice of American farmers.

Finally, the cruel and wasteful policy of exposing farm-animals to the inclemency of the winter should be abandoned, even in our southern climates. These reforms are demanded not only by the spirit of humanity, but also by intelligent economy in production. Our farmers are called upon to furnish the markets with higher grades of animals and animal-products. To meet this demand, the hap-hazard, wasteful methods which characterize extensive regions of our country must be superseded and more intelligent and effective processes introduced.

LOCAL EXCHANGES OF FARM-PRODUCTS.

The principal cash-bringing crop in Maine is the potato, nearly every county producing a surplus, which is shipped to Boston, the manufacturing cities accessible to the coast, and to more distant markets. It is often found that two bushels of potatoes will bring more than a bushel of corn, and more than three bushels to one may easily be grown, so that exchange of potatoes for corn is common, though the thrifty sunrise farmer sells somewhat more than he buys, and thus makes two dollars grow (in the savings bank) where one grew before. Hay is another product that bears a good price, and all points accessible to navigation, or to short railway carriage, spare a limited amount, at the risk of the sustained fertility of the acres producing it. Some oats are also shipped. Aroostook, having a cool, moist atmosphere, in which this plant delights, sends off 25,000 bushels annually. In some counties there is a surplus of meat-supplies: 10 per cent. in Piscataquis and Cumberland, a respectable fraction in Waldo and Androscoggin, 60 per cent. of cattle and sheep in York, three-fourths of the beeves of Franklin, large numbers

of cattle and sheep in Aroostook, and more or less in all the counties mainly agricultural in population. In Hancock a surplus of 600,000 eggs is sold. Some young or store cattle are purchased, a few sheep, and some improved stock of various kinds for breeding. Corn and flour are very generally imported, and pork to less extent. The percentage of home consumption of flour is high in some portions of the State, amounting to 99 per cent. in Sagadahoc, 90 per cent. in Androscoggin and Cumberland, 75 in Piscataquis, the proportion declining to 20 in Aroostook. The town and village population obtain such supplies from other States almost exclusively, and a large proportion of the farmers are equally dependent upon the cereals of the West.

Potatoes are also the main reliance of the New Hampshire farmers; milk is prominent in the vicinity of large towns; butter and cheese are produced in interior dairies; apples produce in bearing years a fair revenue in Hillsborough and southern counties, and maple-sugar yields small gains in spring to nearly all sections. Veal, lamb, some mutton and beef are also sold. Corn, for feeding horses and fattening other animals, is largely brought from the West, together with nearly all the flour used in the State.

The surplus of Vermont consists in improved breeds of horses and sheep, butter of high repute, some cheese, poultry, eggs, potatoes, hay, maple-sugar, onions, and various vegetables and fruits. Most of the flour used is brought from other States, and much corn for feeding and fattening village and farm stock. Essex, bordering on New Hampshire and Canada, sells half the horses raised, half the mutton and beef, some hay, potatoes, oats, and maple-sugar.

As Massachusetts grows less than a quart of wheat to each inhabitant, flour must be sought from other fields. Nor could it be expected that 72,810 persons in rural pursuits could furnish bread for 579,844 engaged in all occupations, besides the children under ten years of age and other non-producers. And yet a large proportion of the vegetables, the milk and fruits, and some portion of the veal and lamb and other meats consumed, are home products. Some products are sold to go out of the State; a considerable quantity of tobacco in Franklin, Hampshire, and Hampden; cranberries in Norfolk, Plymouth, and Barnstable; onions in Essex and elsewhere; lettuce is sent from Suffolk to New York City. In Hampden the tobacco is manufactured before it is sent out of the county.

Little Rhode Island sells onions and potatoes, and some gilt-edged butter, though large supplies from abroad of all the cereals and meats are required in the manufacturing counties.

Connecticut produces eight to ten million pounds of tobacco, much of which, in the leaf or manufactured, goes elsewhere. Hartford grows two-thirds of it all. Litchfield and the whole Housatonic Valley sends large quantities of milk to New York, much veal, poultry, and eggs, some cheese, potatoes, and fruit. In this county are kept 23,000 cows, yielding $1,000,000 per annum in dairy-products. Hartford County imports three-fourths of her breadstuffs and nine-tenths of her meat-supplies. Windham sends milk to Boston and Providence. Onions, garden-seeds, and other special crops are largely sent abroad. Young stock, cows, and steers for feeding are brought from other States to some extent.

The dairy is an important element in New York agriculture. Herkimer, Jefferson, Saint Lawrence, Montgomery, Oneida, and Oswego, each producing from one to five million pounds of cheese, are quite as celebrated for that product as the following are for butter production, each

of which manufactures three to eight million pounds of butter: Saint Lawrence, Delaware, Chenango, Chautauqua, Jefferson, Oneida, Otsego. These are the heavy-weights in the production of the dairy-products of New York. The cereals are principal products in Genesee, Onondaga, Cayuga, Livingston, Monroe, Niagara, Ontario, Seneca, and Orleans, and shipped in some cases beyond county-lines. Hay is shipped sparingly. Hops help the revenues of Madison, Oneida, Otsego, Schoharie, which usually produce more than half the crop of the State. Potatoes contribute largely to the resources of Washington, Rensselaer, Saratoga, Saint Lawrence, Franklin, Schenectady, Suffolk, Kings, Queens, Westchester, and other counties. Hay and straw are shipped from Dutchess, and hay to some extent from many other counties, among which are named Lewis, Franklin, Columbia, Wyoming, Fulton, Onondaga, and Schenectady.

New Jersey, from its location between the two great cities of the continent, depends largely upon the products of the garden and orchard as money-crops. Much of the milk of New Jersey dairies is sent to market unmanufactured, yet butter is sold to a limited extent. It is one of the special products of Hudson and Sussex. The meat-production is veal, spring-lamb, mutton in autumn and winter, and beef to a limited extent. Most of the New Jersey stock of sheep is changed yearly. The common custom is to purchase in August, feed and fatten the wethers till Christmas, keep the ewes for lambs, market the fleece in June, sell the lambs at four months for more money than the sheep cost, and make good mutton of the ewes by midsummer. Poultry is quite an important item of production. Among the counties in which fruits, potatoes, and other vegetables form the cash staples, are Burlington, Bergen, Camden, and Monmouth. Dairy-products are prominent in Hudson, and wheat and corn in Warren. For the past three years this State has averaged about 100,000 bushels of cranberries produced, which is more than a third of the crop of the United States. The area in this fruit is not far from five thousand acres, requiring a capital of more than a million and a half in land and its cultivation. New Jersey is a good market for beeves, and most of the horses and mules are purchased from abroad. Western flour and wheat, and some corn, are brought into most of the counties.

Pennsylvania comes nearer being self-supporting than any of the older States of large population, producing everything that a system of mixed farming in a temperate climate can yield, and depending mainly upon the manufacturing and mining populations of the State for its market. It does not ship largely any of its products, as New York does butter and cheese, but sends a small surplus of dairy and fruit products, wool and mutton and other surplus of the farm, to New York, and butter and fruit to Baltimore and Washington. Its purchases from other States are far less in variety and extent than those of New York or New Jersey, in comparison with population. Animals are brought into the State for fattening, and liberally for stock improvement. A correspondent for Mercer, who has imported Clydesdale horses from Glasgow, English coach-horses from Hull, and draught-horses from London, recently sold four for $12,181. Many Pennsylvanians are quite successful as stock-breeders, and find markets in different portions of the country. Lancaster, York, and Bucks send millions of pounds of tobacco beyond State lines. Susquehanna, with an area of 800 square miles, makes 3,000,000 pounds of butter and sells 90 per cent. of it. The model farm district, Lancaster, ships four-fifths of its products beyond the county, and brings little in. Among the counties which have a

surplus of wheat are Lancaster, (producing 2,000,000 bushels of wheat,) Bucks, Lehigh, York, Cumberland, Perry, Snyder, Fulton, Erie, Chester, Dauphin, Franklin, Adams, and Westmoreland. This is the great wheat-growing State of the East, producing nearly as much as California; in 1869, according to the census, 3,000,000 bushels more than that wheat-exporting State. Some of the counties have occasion to bring in considerable flour and grain. Susquehanna buys half its home consumption of flour, Tioga a larger proportion, and Butler, Warren, Wayne, Clearfield, Clinton, and McKean are also purchasers; and wheat is imported by Luzerne, Cameron, Lehigh, and Lawrence. Steers for feeding are brought into Erie, Columbia, and Lehigh. Three-fourths of the beeves of Elk are imported, and 50 per cent. of those of Clinton and Dauphin, and other counties buy largely. Some counties have a small surplus of horses and mules, and others a deficiency; but the stock of the State is mainly grown within her border, except some animals for fattening.

The surplus of Delaware is largely fruit and vegetables; Sussex, the southern county, though exclusively agricultural, imports half its flour supplies. Most of the animals in use are bred, though a few horses and mules are bought.

Tobacco is the surplus product of Maryland agriculture, nearly all going out of the State. The counties producing the bulk of the crop are Anne Arundel, Calvert, Charles, Prince George's, and Saint Mary's. These counties lie between the Potomac River and Chesapeake Bay. The eastern-shore counties, lying west and south of Delaware and east of the Chesapeake, ship largely of peaches and sweet-potatoes. It is the surest peach section of the country. The cash-bringing product of Montgomery is hay; of Washington, wheat; of Frederick, wheat and corn. Mixed farming prevails in all the counties of Western Maryland to the Alleghanies. Flour is extensively purchased in the tobacco-growing and fruit-producing counties. Frederick, Harford, Baltimore, Carroll, Cecil, and Washington are most extensively interested in stock-growing.

The principal surplus of Virginia is tobacco, which is grown more or less in nearly all the counties, but extensively for shipment only in counties east of the Blue Ridge and in the southern portion of the State. Most prominent among these are Pittsylvania, Halifax, Mecklenburgh, Charlotte, Nelson, Bedford, Albemarle, Amherst, Amelia, Brunswick, Campbell, Franklin, and Henry. It also furnishes a portion of the revenues of many other counties, among them Chesterfield, Floyd, Lunenburgh, King William, Buckingham, and Prince Edward. Wheat is shipped from Clarke, Augusta, Craig, Madison, Prince George, Richland, Botetourt, Loudoun, Pulaski, Frederick, Montgomery, Washington, Culpeper, Tazewell, though not in large quantities. The great wheat region is the Shenandoah Valley and the slopes of the Blue Ridge in Northern Virginia. Princess Anne and Norfolk are truck-patches for the northern market. Cotton is grown in Prince George, Sussex, Rappahannock, to a limited extent, and a few bales in several other southern counties. In Prince George, wheat formerly exceeded in value all other crops, but rust so prevails that it is now confined to the banks of the James River, and cotton, pea-nuts, and winter oats are cultivated in its place. Wheat is drawn from the valley to Richmond, where it is manufactured into a superior quality of flour, of which 250,000 barrels annually are shipped to Rio Janeiro. Cattle and sheep for the shambles are shipped from the section west of the Blue Ridge and from Northern Virginia to the markets of Washington and Baltimore. Horses

and mules are brought into eastern counties, and a few stock-growers are securing well-bred animals for stock improvement.

Coming to the cotton section, which includes the coast States from North Carolina to Texas, with Arkansas and Tennessee, the principal money-receipts are derived from upland or green-seed cotton. Formerly it was scarcely deemed reputable to grow and sell any other crop in the cotton-districts proper. In northern Central North Carolina, a few counties derive revenue principally from tobacco. Some of the western counties sell cereals and a variety of products of the farm and orchard. Corn is the main crop in Burke, Camden, Catawba, Lincoln, Clay, Caldwell, and Pasquotank. Some of the best corn-lands in the country are found in the coast counties of the northeast, in the vicinity of Albemarle and Pamlico Sounds. Hyde County, in her deepest soils, produces a growth of stalk that Illinois scarcely can equal. Ashe, Buncombe, Clay, and, to some extent, all the western counties have cattle to sell. Apples are, perhaps, as abundant a crop in Western North Carolina as in Western New York, and so abundant that there is absolutely no market at any price, except as cut and dried, and in the form of cider-brandy, from a lack of railroads or other facilities for transportation. South Carolina has little for sale except cotton. The rice-district comprises the coast counties, Georgetown, Colleton, Charleston, and Beaufort, producing in the order named and yielding annually, before 1860, more than 100,000,000 pounds; now scarcely one-third as much. The Georgia rice region includes the coast counties, Chatham, McIntosh, and Glynn, in which production has declined materially. Florida is a thinly-settled region, and has little to spare, mainly cotton, upland and sea-island, some tobacco in one county, oranges, bananas, and various fruits and vegetables in the east and south, though the trade in the latter product is mainly prospective. In the entire returns from Georgia the money-crop is cotton in all the counties, excepting rice only on the coast, corn in Forsyth and White, and vegetables in Lumpkin. In Hall, White, Johnson, Gwinnett, Telfair, Schley, and Forsyth farm-animals of some kind are sold, beef, pork, or mutton. Hall, White, Schley, and Forsyth have some horses and mules to sell. There are other counties in the northern part of the State that supply wholly or in part the home demand for farm-animals; Telfair, one of these, raises nine-tenths of the home requirement. Camden sells this season 20,000 bushels of rice and buys 1,000 bushels of corn, also sells 100 tons of hay. Alabama and Mississippi counties, almost without exception, find cotton their principal if not their only surplus. Only Jackson County, in Alabama, reports any farm-animals sent elsewhere, and Rankin, in Mississippi. Cotton and sugar are the only crops sold in Louisiana, except small amounts of farm-produce in the way of local exchanges. Texas, a State with a rapidly-increasing cotton-product, has other prominent interests. A large proportion of the well-settled counties make cotton the main crop, throughout the eastern and central counties, from the Gulf to the Red River. Sugar is grown to some extent in the southeast. Wheat is admirably adapted to the northern central counties, and is mentioned prominently as a shipping-crop in Fannin, Coryell, Kern, Lampasas, Gillespie, Collin, Williamson, Kendall, Medina, and Bosque. The western and southwestern counties ship mainly cattle and sheep, wool and hides. Some counties, ordinarily self-sustaining, will require supplies this year for immigrants. Arkansas is almost exclusively engaged in cotton-growing. A few counties in the northern part of the State are better suited to mixed farming. Brown ships wheat and corn, Madison wheat and pork, and Washington

fruits and breadstuffs and meat. Tennessee, the last of the cotton States, produces cotton largely in only a few western and southern counties. The elevated portions, comprising a large part of the State, are better suited to the farm-products of the temperate zone. Among the counties selling wheat are Grainger, Hancock, Greene, Meigs, Sullivan, Washington, Williamson, Dickson, Monroe, and Bradley. It was once the great corn State of the Union, and many counties have now a surplus. Horses and mules and other stock are sold by the eastern and central counties generally. Dried fruit is a minor product of considerable importance in a large portion of Tennessee.

This whole section, with the exception of the most of Tennessee, a portion of North Carolina, the mountain areas of Georgia and Alabama, the most of Florida, and the western part of Texas, *i. e.* the cotton-growing area, procures nearly all its flour, most of the stock of horses and mules, a smaller percentage of beef-cattle and sheep, a large amount of bacon and other hog-products, from Tennessee and the Ohio Valley, and even from beyond the Mississippi. Some counties purchase all flour and nearly all meats. Almost everywhere corn is a large product, next in importance to cotton, but it is rarely sufficient to meet the demand, as it furnishes the principal support for both man and beast. The State of North Carolina, suited to almost tropical growth and to all the products of high temperate latitudes, having the sea-coast on one side, and elevations of 6,000 feet on the other, with hundreds of miles between of varied surface, should purchase less bacon and fewer horses from the West. Even an inland county like Lenoir buys elsewhere a portion of its supplies of flour, pork, and hay. South Carolina is still less independent in respect to these supplies. Though most of the counties of Florida are measurably self-supporting, the cotton-counties all obtain provisions from abroad; in Santa Rosa "nearly all the products of agriculture consumed here are brought from the Western States." A part of the hay, pease, and potatoes are the only exceptions. A large number of the Georgia counties buy 50 to 100 per cent. of the consumption of flour, from 25 to 67 per cent. of their corn, and from 30 to 75 per cent. of bacon, and nearly the full supply of horses and mules. A small number come much nearer self-support. Alabama and Mississippi average still larger deficiencies than Georgia; and that portion of Louisiana on the Mississippi depends upon the Northwest for nearly all supplies, corn being a partial exception to the general deficiency. The counties where cotton is grown in the other cotton-States have considerable deficiencies to supply from abroad. That this disproportion in crop-areas is neither necessary nor profitable is shown by the fact, everywhere presented, that those who make cotton their surplus crop, and make their own bread and meat, accumulate more money, and possess lands with fertility better sustained, than those who purchase most of their supplies.

West Virginia has a small surplus of mixed products, wool, beeves, and mutton, poultry and eggs, fruits, &c. Kentucky sells mainly farm-animals, horses, and mules, and tobacco. Hemp, once prominent, is now little grown. Eastern Ohio sells large quantities of wool; the bluffs and adjacent uplands of the Ohio River furnish for shipment by water large quantities of apples, while the Lake shore and islands of Lake Erie supply grapes and wine for distant markets; Northern Ohio makes a specialty of the dairy, and has a large trade in wool; Southern Ohio fattens and ships cattle from the Scioto to the Indiana line, and raises some mules for shipment; and the main tobacco-counties are Montgomery, Monroe, Noble, Brown, Belmont, Clermont, Washington,

Warren, Preble, Darke, Morgan, and Guernsey, none of which had a product smaller than one million pounds in 1873, and the first-named had about eight millions. Stock-cattle are bought largely from the West, some fruit is brought from Michigan, and thorough-bred animals for stock-improvement are to some extent obtained from abroad. The surplus of Michigan is mainly wheat, wool, potatoes, and fruit of various kinds on the Michigan shore and in the southern counties. It has a variety of productions, and each county, as a rule, furnishes mainly its own supplies. Some counties send abroad 75 per cent. of their wheat-product. Indiana has a surplus of wheat and other cereals, raises and feeds cattle, sells some pork, wool, and mutton, horses and mules, and disposes of much corn in the form of whisky. One distillery in Marion uses 1,000 bushels daily. New Albany ships down the river thousands of barrels of potatoes and vast quantities of cabbage. Tobacco is also a source of revenue to Indiana. Improved stock is brought into the State.

Illinois, the great corn State, one-fifth of its area being a corn-field, feeds cattle, fattens swine, and raises horses and mules for the southern market, some wool, and a variety of agricultural productions. There is usually one industry especially prominent in each section. Among the wheat counties, Adams, Pike, Jersey, Monroe, and Randolph, lie on the Mississippi, and have a rich soil, much of it well adapted to large yields of corn; Greene borders on the Illinois; Montgomery and Macoupin adjoin the fertile corn-producing Sangamon; Clinton and Washington are three-fourths fertile prairie; and Stephenson, on the northern border, is the finest portion of the Rock River Valley. The great corn counties are still more scattered, Champaign and Vermillion being in the eastern central part of the State. McLean, Logan, Morgan, and Mason occupy central positions; Bureau, Henry, Knox, La Salle, and Warren are north and west of the Illinois River, only two of which border upon it. Tobacco is shipped from Williamson, Saline, Hamilton, Franklin, Wayne, Johnson, and, in small amounts, from several others. Corn is shipped from the principal maize-producing counties, yet most of it is fed within the lines of the counties producing it. Hay is a leading shipping-crop in Marion and Hancock; fruits and vegetables on the line of the Central Road in South Illinois; and all the cereals are produced as a surplus in most of those mainly devoted to corn and wheat. Texas and western stock for feeding and many thorough-bred animals are brought into the State. Many counties fail to produce their own flour; some furnish a small market for potatoes, and several for fruits. Farm-productions are shipped extensively, and few purchased from abroad. The surplus crop of Wisconsin and Iowa is wheat. Hops are grown in both, mainly in the former, tobacco to some extent in Wisconsin, and cranberries in the marshes of the northwestern portion of the same State. Wheat is the main shipping-crop in every Minnesota county reported, except Isanti, where potatoes and hogs are named. Iowa has immense quantities of wheat and corn for export, stock and fat animals, from all settled portions of the State. Appanoose farmers have sold in one season timothy-seed to the value of $70,000, and think they can afford to buy flour and pay for it in the product of more profitable crops. Most of the Iowa counties ship wheat, most finding a local use for corn, but maize is the main export of Louisa, Fremont, Appanoose, Dallas, Jackson, Pottawattamie, and Story. Very little is procured abroad, except fruits, young stock, and improved breeds of farm-animals. Wheat is the principal surplus crop of Missouri counties, and oats, corn, tobacco, flax-

seed, cotton, and other crops increase the aggregate shipment, and hogs, and cattle for beef, with some horses and mules, constitute the surplus animal production. Some counties procure flour from abroad, and a few buy corn, potatoes, grass-seed, &c., though most of them are self-supporting. The principal corn-growing counties are, Saline, La Fayette, Jackson, Johnson, Holt, Henry, Cooper, Clinton, Clay, Cass, Carroll, Buchanan, Boone, Atchison, Nodaway, Polk, and Ray. Saint Charles, Saint Louis, Franklin, Saline, Cooper, Howard, La Fayette, and Lincoln produce largely of wheat. The largest tobacco-growers are Chariton, Franklin, Howard, Lincoln, Pike, Callaway, and Randolph.

Kansas is a self-supporting State, with a large surplus, except in recently-settled districts in very exceptional seasons of drought and grasshoppers. Even with a third of a crop of corn the past season, there are more than thirty bushels of corn to each inhabitant, and of wheat not less than eighteen bushels, allowing more than half the crop as a surplus. Labette yields half a million bushels of wheat, and Cherokee, Doniphan, Brown, Wilson, Saline, Montgomery, Johnson, Dickinson, and Crawford have from 200,000 to 400,000 bushels each of winter-wheat alone. The spring-wheat is about one-third of the crop, produced largely in Brown, Butler, Clay, Cloud, Dickinson, Jewell, Marshall, Nemaha, Republic, and Washington; none of which produce less than 100,000 bushels. Johnson, Leavenworth, and Miami contributed even last season more than a million bushels each of corn to the supply of the State. A surplus of farm-animals, wool, and various small products is also made, though the immigration of each year absorbs much of this, as is especially the case with all the productions of Nebraska. California ships mainly wheat, wool, wine, and fruits.

THE PROGRESS OF ASSOCIATION.

The answers to questions relative to the advantages to be derived from co-operation of farmers in selling, buying, or for mutual advantage otherwise, are various in tone and tenor, indicating a general desire to associate for mutual protection and advantage, but a great diversity in the degree of effort made in that direction and in the measure of success attained. These efforts are made by the Patrons of Husbandry, by agricultural societies, and local clubs, have been most general northwest, frequent in the South, and less so in the Middle and Eastern States. The purchase of commercial fertilizers by the quantity has saved much to southern planters, and much more would have been saved if ready money had been more generally in possession. In Culpeper, Virginia, an enterprising farmer saved to his neighbors $800 on 100 tons commercial fertilizers, $150 on 100 tons of plaster, and $150 on 150 bushels of clover-seed. In Wake County $2,000 was saved in the purchase of a quantity of a certain fertilizer made from the formula of one of the club, costing $30 per ton. The Piedmont Milk and Produce Association has saved a respectable sum in the marketing of their produce. In portions of the cotton States there has been quite a saving in the purchase of supplies; for instance, in Claiborne, Mississippi, flour was obtained in Saint Louis for $8 which had brought $14, and meal cost $4.25 per barrel instead of $7.50, and corn 85 cents instead of $1.50. The county of Lauderdale, Mississippi, claims a saving of $50,000 by co-operation. Other counties in the South and West report $40,000 or less; and the larger number refer to an indefinite, though considerable saving. There

are others that report no saving whatever or attempt at co-operation. In some cases it is asserted that losses have occurred from attempts of farmers to do business in the sale of their surplus and purchase of their supplies. Many business enterprises have been undertaken by granges and other associations, sometimes with positive advantage, and occasionally at a loss. In some cases the capital employed has been wasted, and additional assessments have been required. Probably the greatest advantage derived from these attempts to avoid the services of middlemen as much as possible has been the habit formed of purchasing for cash and avoiding debt. Among the many examples given of these enterprises, some in California are most prominent. The farmers of San Joaquin, connected with the Patrons of Husbandry, have an incorporated company; have their own warehouses to store their grain; and an agricultural warehouse where they sell all kinds of agricultural implements. By this means they have reduced the price of implements from 10 to 15 per cent. They have also reduced the price of storage on grain about 30 per cent. They have a Grangers' Bank in San Francisco that will advance money on warehouse-receipts for grain at a low rate of interest, thereby enabling the farmer to hold his grain for a remunerative price. There is also another advantage in storing grain in the grange-warehouse. It is this: the farmer receives the same number of sacks he delivered to be stored. Formerly he only received the same number of pounds that he delivered, and as the wheat is generally stored immediately after harvest, when it is very dry, the gain (if left in the warehouse any length of time) is very considerable. Sometimes the gain in weight between Stockton and San Francisco is equivalent to the cost of transportation between those points. By co-operation these farmers claim to have saved the past year in purchasing sacks for grain, agricultural implements, advantage in storing, procuring supplies, &c., not less than $50,000.

THE TOBACCO-CROP OF LAST YEAR.

The crop of 1874 was known to be exceptionally small and poor, from seeding to curing, and in nearly all of the tobacco-districts the destruction of seed-beds by insects, and the drought which dried out the plants before setting or burned them afterward, caused the reduction of the reported area in July more than half. One county in Kentucky, Adair, which grew 2,500 acres in 1873, had scarcely 25 acres planted on the 25th of last June. Low prices also discouraged planting in some sections. The average condition of the crop in Kentucky was 42 per cent. in July, 31 in August, 31 in September, 44 in October, and the indicated product in November was 40 per cent. In Virginia the monthly reports of condition were respectively, 79, 72, 55, and 65, and the product in November averaged 58 per cent. In November our summary said, "The reduced yield of tobacco was sufficiently foreshadowed in our previous monthly reports; all the large tobacco States show results indicating a disastrous year to the tobacco interest;" and a special report, from a careful census of the principal counties, was promised, which is herein presented. It will include the quantity grown, the acreage, the price and total value, the quality, kinds, and uses, mode of culture and curing, and other information.

There are 211 counties in the United States producing more than 100,000 pounds each; and all others combined contributed but 12,000,000 pounds, or little more than 5 per cent. of the crop. Of these 211, there

are 154 representing in the census 71 per cent. of the total production that appear in our present exhibit. These counties made a total of 186,276,726 pounds in 1869, and now return 99,805,602 pounds. In the census year 49 counties in Kentucky, which now report 19,306,835, produced 84,593,456 pounds. In 26 counties of Virginia, the decline is from 25,000,000 to 19,000,000, while the same counties last year yielded 33,000,000. In Ohio 10 counties give little more than half the census record, which was very incomplete. The estimate for Montgomery County is 2,500,000 pounds, less than a third of its usual product. Seven counties in Maryland that produced four-fifths of the crop of 1869, yield three-fourths as much as in that year, and about six-tenths as much as last year. In Tennessee the business has been nearly abandoned, 9 counties declining in production from ten millions in 1873 to one and a half in 1874. The decline has been small in most of the Connecticut Valley counties; in Hartford County the estimate was six millons in 1873, and six and a half in 1874. The reduction is large in Onondaga, New York, and Lancaster, Pennsylvania. The summary, by States, of the present returns is as follows:

States.	Number of counties reporting.	Pounds, census of 1870.	Pounds, estimated for 1874.	Number of acres, 1874.	Price per pound, 1874.	Value, 1874.
					Cents.	
New Hampshire	1	151,189	173,300	130	20	$34,660
Massachusetts	1	1,095,423	616,000	385	28	172,480
Connecticut	4	7,513,739	8,350,000	6,475	32.3	2,696,500
New York	2	1,408,143	789,670	1,215	13.1	104,054
Pennsylvania	3	3,371,764	9,877,400	8,427	15	1,489,410
Maryland	7	12,536,259	9,568,958	15,553	9.2	886,943
Virginia	26	25,131,788	19,474,980	35,180	12.1	2,224,506
North Carolina	7	6,859,716	4,260,375	12,737	16.3	696,875
Florida	1	118,799	200,000	300	22	44,000
Tennessee	9	10,666,858	1,450,000	2,402	9.7	140,775
West Virginia	5	976,694	488,308	600	14.1	69,313
Kentucky	49	84,593,456	19,306,835	39,025	12.4	2,383,948
Ohio	10	14,662,840	7,680,333	10,638	8.3	404,781
Indiana	3	3,603,043	3,795,000	8,225	9.4	357,150
Illinois	8	3,285,644	1,782,500	1,382	10.9	195,900
Wisconsin	2	875,076	775,000	760	7.5	58,125
Missouri	16	9,426,295	11,216,943	13,843	11.1	1,241,971
Total	154	186,276,726	99,805,602	148,277	.....	13,201,391

The details of the above statement, by counties, are as follows:

Counties.	Pounds, census of 1870.	Pounds, estimated for 1874.	Number of acres, 1874.	Price per pound, 1874.	Value, 1874.
NEW HAMPSHIRE.				*Cents.*	
Cheshire	151,189	173,300	130	20	$34,660
MASSACHUSETTS.					
Hampden	1,095,423	616,000	385	28	172,480
CONNECTICUT.					
Hartford	5,830,209	6,500,000	5,000	35	2,275,000
Litchfield	1,048,569	1,200,000	1,000	20	240,000
New Haven	103,562	150,000	125	21	31,500
Tolland	531,399	500,000	350	30	150,000
Total	7,513,739	8,350,000	6,475	32.3	2,696,500

Counties.	Pounds, census of 1870.	Pounds, estimated for 1874.	Number of acres, 1874.	Price per pound, 1874.	Value, 1874.
NEW YORK.				*Cents.*	
Onondaga	1,257,603	650,000	800	13	$84,500
Steuben	150,540	139,670	415	12.2	19,554
Total	1,408,143	789,670	1,215	13.1	104,054
PENNSYLVANIA.					
Bucks	151,372	475,000	475	19	90,250
Lancaster	2,692,584	9,122,400	7,602	15	1,368,360
York	527,808	280,000	350	11	30,800
Total	3,371,764	9,877,400	8,427	15	1,489,410
MARYLAND.					
Calvert	3,158,200	3,150,000	5,250	8.5	267,750
Charles	2,102,739	1,500,000	2,500	8.5	127,500
Frederick	274,369	297,500	.....	13.5	40,162
Howard	182,980	100,000	200	12	12,000
Montgomery	630,000	260,000	450	10	26,000
Prince George's	3,665,054	3,000,000	4,000	10	300,000
Saint Mary's	2,522,917	1,261,458	3,153	9	113,531
Total	12,536,259	9,568,958	15,553	9.2	886,943
VIRGINIA.					
Amelia	1,037,721	340,000	650	11	37,400
Appomattox	656,944	400,000	550	15	60,000
Botetourt	196,459	750,000	1,500	12	90,000
Buckingham	809,937	455,814	800	12	54,698
Campbell	1,761,901	1,451,040	2,073	9.5	137,849
Caroline	417,848	200,000	250	10	20,000
Chesterfield	194,510	100,000	400	11	11,000
Dinwiddie	844,504	330,000	660	14	46,200
Floyd	157,467	300,000	800	20	60,000
Fluvanna	894,023	800,000	1,000	12	96,000
Franklin	1,696,549	1,560,000	3,000	7	105,000
Hanover	439,434	109,858	.....	11	12,084
Henry	1,129,617	1,250,000	2,500	22.5	281,250
Louisa	930,226	400,000	500	10	40,000
Lunenburgh	963,673	641,000	1,600	10	64,100
Mecklenburgh	2,166,628	2,000,000	4,000	12	240,000
Montgomery	204,747	752,000	1,250	25	188,000
Nelson	1,199,182	800,000	1,000	12	96,000
Pittsylvania	4,282,511	4,200,000	10,000	9.5	399,000
Powhatan	541,430	120,000	130	14	16,800
Prince Edward	960,700	600,000	1,500	12.5	75,000
Rockbridge	186,469	150,000	300	7.5	11,250
Spottsylvania	132,502	75,000	150	16	12,000
Cumberland	956,855	425,268	567	.....	.....
Goochland	405,215	525,000	.....	13.5	70,875
Charlotte	1,964,736	800,000	.....	.....	.....
Total	25,131,788	19,474,980	35,180	12.1	2,224,506
NORTH CAROLINA.					
Alamance	155,570	450,000	1,200	25	112,500
Caswell	2,262,053	1,000,000	3,000	20	200,000
Person	1,227,150	750,000	1,702	20	225,000
Rockingham	1,441,971	1,500,000	5,000	20	30,000
Warren	751,045	30,000	500	11	3,300
Stokes	844,145	400,000	1,000	25	100,000
Guilford	177,782	130,375	335	20	26,075
Total	6,859,716	4,260,375	12,737	16.3	696,875
FLORIDA.					
Gadsden	118,799	200,000	300	22	44,000
TENNESSEE.					
Dickson	462,130	50,000	100	10	5,000
Dyer	412,440	25,000	45	14	3,500
Macon	950,768	50,000	100	10	5,000
Obion	645,937	40,000	50	15	7,500
Robertson	2,103,322	80,000	200	13	10,400
Smith	2,250,202	600,000	757	10	60,000
Sumner	909,568	175,000	300	6.5	11,375
Weakley	2,599,590	250,000	600	8	20,000
Wilson	332,901	180,000	250	10	18,000
Total	10,666,858	1,450,000	2,402	9.7	140,775

Counties.	Pounds, census of 1870.	Pounds, estimated for 1874.	Number of acres, 1874.	Price per pound, 1874.	Value, 1874.
				Cents.	
WEST VIRGINIA.					
Cabell	135,410	10,000	20	15	$1,500
Fayette	188,165	125,000	200	10	12,500
Kanawha	412,469	183,308	130	12.5	22,913
Mercer	117,429	130,000	170	20	26,000
Monroe	123,221	40,000	80	16	6,400
Total	976,694	488,308	600	14.1	69,313
KENTUCKY.					
Adair	1,231,665	150,000	250	7	10,500
Ballard	2,863,455	984,485	700	14	137,828
Boone	279,740	150,000	200	8	12,000
Bracken	4,188,039	600,000	1,350	17	102,000
Breckinridge	3,338,471	800,000	1,100	13	104,000
Barren	2,473,939	900,000	1,285	12	108,000
Butler	1,008,582	100,000	225	10	10,000
Callaway	1,924,502	100,000	150	10	10,000
Carroll	669,875	150,000	175	12	18,000
Christian	5,384,137	1,500,000	3,000	14	210,000
Clinton	117,238	125,000	250	10	12,500
Cumberland	1,304,366	100,000	125	10	10,000
Daviess	6,273,067	2,500,000	.....	12	300,000
Edmonson	414,840	50,000	100	10	5,000
Fleming	305,954	140,000	200	15	21,000
Gallatin	157,050	100,000	130	16	16,000
Grant	164,295	200,000	275	15	30,000
Grayson	859,760	275,000	550	9	24,750
Graves	4,474,195	1,220,000	.....	13.5	164,700
Green	1,375,091	211,250	245	10	21,250
Hardin	284,178	20,000	50	12	2,400
Harrison	281,704	166,500	383	12.7	21,145
Hart	2,315,212	250,000	425	10	25,000
Hickman	570,287	100,000	150	12.5	12,500
Hopkins	3,012,053	80,000	2,666	8	6,400
Kenton	360,983	250,000	500	16	40,000
La Rue	368,106	160,000	350	13.5	21,600
Livingston	1,086,578	100,000	125	11	11,000
Logan	2,707,571	485,000	970	11.5	55,775
Marion	132,293	9,600	20	12.5	1,200
Marshall	1,416,282	40,000	60	11	4,400
McLean	2,262,037	400,000	1,000	11	44,000
Meade	539,000	60,000	75	11	6,600
Metcalf	1,310,381	100,000	200	11	11,000
Monroe	674,696	100,000	140	9	9,000
Muhlenburgh	1,821,988	200,000	300	6	12,000
Ohio	3,392,633	225,000	450	12	27,000
Owen	2,890,670	800,000	1,300	17	136,000
Pendleton	1,651,593	800,000	1,600	15	120,000
Robertson	1,648,201	100,000	125	.....	.....
Shelby	240,435	100,000	125	12.5	12,500
Simpson	1,072,401	60,000	100	13	7,800
Taylor	1,209,830	150,000	300	7	10,500
Todd	2,620,193	500,000	1,000	15	75,000
Trigg	3,614,363	500,000	700	12	60,000
Trimble	658,465	200,000	200	12	24,000
Union	2,096,260	2,000,000	5,000	11	220,000
Warren	2,035,159	495,000	618	8	39,600
Webster	3,511,649	500,000	833	8	40,000
Total	84,593,456	19,306,835	30,025	12.4	2,383,948
OHIO.					
Adams	102,473	18,000	120	19	3,420
Athens	207,839	191,693	272	12.5	23,961
Belmont	1,480,478	2,360,140	2,411	.....	.....
Brown	2,681,743	445,500	495	.....	.....
Guernsey	474,178	150,000	250	8	12,000
Monroe	2,845,525	500,000	1,000	9	45,000
Montgomery	3,963,183	2,500,000	4,000	8	200,000
Morgan	486,125	275,000	550	8	22,000
Noble	2,304,557	1,200,000	1,500	8	96,000
Vinton	110,739	40,000	40	6	2,400
Total	14,662,840	7,680,333	10,638	8.3	404,781

Counties.	Pounds, census of 1870.	Pounds, estimated for 1874.	Number of acres, 1874.	Price per pound, 1874.	Value, 1874.
INDIANA.				*Cents.*	
Dubois	358,948	1,100,000	1,400	8.5	$93,500
Perry	224,125	195,000	325	7	13,650
Spencer	3,019,970	2,500,000	6,500	10	250,000
Total	3,603,043	3,795,000	8,225	9.4	357,150
ILLINOIS.					
Edwards	133,150	100,000	130	11	11,000
Franklin	387,382	200,000	230	12	24,000
Hamilton	471,860	400,000	.....	11	44,000
Johnson	307,013	150,000	187	9	13,500
Pulaski	157,000	32,500	65	12	3,900
Wayne	541,605	100,000	250	12.5	12,500
White	135,045	100,000	120	10	10,000
Williamson	1,152,589	700,000	400	11	77,000
Total	3,285,644	1,782,500	1,382	10.9	195,900
WISCONSIN.					
Dane	229,568	75,000	60	7.5	5,625
Rock	645,508	700,000	700	7.5	52,500
Total	875,076	775,000	760	7.5	58,125
MISSOURI.					
Boone	149,634	75,000	135	.....	.....
Callaway	938,228	1,238,200	1,250	12.5	154,775
Chariton	2,993,981	3,500,000	3,000	10.5	367,500
Franklin	783,270	401,270	213	12.5	50,159
Howard	788,132	1,000,000	2,000	9	90,000
La Fayette	113,735	35,000	50	9.5	3,325
Lincoln	891,727	360,000	400	15	54,000
Macon	355,767	350,000	3,500	10	35,000
Monroe	187,091	500,000	1,000	9	45,000
Osage	119,617	150,000	200	10	15,000
Pike	632,552	2,000,000	.....	14	280,000
Randolph	873,776	1,000,000	1,400	8.5	85,000
Ray	190,335	280,000	400	9	25,200
Saint Charles	146,754	73,473	.....	9	6,612
Stoddard	118,534	54,000	45	10	5,400
Webster	143,162	200,000	250	12.5	25,000
Total	9,426,295	11,216,943	13,843	11.1	1,241,971

Twenty-five years ago Virginia stood at the head of tobacco-growing States. It retained its position ten years later, when the crop had doubled. Since 1860 it has given place to Kentucky, which is credited by the last census with 105,000,000 pounds, and doubtless actually produced 140,000,000 in the census year. Three Atlantic States, with four Western, at one time monopolized the production—how fully may be seen by the following table:

States.	1850.	1860.	1870.	1874.
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*
Virginia	56,803,227	123,967,757	37,086,364	35,000,000
Kentucky	55,501,196	108,102,433	105,305,869	34,500,000
Tennessee	20,148,932	38,931,277	21,465,452	5,780,000
Maryland	21,407,497	38,410,965	15,785,339	16,500,000
North Carolina	11,984,786	32,853,250	11,150,087	8,500,000
Ohio	10,454,449	25,528,972	18,741,973	13,000,000
Missouri	17,113,784	25,086,196	12,320,483	13,860,000
Total	193,413,871	392,880,850	221,855,567	127,140,000
Other States	6,338,784	41,328,611	40,879,774	51,215,000
Grand total	199,752,655	434,209,461	262,735,341	178,355,000

Combining the county returns in the foregoing tables with various data from other tobacco-growing areas, and carefully estimating for the fragments of areas unreported, the following statement is presented as the estimated tobacco-production of 1874, the acreage on which it was grown, and the value of the crop in the hands of the producer:

States.	Pounds.	Acres.	Value.
New Hampshire	180,000	141	$36,000
Vermont	105,000	99	21,000
Massachusetts	4,920,000	3,393	1,377,600
Connecticut	9,030,000	7,224	2,889,600
New York	1,593,000	2,451	207,090
Pennsylvania	10,500,000	9,130	1,575,000
Maryland	16,500,000	27,049	1,567,500
Virginia	35,000,000	63,636	4,200,000
North Carolina	8,500,000	25,757	1,360,000
South Carolina	45,000	100	6,750
Georgia	291,000	502	37,830
Florida	216,000	327	47,520
Alabama	166,000	302	33,200
Mississippi	80,000	133	16,800
Texas	141,000	188	31,725
Arkansas	708,000	1,348	106,200
Tennessee	5,780,000	9,633	578,000
West Virginia	1,690,000	2,224	236,600
Kentucky	34,500,000	53,906	4,278,000
Ohio	13,000,000	18,055	1,170,000
Indiana	12,000,000	26,086	1,128,000
Illinois	7,000,000	8,974	735,000
Wisconsin	2,250,000	2,250	168,750
Missouri	13,860,000	18,237	1,524,600
Kansas	300,000	517	30,000
Total	178,355,000	281,662	$23,362,765

QUALITY.

Dry weather cured the crop of the northern portion of the Connecticut River in the field, and left it brittle. In the Hartford district there is loss of quality from drought. Part of the crop of Hampden, Mass., is of extra quality, especially where it was matured early and was warehoused in good order. In the New Haven district quality is fine, but color various; if this unevenness of color is lost in the sweating process it will be the best crop raised since 1871. In Tolland there was wet weather during the culture, and very dry weather during curing, which proved unfavorable to the best quality. Quality is not superior in Onondaga County, New York, in consequence of wet and cold weather; it is only medium in Steuben, dry weather affecting the leaves somewhat, many of which are injured by worm-punctures. In Pennsylvania the crop is inferior to that of 1873; in Lancaster it grew slowly, and encountered heavy rains when nearly ripe; in Bucks dry weather prevented the maturing of fine leaves, and caused them to dry too rapidly, and contract when housed.

The quality of the Maryland crop is nearly everywhere reported lower than in recent years. In Prince George's it is deemed better than last year, on account of being handled at the proper time, and from favorable curing-weather. It was late in growth and of a dark color in Saint Mary's. Only 60 per cent. is of average quality in Montgomery, from injury by the fly, and the drought of June and July. In Howard there is much immature frosted tobacco. It is thick-leaved, small, and dark-colored in Frederick. Lateness of growth and early frosts were injurious in almost every portion of the State. Similar causes affected a portion of the Virginia crop; that planted before the 1st of June generally was very good; that planted later suffered from drought, and was cut

when immature to avoid frost. While a majority of the counties return inferior quality, many others with a smaller area to cure or a more southern location claim a superior crop, as Floyd, Fluvanna, Henry, Patrick, Pawhatan, and others. Counties in North Carolina, with few exceptions, have crops of more than average quality. The fly worked among the young plants to some extent, and drought, a severe storm in September, and frost wrought further injury.

Qualityis rather below average in Tennessee, owing to a wet spring, drought, and early cutting to escape frost. In Robertson about half is good; a fourth was cut before it was ripe, and the remaining fourth was frosted in the field. In Mercer, West Virginia, superiority in quality was obtained by favorable weather for maturing and curing. The crop was good in Fayette, and fair in Kanawha, but very poor in Cabell, from early drought. The quality is generally inferior in Kentucky, from the destruction of young plants by the fly, injury from drought, causing imperfect growth and late maturing; so that much was either cut immature or frosted in the field. In some places the early-planted was good; in Clinton, one-fourth good, one-fourth medium, and one-half poor. Among the exceptions are Hardin and Meade, above average in color, but light in weight; Hickman, very good; Larue and Clinton, early planted, above average; Graves, good; Pendleton, good fiber, well colored; Owen, above average; Simpson, fine; Todd and Trigg, one-half excellent, the remainder frosted.

Counties in Ohio return comparatively poor quality. Montgomery had one of the poorest crops ever raised. A small insect destroyed a large portion of the plants in Vinton. Fifty per cent. deterioration is returned from Monroe. Late planting and subsequent drought were prominent causes of poor quality. In Washington the crop is claimed to be good. In Indiana and Illinois the quality is quite uniformly good; it was in some counties more carefully cultivated and handled than usual. Drought injured the Wisconsin crop. Most of the Missouri counties make favorable report of quality, many indicating an improvement over last year, and some admitting injury from drought.

VARIETIES AND USES.

Few, if any, plants are so modified by peculiarities of the soil on which it is grown, and by circumstances of fertilization and culture, as tobacco. Whether the crop is worth in market five cents or fifty per pound depends more upon these points than upon the variety grown. And yet there are many varieties, showing the most marked points of difference. Fashion, as to color and other points, contributes to widen the range of prices.

The Connecticut seed-leaf, used for wrappers for Havana fillers, and lower grades of fillers, or binders to cheap cigars known as seed-cigars, is cultivated almost exclusively in New England, *i. e.*, the Connecticut Valley, from Cheshire County, in New Hampshire, to the sea. The Housatonic Valley, in Connecticut, has recently made this crop somewhat prominent; and, by a superior system of warehouse classification, it realizes returns almost equal to those secured on the Connecticut. In the town of Westfield, in Hampden, Massachusetts, the Havana seed is grown, said to be a cross of the Connecticut with Havana; a plant of firm leaf, better flavor, and greater value for wrappers of fine cigars than the broad-leaved common variety. In the vicinity of Hartford are varieties bearing the names, Connecticut seed-leaf, broad seed-leaf, Belknap, Puritan, and Ohio broad-leaf.

The Connecticut seed-leaf is the kind grown in New York, almost exclusively in Onondaga, Chemung, and Steuben. The best quality is used for cigar-wrappers; and the coarser and imperfect stock is manufactured into smoking or chewing, and some of the refuse is ground into snuffs. A cross from Havana seed is mainly grown in Bucks County, Pennsylvania, much resembling imported Cuba tobacco.

The Maryland tobacco is of two principal varieties, the broad-leaf and the narrow-leaf. The former commands a higher price; the latter yields a larger quantity. Much of it is exported; a large order is usually filled for the French government. It sells at a moderate price, has no peculiar value for wrappers, and is used for cigar-fillings, ordinary snuffs, twist and plug chewing, and for manufactured smoking brands. In Montgomery County a kind known as Bay tobacco is grown. The Big Pryor variety is deemed the best in Botetourt County, Virginia; the Blue Pryor is popular in Amelia. The White-stem, a dark-colored shipping tobacco, is quite extensively grown in strong, heavy lands, finding a good market in England. The Cumberland correspondent claims that as the banner county for shipping and stemming tobacco. A fine grade of tobacco is made from Orinoco seed. The Frederick, a vigorous grower, is cured to a dark "nutmeg color," and is principally shipped to Europe. The crop of Montgomery has a large leaf which cures bright, and is useful for wrappers, with careful assorting. The red lands generally produce too coarse and strong a quality for cigars or fine chewing brands, but suitable for shipping. Several kinds are grown in Henry, but growers aim to produce a bright, yellow leaf, suitable for plug chewing-tobacco. The new lands, and old fields on which fertilizers are used, yield a light yellow, manufacturing grade.

The soil of several counties in North Carolina, near the Virginia line, is peculiarly adapted to the production of light-colored and high-priced wrappers. Person, Caswell, and Granville claim to "surpass any other portion of the United States in adaptation to the growth of the first and most remunerative grades of tobacco." The average price of the last crop in Person County is placed at 30 cents, of the Gooch, White-stem, Yellow Pryor, Big Orinoco, and Little Orinoco varieties. The first is distinguished by fine texture and small fiber, and is successfully grown on light, sandy soil, almost valueless for grain or grass, and brings from 40 cents to $2 per pound for wrappers. The White-stem is second in quality, Yellow Pryor third, and Big Orinoco fourth. The respective area of each in cultivation widens in the order named, except that the Pryor's liability to injury from frost is driving it from the field. All these are usually coal-cured and used for wrappers. The Little Orinoco is coarse-grained, grown on rich soils for weight rather than quality, not adapted to yellowing, and air-cured or dried with wood fires, is used for fillers, and sells at 15 to 25 cents. It is reddish brown in color; sometimes nearly black. In Caswell the broad-leaf Orinoco is most cultivated, though some prefer the Yellow Pryor variety, less in weight and richness, but of finer texture. Light lemon-color commands the highest price. The White stem and Orinoco are mainly cultivated in Stokes.

Gadsden County, Florida, has produced for forty years a variety grown from seed obtained in Cuba, having a small, narrow leaf, and possessing to a remarkable degree the peculiar aroma and delicate fragrance so highly prized in the Havana cigar. Since the advent of German buyers an article was introduced which produces the "Florida wrapper," and is now the main growth. Its leaves are sometimes three feet in length and twenty inches in breadth, of a fine silky texture, admirably

adapted to use as wrappers, the coarser leaves being used very acceptably as fillers. Another variety, medium in size, introduced since the war, highly aromatic, even somewhat pungent, makes a strong cigar.

There are different varieties in Tennessee, as the White Stem, Big Stem, Big and Little Frederick, Blue and Yellow Pryor, Orinoco, yet when grown several years they appear to assimilate in quality and appearance. Much of it is cured a red or mahogany color, and finds a large sale in European markets.

Kentucky, the tobacco-field of America, has many varieties. That grown in Christian, Trigg, Todd, Logan, and in Stewart, Montgomery, and Robinson, in Tennessee—known to the trade as the Clarksville district, though Hopkinsville is now a rival point for the traffic—has a heavy body and is well adapted to the export trade; it is largely used in Germany, Austria, and the north of Europe, though a portion is sent to Mexico and the coast of Africa. It has no competition in the West, and is only approximated on the manured lands of Virginia. The soil on which it is grown is limestone, with a deep-red clay subsoil. Its peculiar mode of curing contributes largely to its recognized characteristics. It is cured in close barns in the course of two or three days' heavy firing, which gives greater body than the air-cure. The White Burley is a favorite in many counties, among which are Bracken, Fleming, Pendleton, Grant, Shelby, Trimble, Kenton, and others. This is cured of a bright-yellow color, and is used for cutting into "fine-cut," and sometimes for wrappers. Old land, well manured and cultivated, will yield a heavy shipping tobacco from almost any variety; and a red or black oak soil will make a bright wrapper from the same varieties. Fleming County is working exclusively for the cutting trade. Good chewing grades are made from the Yellow Pryor and the Long Green in Hardin; and the Pryor is also the favorite variety in Hart, in Muhlenburgh, and in Adair. The Little Frederick is most grown in Clinton. The one-sucker variety, producing only one sucker to the leaf, is favorably regarded in Adair, Clinton, Hart, and other counties. Cumberland produced good shipping leaf; Hickman grows shipping grades used largely in plug-tobacco; that of Hopkins is manufacturing and shipping, and about one-fourth of the crop is made into strips; and shipping leaf is prominent in Logan, sought by English and French buyers, for wrapping and manufacturing purposes. There are many other names of assumed varieties, but the above are among the best known.

The leading variety in Montgomery, Ohio, the Baltimore Cuba, is from seed sent out by this Department. It has a long and broad leaf, and when properly cured makes good wrappers. "This seed has been worth millions to the county," says our correspondent. The white tobacco, grown in Adams County, is used for wrappers and fine-cut. The Monroe crop is similar to the Maryland tobacco, and goes to Europe for smoking-tobacco. It is used to some extent in the manufacture of cigars. The Connecticut seed-leaf and the Kentucky are the best varieties in Vinton. In Spencer, Indiana, the Pryor is grown for fillers and black wrappers, and the White Stem and Twist-bud are shipping leaf sorts. The White Burley and Yellow Pryor are favorite varieties in Edmunds, Illinois; in Johnson, three kinds are grown, the Pryor, the Big Shoe-string, and Big White Stem, the two latter yielding most; that grown in Southern Illinois is mainly used for fillers and wrappers and in the cutting-trade. The Crown-leaf, in Rock County, Wisconsin, is exported, though choice lots are taken at home for wrappers and binders for cigars. The Yellow Pryor appears to be largely grown in Missouri for the shipping-trade. The Little Frederick, Twist-bud, Long Green, and Fine Small are other

desirable varieties, the latter liked by many experienced and careful growers. That grown in Boone County for exportation ranks high as a chewing-tobacco.

ROTATION.

A sort of irregular rotation is to some extent practiced in the Connecticut Valley. In the vicinity of Hartford it is customary to take off from one to three crops of tobacco, then a hay or grain crop, followed by grass for several years. Lower down the valley rotation is observed to some extent, and the general testimony accords therefor better returns. Our Hampden (Massachusetts) authority deems the quality better if repeated crops are taken.

In the Onondaga (New York) district a clover-sod, with a good spring growth, and fifty to sixty loads of manure per acre, all well turned under and reduced to a fine tilth, is the favorite soil for tobacco-planting. Wheat is the next crop. Sometimes crops of tobacco are repeated, with eighty to one hundred loads of manure per acre, but more than two or three crops are indicative of bad farming. In Steuben the preferred order is clover, corn, tobacco. In Lancaster, which county produces a large proportion of the crop of Pennsylvania, tobacco is preceded by corn and followed by wheat. The rotation in York is similar. Quite uniform Maryland practice is to follow tobacco with wheat. In Calvert County it is grown every third year, the crops being clover, tobacco, wheat. It is preferred in Charles to have it follow corn rather than "a fresh fallow." New land in Frederick, after a crop of tobacco, is sown to wheat, then grass. Three crops are sometimes taken from new land in Montgomery, but further continuous cropping results in larger plants of inferior quality. The regular three-year rotation is generally practiced in Prince George's, though some planters prefer the four or five year plans. Where new land is taken for tobacco in Virginia, two or three consecutive crops are usually taken, followed by wheat, afterward clover or grass. In old ground the common rotation is clover, tobacco, wheat; in some counties wheat precedes tobacco; where only two fields are used, which get all the manure from stables and cattle-pens, the crop is only alternated with wheat. Corn comes in between tobacco and wheat in Patrick. In some counties a year or two of fallow comes after wheat; in other counties a similar rest follows two or three consecutive crops of tobacco on new land. New land is preferred in North Carolina, and soils peculiarly desirable for particular kinds and qualities of tobacco are selected with great care. No attempt at rotation is reported from Florida. A systematic course of cropping is by no means the rule in Tennessee. Wheat is most frequently grown after tobacco, but corn or other crops sometimes occur in succession. On new land wheat is sometimes grown between two crops of tobacco, followed by a similar period in corn, wheat, and clover. Old ground is manured for the tobacco-crop. Fertilizing for tobacco is virtually unknown in West Virginia. Wheat, as elsewhere, is usually adopted for the succession, followed by clover, on the best-managed lands; but the more careless farmers follow with promiscuous cropping until the land is exhausted and turned out to grow mullein, pennyroyal, and rag-weed. Some sort of rotation is deemed a necessity in Kentucky, though some counties do not practice it; it is held that to grow the crop "on the same ground two or three years in succession would everlastingly ruin it;" also that it cannot be successfully grown on timothy-sod; but that it may be cultivated in successive crops by sowing rye and turning under in spring when a foot high. The preferred course appears to be tobacco, wheat, clover; if longer, two years

in clover. In Ohio several crops are in many cases grown in succession; sometimes two of tobacco, two of corn, and one of wheat, and then grass or tobacco again; in other places tobacco, wheat, clover, as in other tobacco regions. Farther west, where new lands are abundant, tobacco-growing is either confined to such lands, or alternated with wheat, with little thought of any regular course of rotation.

CULTURE AND CURING.

A comparison of the local modes of culture and curing reveals great differences in the *modus operandi* of tobacco-husbandry.

The cultivation in Cheshire County, New Hampshire, substantially the northern limit of Connecticut Valley tobacco-growing, is essentially the same as in Massachusetts and Connecticut. The soil is a warm, sandy loam, manured with ten or twelve cords of stable-manure and two to five hundred pounds of guano per acre, harrowed in. The surface is ridged up to bring the manure around the plant. Sometimes the ground is lightly marked with the plow, and guano or superphosphate of lime placed in the hill. When the plants are set they are mulched with straw or hay to prevent their withering. In Hampden, Massachusett, ten cords of good manure, horse-manure preferred, are applied. At the time of transplanting, which occurs from the 5th to the 25th of June, the land is plowed, and then a light furrow is cut, sowed with 300 pounds of guano or superphosphate, and covered with ridges, leaving the rows somewhat elevated. The Havana plants are set 18 inches by 3 feet, the seed-leaf 2 feet by 3. The yield of the former does not equal that of the common sort. The seed is usually sown in April in Connecticut, in a carefully-prepared seed-bed liberally manured with a rich compost or concentrated fertilizer. Horse-manure for the field-culture is obtained as far as possible, and supplemented with any available well-decomposed farm-yard manures, and also with Peruvian or fish guano, superphosphates, wood-ashes, bone-dust, tobacco-stems, and other fertilizers. The ground is plowed and harrowed sufficiently to pulverize and mix the fertilizers. The plants are set in Hartford County from July 1 to July 10, in rows 3½ feet apart, and from 18 to 25 inches in the row. The best cultivation is given; the seed-blossoms and all suckers are broken off; the plants are cut in August or September and left on the ground to wilt; then bundles of five to seven plants are strung on a lath, four feet long, and hung in the curing-house in tiers.

The district known as the Housatonic Valley comprises all of Litchfield County, five towns in Fairfield, two or three in Berkshire, and one in New Haven. Low prices have reduced the acreage to a lower figure than for eight years past, and the product is estimated at 3,500 cases, of which Litchfield produced 3,000 on about 1,000 acres. This district has had considerable experience with special fertilizers, and the conclusion is reached that they aid the growth of the plant while injuring its quality. At the present time most of the crop is grown with barn-yard manure, yielding a product of better color and texture, and one that comes out of the sweat better than that made with such special fertilizers. In New Haven the main resource for fertilizers beyond the common use of farm-yard manure, is a double-refined poudrette. In Tolland the liberal use of horse-manure, say eight to ten cords with 350 pounds of guano per acre, is deemed sufficient to keep up soil-fertility without rotation.

The main reliance in Onondaga, New York, is upon clover-sod and farm-yard manure, though various kinds of commercial fertilizers have

been used. Our correspondent says, "three acres of tobacco will require the manure accumulated from 100 to 200 acres." In Bucks County, Pennsylvania, the tobacco section is Falls Township, along the Delaware River, where the surface is nearly level, and the soil a rich, dark, sandy loam. During the winter 35 loads of manure per acre, brought in boats from Philadelphia at $1.25 per load, are spread upon the fields, and plowed under at a depth of 4 to 6 inches as soon as frost is out, and left till about May 20, when the soil is well pulverized and worked into hills 3 feet apart each way. A compost of well-rotted manure is applied in the hill. Fertilizers are believed to injure the burning qualities of the leaf, and their use has been discontinued. The culture is similar to that of cabbage, until the leaves are 6 inches in width, after which the fields are gone through two or three times per week in search of worms, which do not increase in abundance from year to year. The crop should be cut in twelve weeks from planting. In Lancaster, the largest tobacco-county in Pennsylvania, plants are set 20 inches apart in the rows, which are three and a half feet apart. The culture is about the same as for corn; the soil is kept well pulverized and free from weeds. Farm-yard manure is the main fertilizer, which is so extensively used that other crops suffer from lack of it.

In Maryland, seed is germinated from January 1 to March 15, in a well-prepared bed, enriched with barn-yard manure and Peruvian guano. As the plants attain the size of a man's hand they are transplanted when the earth is moist from rain. The distance apart varies somewhat, 2½ feet each way being the usual distance in several counties; in some cases 3 by 2 feet; in Prince George's 3 by 3 feet. In Calvert the land is well fertilized with farm-yard manure, guano, and superphosphate. When the plants begin to grow, the crust around them, with the starting grass, is scooped away with the hoe; this process is called weeding. Subsequent cultivation consists in stirring the soil every eight or ten days with a one-horse cultivator, as long as it can be done without injury to the leaves. When the blossoms appear the top is broken off, and the plant is allowed to stand until mature, when it is cut and hung on poles in the barn to cure. Suckers are broken off and worms killed during the growth. It is cut between August 20 and October 20, the first cut being the best. In Prince George's, growers prefer to plow both in fall and spring. They want very rich beds to start the plants, but do not care for heavy fertilizing of fields. They use guano, Turner's Excelsior, and the Old Dominion fertilizer. In Saint Mary's 20 to 30 loads of manure with 300 pounds of superphosphate per acre are spread in drills.

The housing and curing is thus reported in Calvert: When the leaves are sufficiently mature, and soft from moist weather, they are stripped from the stalk and tied up in small bundles, care being taken to keep the several qualities separate. When in proper condition these bundles are packed in hogsheads for market. Nearly all the crop is air-cured; a few planters use the curing apparatus of Bibb & Co., and by proper care and attention produce a superior article. In Montgomery, when cut it is hauled to the house and hung on sticks 4½ feet long. On one end of these sticks is an iron spear, on the point of which the plants are pressed, while the other end is made fast in the house, and thus about ten plants are strung upon each for curing, the sticks being hung 10 to 12 inches apart upon poles. Fires are kindled beneath the tobacco, which is hung 10 feet above. The curing process requires great experience to secure the desirable color, and caution to prevent the burning of house and tobacco together. The fires are kept up till the tobacco is

thoroughly dry. It is stripped from the stalks in damp weather and assorted, usually making four grades, yellow, spangled or red, ground leaf, and tips.

The following extracts from Virginia returns give a variety of information on culture, fertilizers, and curing:

Amelia: Land is sometimes, but not often, checked, or laid off both ways. When not checked the beds are thrown up with two furrows of a double-turning plow, and usually about 250 pounds applied to the acre of some one of the commercial fertilizers in the market; everybody uses different, changes every year, and alternately praises and blames. All agree in this, that there is no money in the use of them, either in the first or any subsequent crop; all agree that the commercial fertilizer has been a curse to the land instead of any benefit. What little stable-manure is raised is spread on the land before marking off. The ridges being up, hands with flat hoes pass along, and at intervals of 2½ to 3 feet strike off the crown of the bed and press it with a short blow from the flat of the hoe. In May or June, so soon as a rain has fallen and a "season has come," the plants are set, one in each hill. They live easily, and if the plants are of tolerable size, and no insects attack them, a stand is secured without difficulty. So soon as the plants give signs of growth in their new places, a 3 or 5 tooth cultivator is lightly run twice between the rows, one tooth being guided as near to the line of plants as possible without covering or disturbing them. Hoes follow, gently breaking the crust around the plant. This is a weeding operation, and if omitted serious consequences sometimes follow. Fields under a nice rain and warm sun become as a carpet in one week, with a grass here called "crab-grass." It incloses the plant and cannot be removed without imminent risk of death to it. This is the critical period, and if passed in safety the planter regards his crop safe. After this, until the 25th of August, the ground is kept stirred with shovel-plows, and kept level, or nearly so. The plants being now up, "primed" and "topped," single-turn plows are put in with four furrows to the row, the soil thrown up as high around each plant as the plow will heave it. By some this is not deemed sufficient, and they cause hoes to pass over the field, drawing the soil still higher up around the stalks of the plant. This sometimes proves of great benefit. The winds of the equinox, accompanied with soaking rains, are prevented from throwing the plants down into the mud. After this last hilling no further cultivation is required. The last of August and the whole of September is spent in quest of worms. *Appomattox:* Cultivated chiefly on newly-opened land without fertilizers, and upon lots with farm-yard manure. *Botetourt:* For old land, deep plowing, hilled with a two-horse plow. Our best farmers say it pays well to use a fertilizer, dropping a small quantity in the hill. *Caroline:* The beds for seed require the same preparation as for cabbage-beds; sow as soon after the 1st of January as the ground is in order; transplant soon as the plants have sufficient roots to sustain them; say the last of May or first of June. When the crop is planted out early, so as to ripen before the frost, and is kept clear of grass and worms, we never fail to make a fair crop. Various fertilizers are used; the one generally preferred is a preparation for tobacco by the Old Dominion Fertilizing Company, Richmond. *Chesterfield:* Land well plowed, stable-manure spread, listed both ways, the hills 3 to 3½ feet apart each way, flattened with the hoe; in season for the plants as early as they are large enough; and "a bud in May is worth a plant in June;" unceasing vigilance required in August and September to prevent its ruin by worms. *Cumberland:* Our leading idea is, to make a *heavy, rich, long* plant, either very early for the stemmers, or later in the season for shipping. The soil and climate are remarkably suited to tobacco, and by heavy manuring and thorough cultivation, 2,000 pounds per acre may be raised. *Dinwiddie:* Plow the land early in winter; in April spread on it all the manure we can find, from stable, farm-yard, and pig-sty, and plow it under; cross-plow and harrow early in May; mark off hills 3½ feet apart and fertilize at the rate of 300 to 500 pounds per acre, by hand or drill; then bed up the land, four furrows together, mark across 3 feet apart and chop and smooth with the hoe midway between the checks. Plant as early as practicable after the 10th of May. When ready for topping the best farmers always prune off the small leaves at the bottom, and break out the bud, leaving 8 to 12 leaves, according to the strength of the land or the time of topping. If planted any time before the 12th of June the farmer can select his own time for cutting, but if later he must beware of frost, or cut his crop green. We use all kinds of fertilizers. Peruvian guano acts better than any other. Our barns are principally built of round logs, the spaces being pointed with clay-mud to make them close. These are considered the best for curing, as they retain the heat better. To make dark stripping, or fillers, we commence firing soon as the tobacco is housed and keep the fires up for three days. It is only rich, strong land that makes this class of tobacco. To make red wrappers or fillers we put the tobacco in the barn, allowing plenty of space, and using no fire except in very damp or rainy weather to prevent mold. This tobacco is grown on almost any variety of soil, the richer the better. To

cure bright wrappers, plant on light-gray soil in fair condition as to fertility. Let the tobacco ripen on the hill before cutting; if the weather permits, scaffold three days in the sunshine, then put in the house and start fires of *charcoal*, slow at first, and gradually increased to the desired temperature; keep the heat at this point until the leaf-stem and stalk are thoroughly dried. Wrappers cured by this process are known as "coal-cured wrappers," and sell for 40 to 120 cents per pound. *Fluvanna*: A great portion of so-called fine, or high-priced, tobacco is grown on light-gray granite land. This is of a light yellow or brown color and rarely grows to a large size. It is often planted on new ground or lands that have grown up in pine. We have also strong, heavy lands on the Rivanna and James rivers which produce a coarser and larger growth of tobacco adapted to what are called strippers, and wanted for the English market. Our most successful tobacco-growers use fertilizers at the rate of 300 or 400 pounds per acre, with or without farm-yard and stable-manure. *Henry:* Old ground not often planted in tobacco more than once; new ground twice. Stone flues are generally used in curing, but charcoal-curing is growing in favor. *Louisa:* The two principal things are, to get the plants out early in May, if possible by the 15th, and to keep the crop well worked. An early stand insures against frost. The most popular fertilizer is that known as "Gilham's;" but it is sold too high, $70 per ton. It is generally sown at the rate of 300 pounds to the acre, and with a small amount of stable-manure acts well. *Lunenburgh:* Land for raising the plants is prepared by thoroughly burning in the latter part of December or early in January; the seed sown soon after. In a favorable season the plants are large enough for transplanting about the first of May. For the crop new or fresh land is usually taken. To insure a good stand, the transplanting must be in wet weather. *Montgomery:* Seed-beds prepared in January and February by burning the ground thoroughly; the earth and ashes well mixed and pulverized; the seed brushed in; the ground tramped or packed, and covered with a thin layer of brush. A wet season is indispensable for setting the plants. When the tobacco attains a sufficient size and number of leaves, the lower leaves are stripped off to the height of about eight inches, and the top taken off, leaving eight to ten leaves growing on the stalk. No fertilizers are here used. *Nelson:* Soon as the plant is large enough it is topped from eight to ten leaves, after taking off three or four of the bottom leaves. Soon as topped it begins to throw out suckers or sprouts just above each leaf. Then comes "the tug of war" to keep the crop clear of suckers and horn-worms. This requires the entire crop to be gone over, and each plant carefully examined about once a week. Fertilizers—such as bone-phosphate, Eureka tobacco-fertilizer—are used to some extent; but stable-manure is universally preferred, as being cheaper and more reliable. The ripe plants are cut out from time to time as they ripen, and are either hung up in the sun for two or three days or carried, as some prefer, immediately to the house. After wilting for several days, and until yellow spots begin to show on the leaves, slow fires are made under the tobacco, and gradually increased until the leaf is entirely cured. *Powhatan:* Stable or cow-yard manure is generally spread on the land, and plowed under in the fall, and the land refallowed in the last of April or first of May. The most popular fertilizers are the Pacific soluble and Gilham's tobacco-fertilizer. *Pittsylvania:* Commercial fertilizers are used. It is supposed that barn-yard manure will not produce as fine quality of tobacco as some artificial fertilizers, though it is acknowledged that most of these are not beneficial to the land. *Prince Edward:* As the season advances the plants are pruned and topped lower, leaving a smaller number of leaves, in order to bring a uniform ripening, as far as practicable. The tobacco is cured by making fires of logs on the floor of the barn, extending across the floor, and four or five feet apart. Peruvian and soluble Pacific guano are most used. Soft gray land is selected for the plant-beds, and prepared for the seed by burning with wood cut for the purpose. *Spottsylvania:* Peruvian guano and other fertilizers are extensively used. Old land manured makes a thicker, heavier leaf than fresh or new land from the woods. New land will produce only three-fourths as much in quantity as old. Not half the tobacco-growers put out a single plant, the fly having destroyed all the plants; but a few made better crops than for years. When the tobacco-bed was made beside a running stream, and a ditch cut around the bed, making it on an island, the plants escaped the fly.

The coal-cured tobacco of North Carolina is cut when it begins to yellow in the hill. In the barn it is first heated gradually until the leaf is nearly cured, when the temperature is raised to 175°, and kept at that point until the cure is complete. Heavy fertilizing is avoided for the bright, charcoal-cured, high-priced grades, to obviate the danger of a dark color and bad bloom from too much sap. On this account it is grown usually on new land, in a light, gray soil, for two consecutive years after the removal of the forest, with a small quantity of fertilizers, if necessary, to give the plants sufficient size. In Warren, seed-beds are

made by burning a moist, rich bottom, dug thoroughly four to five feet deep; the seeds are raked in quite shallow, the bed trampled with the feet, and covered with brush. Well-decomposed stable-manure is freely applied as a top-dressing to the plants, to keep up a high temperature, to hasten growth, and prevent the depredations of the fly; and in some cases, tobacco-stalks, chopped fine, Peruvian guano, hen-manure, and hog-hair. While fertilizers of all sorts are used in field-culture, the main reliance of the best farmers is found in farm-manure and wood-ashes.

In Gadsden, Florida, "the heretofore prevalent opinion that freshly cleared land was essential to the production of a fine quality of tobacco is fast giving way as the result of experience, it being found that successive crops may be grown on the same land without any deterioration in quality, so long as the fertility of the soil is maintained at its original standard and it is kept from being fouled with grass and weeds. Usually upon lands appropriated to tobacco no fertilizers are used for the first and second crops; after that a compost of barn-yard manure and cotton-seed, applied in the hill, is found to give the best results. In cultivation, if a lighter article is desired, the plow may be dispensed with after breaking up the land, and the cultivating done with the hoe. If a thick, heavy leaf is desired, the plant is topped so as to leave twelve or fourteen leaves; if a lighter article, it may grow until it begins to throw out the seed-branches."

Fertilizers are little used in Tennessee; growers in certain counties have scarcely heard of their use. New land is the main reliance. In Smith, where the soil is very fertile, "the practice of the tobacco-raiser has been to begin at the bottom of the hill, clear off a few acres, put them in tobacco from year to year till they become exhausted, and then go up the hill a few acres higher; thus wearing out, as it is called, and too truly, one field after another, until the tobacco-growing part of the county, which is a little more than half its area, is greatly exhausted."

In West Virginia tobacco is grown almost exclusively on recently cleared land, the best crop being obtained the second year, without fertilizers, and a sure crop of wheat follows.

Kentucky, the great tobacco State, is thus reported on the points of culture and curing:

Adair: The best piece of ground the farmer has is set apart for tobacco. It has for a long time been the habit to clear up a piece of woodland and plant it in tobacco until it is too poor to produce that crop; but since most of the good timbered lands have been cleared out, the farmers use manure to produce the crop, generally placing a good spadeful in each hill. If the season is wet, manure increases the crop greatly; but if dry, it burns it, and is not of much use. *Ballard:* No fertilizers used. *Bracken:* We use no fertilizers except well-rotted stable or barn-yard manure, which does well on old land. But new ground is best for tobacco, except for the finer qualities, and to this end farmers are constantly clearing up new land and old thickets and waste-places for fresh soil. *Christian:* The best lands are selected, as tobacco will not grow to any profit on poor land. Manure from the farm, but no fertilizers used. *Clinton:* No fertilizers except stable-manure. *Cumberland:* A large amount of our tobacco is cured without firing. *Edmonson:* Generally new ground is used for tobacco and then planted in corn. *Fleming:* The crop from new land is always superior in quality, and farmers endeavor to clear up a sufficiency for it. *Grant:* No fertilizers used. *Grayson:* My neighbor's ground and mine were about equal in condition, planted about the same time, and the crops grew very much alike until topping, worming, and suckering commenced. Difference in management after that caused the following results: My six acres made 5,600 pounds; his twelve acres, 5,300 pounds. *Graves:* The best tobacco raised on new land. No commercial fertilizers used. *Hardin:* Grown on new ground, without any fertilizer. *Hart:* Generally raised on new ground, and no fertilizer used. Stable-manure is used on thin soil. Let it stand until thoroughly ripe; cut and handle very carefully; house immediately in close barns; place several charcoal fires in each room, and keep them up until the tobacco is perfectly yellow, or, as some term it, white—the

lighter the better. Then increase the fires, and continue them until the stem is perfectly cured and dry. This produces a fine wrapping-leaf, worth 20 cents to $1 per pound. Flues and other modes of curing have been much used, but all growers who have tried it now conclude that the method of charcoal-curing is preferable to all others. *Henry:* The very best lands available are selected; new land preferred; but frequently a series of crops are taken from a newly cleared field before it is too much exhausted to render further cropping in tobacco profitable. Then it is put in small grain and grasses and is soon renewed. No fertilizers are used. *Hickman:* No fertilizers are used, as the ground used for tobacco is mostly fresh land, and seldom planted in tobacco more than two years. *Hopkins:* No fertilizers used. *Larue:* No fertilizer on new ground; on old, stable-manure well rolled. Rarely grown on the same land more than twice. *Livingston:* Mostly grown on new land; when on old, it is enriched by barn-yard manure. *Logan:* Farmers use little or no commercial fertilizers. They select new ground, or the best old they have, and use as much manure in the hill as they can scrape up from the stable, barn-yard, &c. *Mason:* Generally cultivate new ground and use no manure; or if any, stable-manure. *Marshall:* No fertilizer, except barn-yard or stable-manure when raised on land which has been cultivated a few years. Generally raised on fresh land. *McLean:* When old land is used, barn-yard manure is put in the hill or spread; no other fertilizer used. *Meade:* Generally clear up fresh land, but some plant on old by using manure from the stable. *Ohio:* Fertilizers seldom or never used. Fresh ground is generally selected and cultivated in tobacco three years, and then some other crop is cultivated. *Owen:* Fine tobacco must be grown on fresh but thin land; usually an oak-growth is best adapted to it. Nothing is used in the curing except to let it hang under a shed where it is not exposed to sun or rain. No fertilizer used. After being cleared up the ground is usually put in tobacco two or three years, and then not again till after years of rest in grazing. *Pendleton:* Generally cultivated on new ground; no fertilizers used. *Robertson:* Use no fertilizers; either plant on new ground or sod-land. Four-fifths raised is on the former, which will stand two crops in succession. *Shelby:* Generally, though not exclusively, cultivated on new or fresh lands. White-oak lands are the best for a fine article. No fertilizer is used except stable-manure, and that seldom, as its product is a dark, coarse article, not very salable. The plants are not allowed to blossom before they are topped, as recommended by writers on tobacco-culture; it would be too exhausting to the plant; topped as soon as they have as many leaves as will mature before frost. If set out early, twelve to sixteen leaves are left; if late, a less number. If the season is not too wet, fire is seldom used in curing in the tobacco-house. *Simpson:* No fertilizers used except barn-yard manure and wood-ashes. *Todd:* Stable-manure is used on old lands. Follow clover with tobacco when we do not have fresh-cleared lands. *Trigg:* Usually set in ground newly cleared, but latterly farmers are rotating their crops; tobacco first, then wheat with clover and timothy; the third and fourth years the hay is cut and the land pastured, then planted in tobacco again. No fertilizer except stable-manure made on the farm is used. *Warren:* The best land is generally selected for the crop, and barn-yard manure only is used. *Webster:* Well-rotted stable-manure the only fertilizer used. *Boone:* No fertilizers used. *Gallatin:* Generally planted on new land or old soil, and no fertilizers used. Bad peculiarities mostly proceed from bad culture: First, neglecting too long to thoroughly work the plant after setting, causing it to run up in a spindling manner and the main stalk to harden and make no leaf. In such case the best plan is to cut the plant off at the ground, leaving one leaf and bud for a second plant, which, properly cared for, may yet make good tobacco. A second cause is too much wet weather after the plant starts to grow, causing it to "French," as we term it: the leaf thickens, grows very narrow, dagger-shaped, frequently not broader than a case-knife, and often as many as fifty leaves on a plant, all of them spread out on the ground. In this case the best plan is to pull the plant up, as it is worthless. *Carroll:* The White Burley takes its name of "white" from the peculiar whitish appearance of the plants just before maturity. There is nothing different in the mode of cultivation from the old kind, except that it is desirable to plant on new ground. The plants then grow rapidly and mature before the sun has lost its full warmth, thereby insuring the light and bright color which is so desirable with purchasers. The beds should be sown as soon as the ground is dry enough to work, the land well prepared by plowing and harrowing—a ridge made by throwing three furrows together, three feet apart and marked across same distance—that the crop may be mainly cultivated with the plow. The plants are topped at from twelve to twenty leaves. The time for cutting can only be learned by experience, but will be indicated by the breaking of the leaf when pressed between the fingers. After it is cut and hung on scaffolds out of doors it should remain so, exposed to the sun for ten days, or until the leaf has acquired a bright yellow hue. It must then be put under cover in a house, not ventilated, so that there may be no danger of "house-burning." This kind of tobacco has been sold this year at from $15 to $25 per cwt., and often as high as $50 when prepared for market with care.

Fertilizers are not used in Ohio when new land is cultivated; farm-yard manure is preferred and used almost exclusively in most tobacco counties for old land. In Vinton County, after stripping off the leaves in the field, hauling to tightly constructed houses, and stringing on strings with a flat needle, and curing three days with furnace heat, the stock is ready to take down and pack for market.

In Indiana also farm-yard manure is required for old ground, on which the largest crops are secured. In most tobacco-growing counties air-curing is practiced, first on scaffolds and then in houses. Hickory lands are in great request for tobacco. Very rarely are fertilizers used in Illinois, fresh lands being mainly employed, yet farm manure is used somewhat upon fields long cultivated. Curing is done in open barns, or on scaffolds, and in houses.

Missouri tobacco is largely grown on fresh soil, land being plenty, and the culture given to this crop being an excellent preparation for wheat and other crops. If a fine quality of manufacturer's leaf is wanted, a thin soil is selected on oak and hickory uplands. If more than two crops are taken, inferior quantity and quality result. In rich soil on pin-oak land a dark, heavy article is grown. Fertilizers are scarcely ever used; on a small portion of the area, always in old ground, farm manure is applied. Clover-sod is also cultivated profitably in tobacco. The old mode of curing is largely practiced; in some districts charcoal-curing has been introduced, with increase of price to the extent of 25 to 50 per cent. What is called the "Yankee plan" has been adopted by some—stringing the leaves with a needle and fastening the strings to the ends of the sticks.

MARKETING.

Some of our correspondents make note of the mode of packing and marketing. The crop of Litchfield County, Connecticut, was mainly bought, hanging on the poles, at 20 cents per pound. It is mostly delivered at the packing-houses of New Milford in bundles of 8 to 12 pounds, where it is sorted into four to six qualities, and packed in cases of 375 to 400 pounds each; and, during the months of May and June, undergoes a sweating, and becomes ready for market in August and September. Much of the last crop in Tolland County was sold before curing at about 35 cents. Little of the New York production was sold until February.

In Maryland the stripping is done through the winter and spring; packing into hogsheads during spring and summer; and about one-half is usually sent to market as early as August. A portion of the finer qualities is used in this country, but most of the crop goes to Europe, where much of it is used for smoking. The Montgomery County packages vary from 500 to 1,000 pounds.

The fine tobacco of North Carolina is mostly taken to local manufactories in a loose state. The coarse grades are, in part, sent in the same manner, and a portion is packed in hogsheads, under pressure. The Warren County crop is packed in hogsheads of 1,200 pounds, and sold in Virginia, at Petersburg and Richmond.

The Robertson County, Tennessee, crop goes mainly to Germany, France, Italy, and to Africa, except a small quantity of very fine dark wrappers taken by home manufacturers. In Barren County, Kentucky, after stripping, it is tied in bundles of twelve leaves each, and put into hogsheads holding about 1,500 pounds. In Christian it is assorted generally into two classes, known as leaf and lugs, two-thirds to three-fourths being leaf and the remainder lugs, packed into hogsheads of

1,400 to 2,000 pounds, according to quality. In Simpson, most of the crop is sold in the hand to speculators. Most of the western tobacco is exported.

EXPORTS.

A statement of the exports of tobacco in all forms, since 1866, is as follows:

Years.	Leaf-tobacco.	Value.	Manufactured tobacco.	Value.	Snuff.	Value.
	Pounds.	*Dollars.*	*Pounds.*	*Dollars.*	*Pounds.*	*Dollars.*
1856	.....	12, 221, 843	10, 008, 606	1, 869, 157	86, 055	20, 050
1857	.....	20, 260, 772	7, 456, 666	1, 447, 027	50, 401	11, 526
1858	.....	17, 009, 767	11, 210, 574	2, 400, 115	37, 245	10, 109
1859	.....	21, 074, 038	14, 912, 811	3, 334, 401	239, 148	68, 090
1860	.....	15, 906, 547	17, 697, 309	3, 372, 974	39, 923	11, 354
1861	.....	13, 784, 710	14, 783, 363	2, 742, 828	81, 465	17, 703
1862	.....	12, 325, 356	4, 071, 963	1, 068, 730	38, 539	7, 914
1863	.....	19, 752, 076	7, 025, 248	3, 384, 544	44, 924	13, 633
1864	.....	22, 845, 936	8, 586, 494	3, 603, 756	28, 277	16, 813
1865	.....	41, 592, 138	7, 294, 165	3, 439, 979	93, 159	39, 129
1866	190, 826, 248	29, 456, 145	6, 515, 709	1, 794, 689	18, 920	7, 981
1867	184, 803, 065	19, 620, 159	9, 601, 142	2, 795, 008	24, 342	12, 576
1868	206, 020, 504	22, 898, 823	10, 470, 024	3, 100, 084	11, 393	8, 730
1869	181, 527, 630	20, 552, 943	.....	2, 759, 005	31, 497	20, 252
1870	185, 748, 881	21, 100, 420	.....	1, 582, 995	20, 181	12, 226
1871	215, 667, 604	19, 908, 797	.....	2, 022, 434	18, 724	11, 683
1872	234, 936, 892	24, 136, 166	.....	2, 511, 866	15, 092	5, 241
1873	213, 995, 176	22, 689, 135	.....	2, 627, 585	12, 196	7, 462
1874	318, 097, 804	30, 399, 181	.....	2, 537, 782	15, 716	7, 092

A small quantity of cigars exported is not included in this table.

REPORT OF THE HOUSE COMMITTEE.

Mr. Begole, from the Committee on Agriculture of the House of Representatives of the United States, to whom was referred so much of the President's message as relates to agriculture, submitted the following report; which was ordered to be printed:

The committee have spent considerable time in examining the working and operations of the Department of Agriculture, and find it in charge of a practical and experienced farmer and able and efficient officer, assisted by a corps of efficient heads of divisions. Notwithstanding the Commissioner has been to some extent hampered by a lack of adequate appropriations, the operations of the Department for the year 1874 show a very satisfactory exhibit.

After a very unusual delay, Congress at its last session provided for the printing of a small number of the annual report of the Commissioner of this Department. Fifty thousand dollars was appropriated for this purpose. The Congressional Printer printed and bound about twenty-seven thousand copies of the report for 1872, and one hundred thousand copies of the report for the year 1873. Between forty-five and fifty thousand copies of the report for 1873 have been delivered at the folding-rooms of the House of Representatives and Senate, and are now available for the use of members of the two Houses.

The committee find that the delay in the printing of these reports was a great disappointment to the farming community all over the country, as it is the only work issued by the Government in which the farmers are personally and directly interested. When it is remembered that the last census established the fact that one-half of the population of these United States are either directly engaged in agricultural pursuits or are wholly dependent upon them for their support, that would certainly be a wise policy which would foster the only branch of the civil service devoted entirely to the interests of this great producing class. The commercial and manufacturing interests of this nation are of great importance, but they are both secondary when compared with the important interests involved in agriculture. Notwithstanding the vast improvements in agricultural machinery, the recent wonderful discoveries in agricultural chemistry, and the still greater discovery in the growth and formation of plants, the Government seems to take less interest than formerly in fostering this important and really paramount branch of industry.

We are pre-eminently a nation of farmers, and as such are likely to remain for many generations to come. Our temperate and stimulating climate, the variety of our soil, and the great diversity and range of latitude and elevation, give us almost every climate and condition of temperature necessary for producing all the valuable plants and fruits in the greatest abundance. The rural tastes of our people and the vast domain of territory yet unopen to homestead occupancy combine to assure not only a continuance but an increase in the interest hitherto manifested in agricultural pursuits.

It is a source of regret that so few members of either House of Congress visit the Department of Agriculture and examine its workings. The committee have derived both pleasure and profit from visits to this Department. If members from agricultural districts, without regard to their professions, would give this Department of the Government a small share of their time and attention, it would be a source of great encouragement to the officers of this Department, and very much lighten their labors.

The extensive correspondence of this Department is strong proof of its importance to the entire country. At this season of the year the letters received and answered will average one thousand per day, and some days amount to two thousand, and even three thousand, and yet, with this amount of work, the correspondence of the Department is usually kept up to date.

Not only as evidence of the importance of this branch of the public service, but as proof that the Commissioner of Agriculture properly appreciates the great work intrusted to his care, the following quotation is given from his last preliminary report to the President, which will accompany his annual report for 1874, and which has already been made to this House and ordered to be printed:

"It gives me great pleasure to know that the operations of this Department for the past year have served to awaken and greatly increase a spirit of improvement in the agricultural interests of the country. A territory so extensive as ours, possessing every variety of fertility and every diversity of climate which are congenial to the productions of the earth, and with a population whose habits, manners, customs, enjoyments, and wants differ as much as the climate in which they live or the countries from which they come, requires a supervision which shall adapt itself as much as possible to an appreciation of their condition, meet their wants, and make that provision for their necessities and improvement which their situation will not allow them to make for themselves. The isolated situation of the farmers affords them few opportunities of keeping step with the rapid march of the world's progress, and any aid which can be given them by this Department is as strongly marked as it is highly appreciated. For their benefit, it has been the province of this Department to seek for the best seeds which the world can supply, to study their adaptation to the soil and climate of the country, and to put them into the hands of those who will make them profitable to the section where they respectively reside. When any discovery is made in the method of cultivation or propagation, it is promptly communicated through the medium of a monthly publication. Many persons, in this and other countries, are constantly engaged in experiments to improve seeds and plants, as well as the discovery of new methods for their cultivation, whereby the work of the farmer may be made more profitable. These are anxiously watched and the results promptly communicated, and, when successful, availed of by extensive distribution. The counsel, advice, and information of the Department are cheerfully given to all persons who apply on any subject which pertains to the interests of agriculture."

The principal means of communication between the Department of Agriculture and the farmers of the country is the annual report of the Commissioner. This work contains statistics of vital importance to the farming community, and its non-appearance creates dissatisfaction among that large class engaged exclusively in the tillage of the soil and other classes dependent upon them for support.

It is sincerely to be hoped that Congress will hereafter promptly provide for the printing of the usual, if not a larger, number of copies of this valuable work. It is only through its statistical division that reliable data can be obtained as to the condition, prospects, and results of the cereal, cotton, and other crops of the country.

With from one to four correspondents in each county of almost every State and Territory of the Union, the Department is enabled to furnish information of great value, at stated periods of each month, as to the probable production of any given crop. The returns from these correspondents are carefully studied, estimated, tabulated, and published, not only for the benefit of the farmers, whose interest is paramount to all others, but also for the benefit of the merchants and manufacturers who deal in the various productions of the farm and garden. By this means legitimate parties are protected from the rapacity of the speculator, who deals most profitably upon fabricated reports.

So reliable has this information become that its effects upon the markets of the country are very perceptible by nearly all business men, and it has therefore been found necessary, of late years, to carefully guard this information up to the hours of publication. These are current facts which appear in the monthly reports.

The annual report contains a condensed statement of the operations of the year, and of course embodies information concerning the growth and development of the country which cannot be obtained through any other channel.

As this information is intended for the benefit and encouragement of the great producing class of the country, Congress should not hesitate to grant whatever appropriations may be deemed necessary to render the Department useful and efficient in the discharge of the important duties intrusted to it.

Referring to the Congressional Record, it is shown that Congress authorized the publication and made adequate appropriations for the printing of 165,000 copies of the annal report of the Commissioner of Agriculture for the year 1865, 225,000 copies for the year 1870, 225,000 copies for the year 1871, and but 25,000 copies for the year 1872, and 100,000 copies for the year 1873.

What disposition of the report for the year 1874 will be made by Congress remains to be seen.

From the daily correspondence in the hands of the Commissioner of Agriculture, the importance of procuring new and valuable seeds is made quite obvious. Varieties of the cereals formerly prized here have been from year to year deteriorating, and the product per acre of staple grains has been steadily diminishing. Perhaps one of the principal causes of deterioration is the slight attention paid by farmers to the selection of seeds; but, while this is the case, it should be remembered that securing the very best seeds is not all that is necessary. The very best seeds, those that yielded most abundantly on the best-prepared soils, will either fail or show a poor return on worn-out or poorly-prepared soils. While this is the case, there seems to be no good reason why farms that at one time yielded thirty bushels of wheat per acre should now produce only from twelve to fifteen bushels per acre.

As evidence of the great benefit to accrue to the material and productive interests of the country, as reached by the operations of the Department of Agriculture, it will only be necessary to call your attention to a single instance to fully illustrate this. As shown by reliable returns, the oats-crop of 1868 amounted to 254,960,800 bushels; acreage, 9,665,736; average yield per acre, 26.36 bushels; value of crop, $142,484,910; average price per bushel, fifty-five cents.

Reports of experiments with the "Excelsior oats," a new variety imported by this Department for this and former years, show an average production of forty bushels per acre, sixty bushels not being an uncommon yield. Estimating the average production per acre, if generally introduced, an increase of but four bushels per acre over the average yield of 1868, and the addition to the wealth of the country in the item of oats alone would be 38,622,944 bushels, or $21,264,619 in value. The weight of the product of this variety of oats, for a few years after its introduction, may be fairly averaged at twenty-five per cent. above the common kinds, estimating the latter at thirty pounds per bushel and the former at thirty-six pounds, although in many cases forty and forty-five pounds per measured bushel have been reported. Add twenty-five per cent. to the sum above ascertained, and an increase will be shown in the productive industries of the country of the enormous sum of $25,517,542 per annum.

Other new and valuable seeds introduced by this Department have shown equally gratifying results.

As before stated, our great diversity of soil, climate, and elevation gives our country an advantage over any other single sovereignty in the civilized world. Unlike most other countries, we export all the productions of the soil necessary to sustain life. There is scarcely a cereal, a plant, or a fruit that we cannot produce here in the greatest abundance. Our territory is extensive, and its climate is as varied as its miles and degrees in latitude and longitude. While on the north we have a climate in which all the hardier plants and fruits may be raised in the greatest abundance, on the south we have a climate varying from temperate to tropical, where all the semi-tropical fruits and plants may be raised at a profit to the producer.

Your attention is called to the efforts of the Commissioner to impress upon the people of the Southern States the importance of the cultivation of the jute-plant, which has become an article of great commercial importance.

The report of the directors of the State Agricultural Society of California for the year 1872 shows that the wheat-crop of that State alone amounted to about thirty millions of bushels.

Owing to the high price of sacks and no timber in that country suitable for making flour-barrels—the product must always be shipped in the grain in sacks—and the limited facilities afforded for transporting this immense yield of grain to market, the producer receives but a small return from the crop. After appealing to the farmers of the State to provide against such contingencies hereafter by purchasing their sacks rly in the season, the directors say: "Nearly all of our grain-sacks are now made of the fibers of a plant called jute. The principal place of production of this plant is now in India, in the British possessions of that country, and the principal place of its manufacture, not only into cloth but into sacks, is Dundee, Scotland. The cost to the farmers of California to sack their last crop of wheat was not less, but probably more than $2,450,000.

At the ruling prices of wheat at the time these sacks were bought and paid for, it required 2,722,220 bushels of wheat, or a little more than one-eleventh of all the wheat produced, to pay for them. This large amount of money was subtracted from the profits of the farmers of the State to pay for the labor of producing the raw material in India, the freighting of that raw material to Dundee, the manufacturing of it into sacks, and finally freighting them to San Francisco and distributing them throughout the State, with the addition of the profits of the merchants, brokers, insurance-houses, &c."

Since this report was made it has been demonstrated that the rich bottom-lands of California, particularly those in the southern section of the State, and large sections of our other Southern States, where facilities for irrigation are at hand, produce not only a good plant and material, but actually as abundant as the best localities in India. Last year the Commissioner of Agriculture imported, direct from India, a large amount of jute-seed, which was principally distributed among the farmers of California and to those of the Southern or Gulf States, where it has been shown that it can also be produced abundantly and profitably.

The "ramie plant," another fibrous plant of great value, was some years ago introduced by this Department, and is succeeding well in the Southern States. So important are these new sources of industry regarded that immense sums of money are now being invested in perfecting machinery for the manipulating and manufacture of the fiber. Specimens of both the raw material and the manufactured goods are to be seen at the Department of Agriculture.

It is certainly the duty of the Government to encourage the growth and development of all new enterprises that promise to better the condition of our people, to assist in developing new interests that are likely to add to our prosperity and happiness as a nation, by causing us to be less dependent upon foreign governments for supplies which can be produced most abundantly here. The soil and climate of California and many of the Southern States is adapted to the successful cultivation of jute, ramie, New Zealand flax, cotton, silk, coffee, tea, opium, rice, and the various kinds of tropical fruits, such as the pine-apple, banana, mango, cocoa-nut, plantain, and many other valuable fruits, and medicinal and coloring plants, while the Northern and Middle States produce abundantly of hemp, flax, all the cereals, pork, beef, mutton, and wool.

The past year was one of more than average prosperity to the farming community, and since the marketing of the crop of 1874 a very perceptible improvement has taken place in the commercial interests of the country. The question of cheap avenues of transportation is one that still claims the attention of those engaged in farming operations. While the farmers of the country do not desire to interfere with the lawful and just rights of transportation companies, they feel that they have important and even vital interests involved in the controversy, and are of the opinion that some equitable means might be devised whereby these companies would be compelled to show less discrimination in favor of certain market points.

A very large portion of our western territory and several of the newer States of the West was overrun by grasshoppers during the growing-season of last year, and immense damage was caused by their ravages. Portions of Kansas, Nebraska, Iowa, and Minnesota, and the Territory of Dakota suffered fearfully. Such a scourge has never swept over any part of this great country before. The growing crops, in fact all vegetation, were all swept away as by a devastating fire, leaving neither food for man nor beast, and the people in a destitute condition. Notwithstanding the many noble efforts for the relief of these people, much suffering has already been felt, and it is feared that the worst has not yet been experienced.

The Government promptly authorized the distribution of one hundred thousand dollars' worth of Army rations for the relief of the sufferers, and more recently Congress has appropriated thirty thousand dollars for the purchase and distribution of seeds for the renewal of their crops in the coming spring. The help thus afforded has relieved much distress and suffering, but still further assistance is called for.

The committee would recommend Congress to grant without delay whatever assistance lies within its legislative province for the relief of these distressed and suffering people.

CHEMICAL MEMORANDA.

By Wm. McMurtrie, Chemist.

Mr. Abram McMurtrie, of Belvidere, Warren County, New Jersey, has for many years past made use of the dark, steel-gray limestone of that locality, for agricultural purposes, and has repeatedly found that the lime produced from it seemed in nearly every case to have a rather

injurious effect, but was wholly unable to account for it. When the lime was placed out in open fields to slake, the spots occupied by the heaps, even when the lime was removed very carefully and no appreciable quantity was left behind, remained perfectly barren for two or three subsequent years. Very frequently the crops to which the lime was applied showed indications of an injurious action in a very decided manner, and this influence always appeared more marked in wet than in dry seasons. In fact, a wet season sometimes determined a complete loss of the whole crop, especially when it happened to follow immediately upon the application. Believing that a change in the kind of lime employed would at least occasion no loss, Mr. McMurtrie was induced to try a lime produced from stone taken from a quarry three or four miles distant, and said to be particularly beneficial in its results. This limestone was of very light gray color, somewhat resembling granite in appearance, and the lime produced from it, when thrown out in heaps to slake, though rather dark at first, upon slaking changed to a light buff-color. Its effects seemed to be almost directly opposite to those of the lime previously employed, and the difference between the effects being so decidedly marked, it was considered of some importance to investigate the cause of this action by means of chemical analysis. Samples of the limestone were therefore obtained and analyzed with the following results:

No. 1 is a sample of that producing the beneficial results. It was obtained from a vein running across the farms of George Radle and Philip Raub, near Oxford, and has the following composition:

Moisture	0.70
Carbonate of lime	92.61
Carbonate of magnesia	0.914
Oxide of iron and alumina	2.06
Silica	3.75
	100.034

No. 2 was obtained from the quarries of Mr. A. Depue Roseberry, near Belvidere, and has the following composition:

Moisture and organic matter	1.30
Silica	3.31
Peroxide of iron and alumina	2.12
Carbonate of lime	51.20
Carbonate of magnesia	42.10
Phosphoric acid	trace.
	100.03

No. 3 was taken from the quarries of E. J. Mackey, located very near the boundary of Belvidere. The analysis resulted as follows:

Moisture and organic matter	1.40
Silica	2.13
Peroxide of iron and alumina	0.82
Carbonate of lime	56.80
Carbonate of magnesia	38.31
Phosphoric acid	Trace.
	99.46

A glance at these analyses is sufficient to show that the deleterious effects of the lime produced from the limestone from the quarries represented by Nos. 2 and 3 are due to the high percentage of magnesia they contain, and that the beneficial effects of the other lime is due to the absence of this constituent.

Many agricultural chemists acknowledged as authorities fail, in their

writings upon the subject of mineral fertilizers, to note the fact of the injurious action of caustic magnesia upon vegetation, and in fact the only writer who seems to have recognized it is Sir Humphrey Davy,* who reports experiments upon this subject made by himself, and others made previously by Mr. Tennant. He explains the injurious effects upon the theory, since confirmed by experiment, that caustic magnesia in presence of caustic lime absorbs carbonic acid very slowly, and that on this account remaining a long time in the soil in the caustic state exerts the deleterious influence noticed in the limes mentioned above. The limes in question were applied to rather light sandy or gravelly soil, but, according to Davy, the same lime might be applied to heavy soils, containing considerable quantity of organic matter with decidedly good results, and that upon light soils, where pure lime is not obtainable, the magnesian limestone should be applied in small quantities. The caustic action of the magnesia may in such cases be very materially ameliorated by a tolerably heavy application of stable-manure. In the locality in New Jersey referred to, however, we would advise those farmers who have suffered the inconveniences and losses resulting from the use of magnesian limestones to employ the other, even though they may be subjected to greater expense in the matter of transportation.

It has been suggested that the magnesia combining with water and silica forms a hydraulic cement in the soil, and that the injurious effects are due to such a combination.

This can not, however, be considered a correct theory, since these magnesian limestones have been used upon clay soils and their application to such soils has no deleterious effects. It would seem that the magnesia reacting upon the silicate of alumina forms a double silicate of alumina and magnesia, thus neutralizing its causticity, and that the injury consequent upon the application of magnesia lime to sandy or gravelly soils is to a large extent due to a deficiency of clay.

The following are the results of a sample of dark-colored cranberries from New Jersey:

Moisture	86.50
Organic matter	13.25
Inorganic matter	0.25
	100.00

The inorganic matter contains:

Insoluble silica	0.874
Soluble silica	2.563
Lime	2.710
Magnesia	trace.
Peroxide of iron	1.253
Phosphoric acid	19.309
Sulphuric acid	5.870
Chlorine	1.260
Potassa	56.683
Soda	9.338
	99.860

☞ The supplement to the Mark Lane Express for February, 1875, contains an interesting paper communicated by Professor Church to the members of the Cirencester Chamber of Agriculture, showing the results of a number of analyses made in the interests of agriculture. The substances analyzed consist principally of fertilizing and feeding materials. One peculiarity in mixed-seed cakes analyzed, which had an

* Elements of Agricultural Chemistry, London, 1814.

injurious effect upon the animals fed with them, was the presence of *tin* scraps in small particles. This amounted to not more than one part in one thousand, but in the case of a waste bran which was analyzed it reached five parts per thousand. He also notices the fact that spent bran obtained in England often contains oxalic acid, sulphuric acid, and blue vitriol; that barley-meal is adulterated with wheat-flour, and that both are often adulterated with sulphate of baryta, and more frequently with ground gypsum. In fact, he cites one "mixing stuff" which contained 72 per cent. of gypsum and nearly 8 per cent. of fiber. These facts, while they are of very great value to English agriculturists, are not devoid of interest to American producers and consumers, especially in the easterly portions of our country, where adulteration is being practiced to considerable extent.

Among other analyses he gives the following, showing the composition of *Gallega officinalis*, a leguminous plant which has been proposed as a substitute on clover-sick lands, and which is somewhat similar to lucerne:

Analysis of Gallega officinalis.

	In 100 parts of the—		
	Fresh plant.	Dry plant.	Seed.
Moisture	81.9	.....	14.9
Oil, &c	1.3	6.5	7.0
Flesh-formers	4.1	22.9	33.2
Sugar, starch, mucilage, and digestible cellulose	6.9	38.8	31.6
Indigestible fiber	4.5	24.8	10.4
Ash	1.3	7.0	2.9
Total	100.0	100.0	100.0

BOTANICAL NOTES.

By Dr. Geo. Vasey, Chemist.

In the Garden (London) for February 13, mention is made of an American plant, *Xerophyllum asphodeloides*, which has found its way into cultivation in England, although very little known here in its own country. The writer says:

I saw this rare and beautiful hardy plant, which grows in grass-like tufts, flowering freely in the York nurseries last summer. Its leaves are from 4 to 20 inches in length, and not more than the eighth of an inch in width. Their upper surface is flat, the under sides convex and furrowed, and the edges are furnished with minute teeth resembling those of a miniature saw. The longer leaves are gracefully recurved, while the shorter ones, which are in the center, are more or less erect, forming altogether a graceful circular plume. The flowers, which are white, are produced in an erect spike from 12 to 18 inches high; and although the individual flowers are not large, yet, owing to the abundant way in which they are produced, the general effect is most beautiful, the erect stem contrasting, in a striking manner, with the tufts of graceful recurving leaves at its base. When this plant comes to be better known, it will doubtless be extensively used for table and other decorative purposes, for which it is admirably adapted, as the leaves are of such a texture as to withstand the effects of dry air and gas. This I have proved, having had a plant of it in a room during the past three weeks. The pot in which it grows is placed on the stand of a moderator lamp, the base of which is surrounded with ivy-leaves interspersed with a few flowers, while the longer leaves of the *Xerophyllum* gracefully recurve, and fall over and conceal the upper portion of the stand, thus forming a very pleasing and ornamental object, and one which has been greatly admired. Although this plant will grow and thrive tolerably well in ordinary garden soil, yet it succeeds best when planted in a compost consisting of equal parts

of peat, loam, and white sand. It forms a handsome object planted on rock-work. It is a common plant in the pine barrens of North America, from New Jersey and Oregon southward.

The closing sentence will, perhaps, need a little explanation. It would seem to convey the statement that the plant grows over the entire country from New Jersey to Oregon, and thence southward. It is really confined to a somewhat narrow belt of sea-coast from New Jersey to North Carolina, but what appears to be the same or a closely allied species, is also found on the Pacific coast from Oregon to Mexico. Why is it not as deserving of attention in cultivation at home as abroad?

In the same paper is a list, accompanied with commendatory remarks, of "some flowering trees and shrubs of North America," in which are named the Stuartia and Gordonia, (Loblolly Bay,) the magnolias, the tulip-tree, red bud, fringe tree, silver-bell tree, (*Halesia*,) dogwood, (*Cornus florida*,) catalpa, witch-hazel, mountain-ash, (*Pyrus Americana*,) crab-apple, and several species of *Prunus*, among which, by some error, is mentioned the *Prunus cerasus*, the sour or Morella cherry, of which it is said; "The sour cherry is the most valuable of the native American cherries." The fact is that the Garden Red or sour Morella cherry is an introduction from Europe.

FACTS FROM VARIOUS SOURCES.

CHEESE-MAKING AT HIGH ALTITUDES IN FRANCE.—A writer in *Le Journal Pratique d'Agriculture* presents a characteristic phase of French rural economy in his account of the cheese-manufactory of M. Charles Durand, who took the prize medal at the *Concours Regional Agricole* of Mende in 1874. Mende is one of the three arrondissements of the department of Lozère, in Southern France, an isolated, mountainous region consisting mostly of a plateau from 2,300 to 3,000 feet above sea-level, above which numerous mountain-crests rise beyond the line of perpetual snow. Grain-culture in such a region is limited to a few localities, and its scanty yield of food is eked out by chestnuts, acorns, and other spontaneous products of the forest. The population is scanty, poor, indolent, ignorant, and, as might be supposed, intrenched in local prejudices. Many of the workingmen migrate to neighboring departments during the summer months to win a precarious subsistence for their families by day-labor at low wages. Agriculture here is mostly pastoral and primitive. Farming capitals are small, and the amount and character of live-stock held are generally indifferent. The processes and implements of culture are also very rude. Yet this unpromising region has attracted a few enterprising and intelligent agriculturists, whose labors in utilizing its imperfect resources have developed very unexpected and gratifying results. Among these M. Durand has made a tract of bleak mountain-land the scene of a profitable stock-raising and cheese-manufacturing industry. His estate, known as Salles-Basses, consists of 1,010 acres, of which 185 are in meadow, and the remainder in natural pasture, interspersed with "bouquets" of trees. It is located in the mountains of Aubrac, about fourteen miles from Marjevols, and at an altitude of 4,382 feet above sea-level, where heavy snows, long winters, and rigors of climate render cereal culture impossible. Here, comfortable dwellings, large stables and granaries, and two large cheese-factories (*burons*) have been built; large areas have been inclosed, and extensive labors for sanitary and soil improvement and irrigation have been executed. Meadows already exist-

ing were brought to maximum fertility by judicious fertilization and irrigation; good pastures were transformed into meadows, and in the ordinary pastures the sod was made to extend itself gradually over heather and moor. These results have been accomplished by soiling animals, leveling, draining swampy declivities, and utilizing the surplus waters for irrigation, &c. The pastures are fertilized successively by shifting the stock-inclosures, and the meadows by stable-manure, which is carefully preserved. In the case of milch-cows with calves, only the latter are kept constantly inclosed; the mothers, being allowed free range, are kept by maternal affection near their offspring, thus concentrating their droppings upon a small surface. The fences are high and close, in order to protect the animals from the severe winds of the region, and consequently to increase their flow of milk.

The herd consists of 400 animals, of which 200 are milch-cows. The latter are gathered into two large ranges. Of the 400 animals, about 150 belong to M. Durand, and the remainder to other parties, who pay for their sustenance and care. He usually charges 25 to 30 francs per head for pasturing young cattle from May 25 to October 13. In the case of milch-cows, M. Durand generally uses the milk for cheese-making and allows the owners a money equivalent. This it is difficult if not impossible to average, for cows vary in the proportion of caseine in their milk. His own animals consist of 30 calves, 6 beef-cattle, 24 bulls of one, two, or three years of age, 25 heifers, and 65 milch-cows. Only 100 of these animals are wintered on this estate, the residue being sent to another property of his in the department of Aveyron. Defective and inferior animals are sold in October. The small product of milk and butter during the winter season is mostly consumed on the farm.

Six or seven hands are employed perpetually at $50 to $60 per annum, with board and lodging. About as many more are employed during the summer, at $30 to $35 for the season, with board and lodging. M. Durand resides on this place about three months during the year, usually from June 20 to September 20, and makes occasional visits during the remainder of the year. The farm is in charge of a foreman. All the draught labor is performed by oxen; half a dozen horses, half Arab and half English blood, are used for the pleasure of the owner and his family.

The specific industry of Salles-Basses is cheese-production. M. Durand, after ten years' experiment, gave up the raising of fat calves. In winter the dry food is too rich and unhealthy. It induces chronic irritability in the mother and a destructive diarrhea in the calves dropped during that part of the year, very few surviving. In summer the restriction of cows to green grass produces other equally fatal intestinal diseases, involving a burden of care and expense which has induced the proprietor to abandon calf-raising altogether and to concentrate his efforts upon cheese-making. One of his neighbors, an intelligent agriculturist, criticises this policy, and intimates that the above-named difficulties could be disposed of by proper management.

The main productive element of M. Durand's enterprise, then, is the cheese-product of 200 cows, which leave the stable about May 25, and return October 13, making the average pasturing and milking season one hundred and forty days. During the first eighty-one days, from May 25 to August 15, the daily average yield of milk per cow is 5 liters, or 1.32 gallons. M. Durand estimates the average cheese-product at 113½ grams per liter, about equal to 15.2 ounces per gallon. The daily cheese-product of the period is then 113.500 kilograms, or nearly 250 pounds. The total product for the eighty-one days is 81,000 liters, or 21,398 gallons of milk, yielding 9,193.5 kilograms, or 20,270 pounds

of cheese. During the next twenty-five days, from August 15 to September 9, the average daily yield of milk per cow is reduced 20 per cent., amounting to 4 liters, or 1.0567 gallons. The daily cheese-product falls in the same proportion, amounting to 90.0080 kilograms, or about 198½ pounds. The total product of the period is 20,000 liters, or 5,285 gallons, yielding 2,250 kilograms, or 5,960 pounds of cheese. During the closing period of thirty-four days, from September 9 to October 13, the daily average yield of milk per cow is stated at 2.6 liters, or 3.8 quarts. The daily cheese-product of the herd is 59.02 kilograms, or 130.12 pounds. The total product of the closing period is 17,680 liters, or nearly 4,660 gallons, yielding 2,007 kilograms, or 4,424 pounds of cheese.

The total yield of milk for the season of one hundred and forty days amounts to 118,680 litres or 31,353 gallons, averaging 847 liters or nearly 224 gallons per day. The total cheese-product was 13,450 kilograms, 29,754 pounds, averaging daily 96.07 kilograms or 212.52 pounds.

The established price of cheese is 1.20 francs per kilogram, or nearly 11 cents per pound. The total receipts of a season are stated at 16,165 francs, from which deducting 4,640 francs for the use of cows belonging to other proprietors, and about 7,000 francs for the total expense of the estate, there remains a profit of 4,525 francs from the cheese industry alone. The sale of animals, especially hogs, fattened upon the refuse milk and whey, raises the average annual profit of this enterprise to about 12,000 francs, or $2,400. The amount of whey left from cheese-manufacture is sufficient to fatten not only the hogs raised upon the estate, but also about 24 hogs belonging to neighboring proprietors, who pay about 25 francs per head from June 1 to October 13. Each day's residuum of whey is placed in vats, and kept for four to eight days, in order to allow the butter which it holds in solution to come to the surface. This butter is gathered and used for cooking; it is also placed upon the tables of the workmen. It is of course not remarkably palatable, as it contracts a certain sourness of taste in the acid whey, which has also dissolved a portion of its substance. The whey is, on the whole, a good diet for hogs, though as the weather becomes warm it acquires a strong odor from partial decomposition. The hogs devour it greedily. At first its effect is cathartic, but this is only temporary. The growth of the animals in size, flesh, and fat is normal, producing excellent meat.

The two buildings, denominated by courtesy cheese factories, (*burons* or *chalets*,) are very simple structures, with earthen floors and surmounted by lofts which serve as dormitories for the workmen. The main story is divided into a large room furnished with implements for making cheese and a cellar for storing it. The utmost cleanliness and thorough ventilation are strictly enforced in every portion of the building. All the utensils are daily scalded, washed, and dried, and the last trace of acidity is removed before they are again used. Even a fine lady would find no need of her vinaigrette to ward off any disagreeable odors. The workmen are jolly, robust peasants, from twenty to thirty years of age, who in all respects meet the writer's ideal, except in *kneading* the curds with their *knees*, a practice which he justly reprobates on the score of decency.

The cows are milked daily, at 4 o'clock a. m. and at 3 o'clock p. m. Three or four men milk 100 cows with a remarkable promptness and address. The animals are brought near the inclosure and treated to a handful of salt, when the calves are allowed to draw the udders for a few seconds; these are then drawn back a little and the milking is rapidly completed. Without these precautions the cows would refuse to yield their milk; greater care is necessary in hot weather than in

cold weather. The milk-buckets are immediately emptied into large wooden vessels, which are carried to the factory on the shoulders of porters by means of flexible poles. The milk, which is seldom heated, is immediately strained into large vats holding about 30 gallons each, and treated with rennet. The writer thinks that the excess of coagulable matter produced by the copious infusion of rennet accounts for the sharp taste of the cheese-product.

In about an hour the curd, having acquired proper consistence, is cut with a wooden blade, called *mésadou*, and then worked upon a small round board, pierced with holes, with a sort of staff or club, called *menole*, in order to expel the whey. By slow manipulation a larger quantity of cheese is obtained, but, according to common opinion, at some sacrifice of quality. The curd is then placed in a large, shallow wooden vessel, (*faisselle*,) with holes in the bottom and sides, and the operator, with pantaloons drawn half-way up the thigh, presses it with naked hand and knee, in order to eliminate the last remnant of whey, the animal heat of the body imparting a special quality to the cheese. M. Durand has been persuaded to substitute a more rational process for this rude and primitive one, which in some cheese-farms of that region is carried to a disgusting extreme; the workman, entirely nude, impresses his inferior and posterior muscles upon the curd.

The curd, divided into cakes, after the last-named operation, is subjected for twelve hours to the action of a press, and then allowed to ferment for thirty-six hours in the cellar, where they enlarge in volume, showing, like bread, an immense number of interior cavities. They are then brought out and placed upon a low table, (*selle*,) made of a single piece of wood, creased through the middle with a slight slope and small trench, which carries off the final dripping. The workman then breaks up the cake into small bits, first with a heavy club, and then with his hands. This is for the purpose of salting the cheese, which is then again worked up, placed in a mold, and again subjected to pressure. The mold is composed of three parts: 1, the *faiselle*, or shallow wooden vessel, before mentioned; 2, the *feuille*, a strip of beech-wood, 12 to 16 inches wide, bent into a cylinder; 3, the *guirlande*, a band 2 or 3 inches wide, encircling the mold. The cheese having received the permanent impress of the mold is remanded to the cellar, but it is continually cared for till the time of its delivery. When a month old, it is sold by wholesale at 1.20 francs per kilogram, or nearly 11 cents per pound, to the merchants of Marjevols, who send it to retailers of Paris and of Southern France.

The writer, on the whole, thinks M. Durand's system is the best for utilizing the natural pastures upon the heights of Lozere. The breed of cattle employed is the *Vendéen*, improperly called the *Aubrac*, breed. The animals are selected while calves, and raised by the proprietor. Their excellence is attested by one hundred and forty prizes taken by them in the regional agricultural fairs.

WATER-SUPPLY OF THE SUABIAN ALPS.—From a memorial prepared for the Vienna Exposition of 1873 the following facts are condensed: The Suabian Alps form a table-land 3,000 feet above sea-level, with a southeastern slope, broken up in terraces and occasional deep valleys. A few beech forests are almost the only natural vegetation; bare and stony fields greet the eye, relieved by scattered straw-roofed hamlets, inhabited by genuine Suabian peasants, who adhere sturdily to their antique customs. The name of Bauer (cultivator) is aristocratic, and only applied to those who own four horses; he that has two or less is a

söldner, kuhbauer, (renter, cow-farmer,) &c. The eastern portion of this district embraces some of the wildest of the Alps. On the land which is tilled the crops seem as if they grew out of the white dolomitic limestone, which is barely covered by a thin soil, sprinkled with bowlders and outcroppings of the rock strata. The average temperature is 46° Fahrenheit; the rain-fall, 30 to 45 inches. The rain-water collects in natural basins, near which the early settlers placed their dwellings, but as population increased the supply soon became insufficient, and cisterns were built. These were left open, and in summer covered with algæ, and defiled by the putrid streams from the numerous dung-heaps and surface-drainage that was allowed to flow into them.

For a hundred years slight efforts have been made for improvement. The use of cement linings and of tiles in place of thatch have been beneficial, but the supply falls short every summer, and necessitates toilsome carriage from the distant valley up the steep mountain-slopes. Three remedies presented themselves—artificial reservoirs on a large scale, deep wells, or pumping-engines by the valley-streams below. The last seemed most feasible. The king of Wurtemburg authorized an attempt to supply in this way sixty towns, containing 27,500 inhabitants, at a cost of 1,500,000 gulden. Eight streams were selected, and the region divided in eight corresponding districts. In addition to the inhabitants, the stock was to be provided for at an estimate of 40 to 50 liters daily for horses and cattle, and 20 to 25 for sheep, hogs, and young stock. The first proposition from the royal council met with strenuous objections from the inhabitants; the cost was too great; the supply insufficient, &c., &c., showing a want of confidence in the whole scheme. The town of Justingen alone, by the efforts of Justice Fischer, expressed a willingness to make the experiment in connection with two neighboring villages, Ingstetten and Hansen. Work was commenced on the 11th May, 1870, and on the 18th February, 1871, though the thermometer was near zero, the water gushed from the hydrants in the high Alps amid the rejoicings of the inhabitants who gathered from far and near to witness the wonderful sight. Communities that strongly opposed the innovation now begged for its introduction, and the government engineer was accordingly instructed to execute the work as rapidly as circumstances would permit. About twenty square miles have been included in the system, at an average cost of 30 florins per head, of which one-fourth is defrayed by the general government. The yearly running expenses are about 2 florins per head, the water being raised by overshot or breast wheels; and the increased value of land, the capacity for keeping more stock, and security against fire, are amply recompensing the government and people for the outlay.

French agriculture in 1874.—The *Journal Pratique d'Agriculture* says that France during the last year, on the whole, had good harvests of grain, but very poor ones of forage plants. The winter was of moderate temperature, succeeded by severe spring frosts, occurring as late as May, and inflicting serious injury upon grapes and other fruit. The high temperature of summer, though not injurious to wheat, considerably reduced the yield of oats, barley, and mowed crops. The lack of forage shows its legitimate results in the condition of farm-animals in different regions of the country. Scarcity of food compelled the marketing of live-stock with very imperfect fattening. The destructive *Phylloxera* ravaged the southern vineyards, while the silk industry was embarrassed by the presence of insect enemies. Agricultural hand-labor in some departments was in unusually short supply, and commanded exceptionally high wages. In the agricultural regions where the *Phylloxera* caused

the pulling up of the vines, labor was superabundant, but here proprietors and laborers were stricken by the same blow. Upon a general review of the situation, the editor strongly dissents from the official statement of President McMahon that the agricultural production of 1874 was unexampled in the history of France.

Those parts of the country devoted to sugar-beet culture have but little to complain of on the score of crops. They were favored with seasonable weather, and contributed largely to feeding the population by furnishing employment for labor, feed for live-stock, and fertilizing refuse for the soil. The journal, however, complains of the heavy excise duty upon beet-sugar, which has approached that extreme limit in which it ceases to be productive to the treasury. Those parts of France which, from lack of labor, capital, and fertilizers, failed to put in a large crop of sugar-beets will long remember the droughts of 1874. The failure of forage-crops was a severe blow to the farming interest. Many intelligent and practical agriculturists are directing special attention to green maize as a forage-crop, though lucerne, clover, sainfoin, roots, &c., are by no means to be neglected. Maize, however, is recommended for those regions which are not favorable to the production of sugar-beets and their transformation into sugar and alcohol.

During the year a great impulse was given to the trade in fertilizers more or less chemical in their character. Preparations of nitrogen, phosphates, and potassa were extensively used in all sections of the country. The necessity of restoring to the soil all the elements extracted from it was more generally recognized. Natural manures were supplemented with commercial fertilizers. Chemical science has simplified its processes of analysis and multiplied its agencies of investigation through agronomical stations and other institutions. The fertilizing preparations offered the agriculturist have been analyzed at small cost and their true value indicated. It is regretted that Peruvian guano was not subjected to the same test, and that its specific value as a fertilizer was not authoritatively ascertained before going into the hands of the cultivator.

The trade in agricultural implements and machinery seems to have opened upon a new era during the last year. Harvesters, horse-rakes, mowers, drills, straw-cutters, and root-cutters were disposed of in greatly increased number and variety. The steam-whistle was heard in the field. Rival machinery was subjected to numerous public trials. Hand-labor is yielding before machinery.

The improvement of animals for butchery continued, and numerous large regional fairs were held for the exposition of live-stock generally. A new *école des haras* was organized for the multiplication of horses suited to the labors both of war and of peace. The Journal does not very highly appreciate the necessity for this measure in view of the excellent veterinary schools which furnish ample instruction to horse-raisers. It is objected that this measure will do injury by weakening still further the association of the horse-raising interest with general agriculture.

Several large agricultural congresses were held at different points in the country for the discussion of matters of importance to the agricultural interest, such as the reclamation of land, the raising of horses, the preservation of vines, the establishment of agronomical stations, &c. A viticultural congress and a sericultural congress, both held at Montpellier, brought together the leading men in those important branches of French industry.

The Journal complains of the mismanagement of the agricultural school

of Montpellier, and reiterates the general wail of French agronomists over the suppression of the National Agronomic Institute of Versailles. The regional schools, though excellent in their local sphere, can never meet the necessities of agriculture, which demand a national agronomic university of the highest character.

The ministry of agriculture was reconstituted in its higher official *personnel* as well as in its staff of inspectors. The Journal, however, seems to draw but little consolation from this fact, as it suggests a variety of abuses to which the new organization is liable. Among these, political influence is especially dreaded. Yet great hopes are conceived from the high character of the leading agronomical minds of France, and the thorough organization of the agricultural interest. A more intelligent use of capital and labor promises more hopeful results for the future.

SHIPPING CRANBERRIES TO ENGLAND.—Efforts have recently been made by the New Jersey Cranberry Growers' Association toward establishing a permanent business in shipping cranberries to England. It is hoped by this means to substantially enlarge the general market for that article, and to check the downward tendency of prices consequent on the increase in cranberry-cultivation. In the latter part of 1874, Mr. P. T. Quinn, on behalf of the association, visited firms in London and Liverpool with a view to trade arrangements. He found that American cranberries were virtually an unknown article in the London market, but better known in Liverpool. A business house in the latter city informed him that eight years ago five barrels of cranberries would have filled demands of that market, and that in 1873 over one hundred barrels of the fruit were sold there. He remarks that one great difficulty in the way of introducing the raw fruit into England is the entire want of knowledge there respecting proper methods of preparation for table use. Mr. Quinn concludes his report to the association by saying that it will require time, perseverance, and some outlay to fairly introduce American cranberries into England, but that, with well-directed efforts, a large demand for them can be created in that market. Other papers emanating from the association show that some small shipments made to England by that organization at the close of 1873 were unremunerative, and that the lateness of shipment contributed largely to the result. At the time of Mr. Quinn's visit cans of superior cranberry sauce or jam were distributed by him among members of the English press and other parties, and elicited warm commendation. More recently a certain London firm had been constituted the foreign agent of the association.

In a letter to the Commissioner, in March, 1875, from Mr. E. W. Crane, of Caldwell, N. J., a gentleman prominent in the cranberry interest, he says:

> Until within the last eighteen months no organized effort had been made to introduce American cranberries into European markets, though small lots had been shipped, generally at a loss, by private individuals. My own firm (there being at the time no organization disposed to undertake the enterprise) sent specimens of our fruit in the natural state, and also prepared in various ways, to the Vienna Exposition, where they attracted much attention and received an award.

The large American cranberry, *Vaccinium macrocarpon*, is not an inhabitant of European countries. England, Scotland, and northern countries of the European continent possess, instead, the small cranberry, *Vaccinium oxycoccus*, (*V. palustris*, or *V. vulgaris*,) which is found also in our peat-bogs from New England to Wisconsin, and is not in this country considered a marketable article.

PROTECTION TO FARMERS.—The legislature of Vermont recently passed an act constituting a board of commissioners, whose duty it is

to examine, from time to time, and report upon the various commercial fertilizers offered in market within the State. They are expected to ascertain and report the component parts and the intrinsic value of each. The example is a good one for all the States to follow.

WHEAT FOR PORK.—A correspondent in Marion County, Oregon, reports that, in that section, when the price of wheat is low, farmers find they can profitably feed it to hogs, since wheat makes finer pork than any other feed. Some of the best farmers believe it always pays to feed it to hogs when pork will bring 6 cents. The present price is 6 to 7 cents net, and the price of wheat 65 cents.

PROTECTION TO THE BANKS OF THE OHIO.—Mr. J. H. Mather, of Washington County, Ohio, sends to this Department the following communication on this subject:

Every year the river encroaches more and more upon its banks, and thousands of acres of valuable land are annually lost. A simple, practical method of preventing abrasion has been tried by Mr. A. P. Sherman, which now, after thirteen years, gives perfect satisfaction. Mr. Sherman's land lies on a point in the river where the current exerted its full force in washing away the bank. Finding it was washing away so fast that his house was in danger, he determined to prevent further encroachment. When the river was low he set, between the foot of the bank and the water, three rows of posts, 10 feet apart each way. The posts were 6 inches in diameter, 7 or 8 feet in length, and set in the ground five feet deep. He then scattered brush between the posts, care being taken, in cutting and placing, to make it compact as possible. He next pressed it down and confined it by placing over it poles, crossing each other at right angles, and pinning them to the posts. The object of the brush was, to form a lodging-place for the earth washed down from the banks, and to retain the sediment deposited by the water. After the next spring-freshet had subsided the brush was covered with a deposit of sand. In this he planted willows thickly, and protected them from the depredations of cattle. He has never since put any work on it. Now he has a regular grade from the top of the bank to low water, and the bank, instead of washing away, is gaining steadily every year. For several years he has been getting hay from what was formerly the naked beach. His river-front is 22 rods in length, and he estimates the cost of the work and material at not more than $100. For those who have the materials on their own premises it of course would be less.

It is the more important that the banks of the Ohio should be protected, from the fact that the earth washed from them helps to form the bars which are such obstructions to its navigation; moreover, if they were protected the river would become narrower and its channel be deepened. The shoals of the Great Kanawha, which were dredged during the late war, have not yet filled up, because the banks are protected by the timber that has been allowed to remain upon them. If the shoals of the Ohio were to be dredged and its banks protected all along its course, it would be many years before they would fill up. In that case the Government would be saved much of the expense which it is annually incurring for its improvement, and many thousands of acres of valuable land would be reclaimed.

BEET-SUGAR IN EUROPE.—M. Licht, a German statistician, estimates the beet-sugar crop of Central and Eastern Europe for the last two seasons as follows:

	1873–'74.	1874–'75.
	Tons.	Tons.
Zollverein	288,972	255,000
Austro-Hungary	169,000	140,000
Russia and Poland	150,000	130,000
Belgium	70,366	65,000
Holland, &c	35,000	30,000
	713,338	620,000

These figures show a falling off of 93,338 tons.

It is stated in the Journal d'Agriculture Pratique that the amount of sugar taken in charge after defecation, in France, during the first eleven months of 1874 was 237,798 tons, against 206,288 tons in the twelve months of 1873. It is estimated in certain quarters that the French product of raw sugar during the season of 1874–'75 will reach

450,000 tons. In 1865 the export of French raw sugars was valued at 8,000,000 francs; in 1869, 10,000,000 francs; in 1872, 47,000,000 francs. The export of refined sugars rose from 68,000,000 francs in 1869 to 105,000,000 in 1872; 108,000,000 in 1873; and 130,000,000 during the first eleven months of 1874.

MONEY-VALUE OF AGRICULTURAL STATISTICS.—Mr. G. W. Hunt, corresponding secretary of the agricultural society in Marion County, Oregon, states that the farmers in that section are accustomed to turn the statistics of this Department to profitable account; that is, they are largely influenced by them in deciding what crops and other farm-products to raise for market. As a rule, the result proves the basis of calculation a safe one. By way of illustration, he instances that when our first of January statistics indicate a prospective decrease in pork raised on the Atlantic slope, they take the hint and feed every shoat and pig they can muster. This hint has been acted on for several years with success.

CULTIVATION OF SUGAR-CANE IN INDIA.—In the Shahjah-anpur district 41,584 acres, being about 6 per cent. of all the land under cultivation in the district, are reported as planted with sugar-cane. The culture is mainly confined to the central and northern parts. In upland cultivation the land receives from five to fifty plowings, the number varying according to the circumstances and the resources of the cultivator. In estimating expenses, twenty plowings are assumed, costing 8 rupees per acre. The fertilizer used is from heaps collected outside of each village, the main ingredient being ashes. The quantity varies according to the efficiency of the planter in gathering it rather than the requirements of the crop. The ordinary limits are 5 to 8 tons per acre, and the average cost per acre about 1 rupee 8 annas. It is sometimes applied after planting and worked in when hoeing. On the ground of economy, the top portion of the cane alone is used for planting, since that is immature and contains very little juice. As each cultivator saves his own seed its value is not estimated in the cost of cultivation. These seed-canes are cut about one foot in length. In planting, a man follows the plow and places them lengthways along the furrow at intervals of about a foot. The distance between rows is not given. The cost of planting is put at 1 rupee per acre. Irrigation is seldom required before planting. The number of subsequent waterings depends on the season and the means of the planter; the extremes being 1 and 3, the average may be placed at 2, of which the cost, including wear and tear of machinery, is estimated at 9 rupees 7 annas per acre. The cane is hoed about three times before irrigation and once or twice after each watering; in all 6 or 7 times, the average cost being 5 rupees 8 annas. The growing canes are usually, though not invariably, tied up. Stalks from the same stool, or those from two or three adjoining stools, are tied together; cost, 8 annas. The cane is cut close to the ground, and at the same time the leaves and arrows cut off and also the top pieces for seed. The cutters are always paid in kind, receiving the arrows (used as feed for cattle) and five canes per day. As the part which goes to the cutter is not taken into account in estimating the product, no allowance is made for expense in cutting. The average cost per acre of carting the product to the cane-mill is 2 rupees 8 annas, and the annual rent of land per acre, 15 rupees; total cost of the product of an acre at the mill, 43 rupees 7 annas. As the value of a rupee is about 46 cents, $43\frac{7}{16}$ would be just about $20.

In the river-valleys manure is seldom used and irrigation not needed,

but the crop is inferior in quantity and quality and liable to destruction by floods.

ORANGE AND BANANA PLANTING IN FLORIDA.—The following statements are condensed from a paper on the production of semi-tropical fruits, by J. H. Bostwick, United States inspector of customs. The present number of bearing orange-trees in Florida is estimated at 50,000; the number of groves averaging 100 trees each, at 100,000; to which are to be added many larger groves in which the number of trees ranges from 200 to 7,000. The estimated increase of orange-groves in the State, in 1874, was 25 per cent. The larger portion of the orange-crop goes to Savannah and Charleston, from whence it is distributed by steamers to northern cities, and by rail to the interior. A smaller portion goes to Nashville, Louisville, Cincinnati, and other large cities. The production of bananas, mainly limited to the southern section of the State, has proved quite successful and is extending. The plant is easily propagated. One cultivator in Marion County has a thrifty plantation of 12 acres, and it is estimated that the area covered by plants in the State equals 500 acres, and that the number of growing plants exceeds 300,000.

ORANGES ON THE APALACHICOLA.—It is reported that orange-culture is very successful, and is rapidly extending, on both sides of the Apalachicola River, in Liberty and Calhoun Counties, Florida. There are now large numbers of thrifty young orange-groves in that locality, many of them not yet in bearing, but coming forward rapidly. It is claimed that results have already proved both soil and climate to be specially adapted to the production of oranges in Middle Florida. The following are instances of the rate of production reported for the last season: One orchard of 40 trees produced 85,000; 16 of these trees, occupying $\frac{1}{16}$ of an acre, produced 40,000; from another orchard of 60 trees, over 104,000 were shipped; some trees in both these orchards yield, annually, 6,000. From a third orchard of 40 trees 75,000 were shipped; a fourth, of 50, yielded 57,000; and a fifth, of 20, 30,000, the product being estimated as only half an average crop. One grower reports that he realized $900 from six trees; and another, that he realized over $100 from one tree. It is claimed that, as the soil is richer here than on the Saint John's, the trees mature earlier, and bear more fruit than in Eastern or Southern Florida. It is said that $10,000 has been offered for a young orchard of 200 trees not more than four years old.

CO-OPERATION IN THE SALE OF LIVE STOCK.—The *Sangamon County* (Illinois) *Stock and Produce Sale Association* was organized August 1, 1874, by about forty representative farmers of the county. The object of this enterprise is to bring together the producer and consumer of live stock and other farm-products, and to eliminate, as far as possible, the large profits of middlemen, especially in commissions, expenses of shipment, &c. Regular auction-days are designated, and every facility is secured for the sale of animals at reasonable prices, regulated by the association. The membership in October consisted of 118, with numerous additions since. Four monthly sales have been held since the organization, and will be repeated during each month of the year. E. F. Iles is the president, and Charles F. Mills secretary. Both these gentlemen reside in Springfield, Ill.

SHIPMENTS OF BUFFALO-BONES.—Mr. T. F. Oakes, general freight-agent of the Kansas and Pacific Railway, reports to this Department that, in 1874, 3,160,000 pounds of buffalo-bones were shipped over that

road and its connections. Mr. M. L. Sargent, general freight-agent of the Atchison, Topeka and Santa Fé Railroad, reports that, in the same year, buffalo-products were shipped over that road as follows: pounds of bones, 6,914,950; of hides, 1,314,300; of meat, 632,800; and in 1873, of bones, 2,743,100; of hides, 5,180,480; of meat, 1,617,600.

BUTTER-MAKING.—A correspondent in Ashfield, Franklin County, Massachusetts, states that the principal incomes, in that strictly agricultural town, are from butter and beef. The butter is packed in circular boxes, holding about 10 pounds, and costing 11 cents each. It is sent, through "the storekeeper," to commission merchants in Boston. The freight and commission amounts to about 3 cents per pound. In the winter, good lots bring producers 47 cents per pound; the price declines to 33 cents in the summer.

FORAGE IN ARKANSAS.—Our correspondent in Garland County communicates the results of experiments by him in raising pea and corn forage. On a lot of two and a half acres, immediately after taking from it a crop of oats, he sowed and plowed in peas; on two and a half acres of new ground he sowed corn broadcast. The expenses were: Putting in the peas, $12; clearing, fencing, and breaking up the corn lot, $35; gathering and housing both crops, $8.60; total, $55.60. Returns: Seven loads of pea-forage sold, at $10 per load; twenty-eight loads of corn-forage, exchanged for 10,000 feet of fencing stuff, valued at $15 per thousand; sufficient forage reserved for wintering nine head of cattle, estimated at $180; total, $400; gross profits, $344.40. The corn was cut when about waist-high, left in the sun two days, and then housed or stacked. The pea-vines are put in an inclosure, with a tight inclined floor, and 6 inches above that a floor of poles. By trampling the vines, the peas are shelled out, roll down, and are gathered into sacks.

MARKET-PRICES OF FARM-PRODUCTS.

The following quotations represent, as nearly as practicable, the state of the market at the beginning of the month.

Articles.	February.	March.
NEW YORK.		
Flour, superfine State.....per barrel..	$3 90 to $4 30	$4 25 to $4 75
extra State.....do.....	4 75 to 5 30	4 80 to 5 25
superfine western.....do.....	3 90 to 4 30	4 25 to 4 75
extra to choice western.....do.....	4 65 to 8 00	4 80 to 8 00
common to fair southern extras.do.....	4 75 to 5 50	4 80 to 5 50
good to choice southern extras.do.....	5 55 to 8 00	5 55 to 8 00
Wheat, No. 1 spring.....per bushel..	1 18 to 1 25	1 16 to 1 19
No. 2 spring.....do.....	1 09 to 1 12	1 09 to 1 14½
winter, red, western.....do.....	1 20 to 1 27½	1 22 to 1 27
winter, amber, western.....do.....	1 25 to 1 28	1 22 to 1 27
winter, white, western.....do.....	1 27 to 1 32	1 25 to 1 34
Rye.....do.....	91 to 96	84 to 94
Barley.....do.....	Nominal	1 05 to 1 30
Corn.....do.....	83 to 84½	80 to 84½
Hay, first quality.....per ton...	15 00 to 20 00	15 00 to 20 00
second quality.....do.....	13 00 to 14 00	13 00 to 15 00
Beef, mess.....per barrel..	9 50 to 10 50	9 50 to 10 50
extra mess.....do.....	10 50 to 12 00	10 50 to 12 00

Market-prices of farm-products—Continued.

Articles.	February.	March.
NEW YORK—Continued.		
Pork, mess ..... per barel..	——— to $19 75	$19 35 to ———
extra prime .....do.....	$15 00 to 15 50	14 50 to $15 00
prime mess .....do.....	18 00 to 18 25	18 00 to ———
Lard .....per pound..	13¾ to 14	13¾ to ———
Butter, western .....do.....	16 to 30	16 to 28
State dairy .....do.....	27 to 40	22 to 40
Cheese, State factory .....do.....	14 to 16½	14½ to 16¾
western factory .....do.....	12 to 15½	12½ to 16½
Cotton, ordinary to good ordinary ....do.....	12¾ to 14⅜	13⅜ to 15⅜
low middling to good middli'g .do.....	14⅞ to 16¼	15⅞ to 17⅛
Sugar, fair to prime refining .....do.....	7⅜ to 8⅛	7⅝ to 7⅞
Tobacco, lugs .....do.....	10½ to 13¼	10 to 13
low leaf to medium leaf .....do.....	12¼ to 17	12¼ to 17
Wool, American XXX and picklock .. do.....	60 to 65	60 to 65
American X and XX .....do.....	52 to 57	52 to 57
American combing .....do.....	57 to 62	57 to 62
pulled .....do.....	30 to 45	30 to 45
California, spring-clip .....do.....	30 to 37	30 to 37
California, fall-clip .....do.....	17 to 27	17 to 27
BOSTON.		
Flour, western superfine .....per barrel..	4 00 to 4 50	4 25 to 4 50
common western extras .....do.....	4 75 to 5 00	5 00 to 5 25
red wheats, good to fancy northwestern .....per barrel..	5 00 to 8 50	5 25 to 8 00
white wheats, good to fancy western .....per barrel..	5 50 to 7 50	5 50 to 8 50
southern family .....do.....	6 50 to 8 00	6 50 to 8 00
Corn .....per bushel..	85½ to 88	87 to 90
Oats .....do.....	67 to 70	70 to 74
Rye .....do.....	95 to 1 00	95 to 1 00
Barley .....do.....	1 20 to 1 95	1 20 to 1 60
Hay, eastern and northern .....per ton...	15 00 to 23 00	22 00 to 23 00
choice western .....do.....	21 00 to 22 00	21 00 to 22 00
Beef, mess .....per barrel..	10 50 to 12 00	10 50 to ———
Beef, extra mess .....per bushel..	12 50 to 14 00	——— to 13 00
family .....do.....	16 00 to 17 00	16 00 to 17 00
Pork, prime .....do	17 00 to 17 50	16 00 to 16 50
mess .....do.....	21 00 to 21 50	20 00 to 20 50
Lard .....per pound..	14⅛ to 14¾	14½ to 15
Butter, New York and Vermont .....do.....	27 to 36	23 to 34
western .....do.....	20 to 31	18 to 28
Cheese, New York and Vermont factory-do.....	14 to 16½	14½ to 16½
western factory .....do.....	13½ to 16¼	14 to 16½
Sugar, fair to good refining .....do.....	7⅛ to 8⅝	7⅝ to 7⅞
Cotton, ordinary to good ordinary ....do.....	12¾ to 15	13½ to 15½
low middling to good middling .do.....	15 to 16½	15¼ to 17
Wool, Ohio and Pennsylvania .....do.....	50 to 60	50 to 60
Michigan .....do.....	47 to 53	47 to 53
other western .....do.....	45 to 52	45 to 52
pulled .....do.....	25 to 55	25 to 55
combing fleece .....do.....	37 to 65	58 to 65
California .....do.....	15 to 40	15 to 40
PHILADELPHIA.		
Flour, superfine .....per barrel..	3 50 to 4 00	3 50 to 3 75
Pennsylvania extra to choice ...do.....	4 00 to 5 75	4 00 to 5 75
western extra to choice .....do.....	4 50 to 5 75	5 25 to 6 00
Wheat, white .....per bushel..	1 25 to 1 32	1 25 to 1 31
amber .....do.....	——— to ———	——— to ———
red .....do.....	1 15 to 1 18	1 16 to 1 20

Market-prices of farm-products—Continued.

Articles.	February.	March.
PHILADELPHIA—Continued.		
Rye ..... per bushel	$0 95 to ———	$0 95 to ———
Barley ..... do	1 40 to $1 50	1 40 to $1 45
Corn ..... do	77 to 79	79 to 81
Oats ..... do	62 to 66	66 to 67
Hay, prime baled ..... per ton	21 00 to 22 00	21 00 to 22 00
baled, common to fair shipping .. do	20 00 to 21 00	20 00 to 21 00
Beef, western mess ..... per barrel	7 00 to 9 00	7 00 to 9 00
extra mess ..... do	8 00 to 9 00	8 00 to 9 00
Warthman's city family ..... do	16 00 to ———	16 00 to ———
Pork, mess ..... do	19 50 to 20 00	19 50 to 20 00
prime mess ..... do	17 50 to 18 00	18 50 to 19 00
prime ..... do	17 00 to 18 00	17 00 to 18 00
Lard ..... per pound	13⅝ to 18	13⅞ to 17½
Butter, choice Middle State ..... do	32 to 40	35 to 40
choice western ..... do	28 to 31	26 to 30
Cheese, New York factory ..... do	16 to 17	16 to 17
Ohio factory ..... do	15 to 16½	15 to 16
Sugar, fair to good refining ..... do	7⅞ to 8⅛	7⅝ to 8
Cotton, ordinary to good ordinary .... do	12¾ to 14¼	13 to 14⅝
low middling to good middling .. do	14¾ to 16¾	15½ to 17½
Wool, Ohio X and XX ..... do	52½ to 57	54 to 56½
other western ..... do	33½ to 54	49 to 56
tub-washed ..... do	60 to 62½	54 to 61
pulled ..... do	35 to 45	46 to 54
combing ..... do	60 to 65	58 to 66
BALTIMORE.		
Flour, superfine ..... per barrel	4 00 to 4 25	4 00 to 4 25
extra ..... do	4 50 to 6 50	4 50 to 6 50
family and fancy ..... do	7 00 to 8 50	7 00 to 8 00
Wheat, red ..... per bushel	1 14 to 1 21	1 10 to 1 20
amber ..... do	1 20 to 1 22	——— to 1 25
white ..... do	1 17 to 1 25	1 10 to 1 25
Rye ..... do	95 to 1 00	1 04 to 1 05
Oats ..... per bushel	65 to 69	65 to 70
Corn ..... do	76 to 79	79 to 82
Hay, Maryland and Pennsylvania .. per ton	16 00 to 21 00	19 00 to 22 00
Pork, mess ..... per barrel	19 75 to 20 00	19 75 to ———
extra prime ..... do	——— to ———	16 to ———
Lard ..... per pound	13¾ to ———	14½ to ———
Butter, western ..... do	17 to 32	17 to 32
eastern ..... do	22 to 35	22 to 35
Cheese, western factory ..... do	14½ to 15½	14½ to 15¾
eastern factory ..... do	15 to 17	15 to 17
Sugar, fair to good refining ..... do	7¾ to 8	7¾ to 8
New Orleans grocery grades .. do	7¾ to 8½	8¼ to 8½
Tobacco, lugs ..... per cental	8 00 to 12 00	9 50 to 12 00
common to medium leaf .... do	10 00 to 14 50	12 00 to 14 50
Cotton, ordinary to good ordinary .. per pound	14 to 14¾	——— to 14¾
low middling to middling .... do	15 to 15⅝	15⅝ to 16
CINCINNATI.		
Flour, superfine ..... per barrel	5 00 to 6 00	3 85 to 4 15
extra ..... do	4 65 to 4 90	4 65 to 4 85
family and fancy ..... do	4 00 to 4 25	4 95 to 6 40
Wheat, winter red ..... per bushel	1 08 to 1 12	1 07 to 1 09
hill amber ..... do	1 10 to 1 16	1 08 to 1 15
white ..... do	1 14 to 1 20	1 14 to 1 20
Rye ..... do	——— to 1 10	1 11 to 1 12

Market-prices of farm-products—Continued.

Articles.		February.			March.		
CINCINNATI—Continued.							
Barley	per bushel	$1 25	to	$1 55	$1 15	to	$1 32
Corn	do	———	to	68	65	to	66
Oats	do	57	to	62	59	to	63
Hay, baled, No. 1	per ton	21 00	to	22 00	20 00	to	21 00
lower grades	do	14 00	to	19 00	14 00	to	19 00
Beef, plate	per barrel	14 00	to	14 50	14 50	to	15 00
Pork, mess	do	19 00	to	19 25	18 50	to	19 00
Lard	per pound	13⅜	to	14½	13½	to	14⅜
Butter, choice	do	29	to	30	27	to	28
prime	do	26	to	28	24	to	26
Cheese, prime to choice factory	do	15½	to	16	15½	to	16½
Sugar, New Orleans, fair to good	do	7⅜	to	8⅝	7⅜	to	8⅝
prime to choice	do	8⅜	to	9¼	8⅜	to	9¼
Tobacco, lugs	do	12	to	15	12	to	15
leaf	do	25	to	37½	15	to	40
Cotton, ordinary to good ordinary	do	11⅞	to	13⅜	12¼	to	13⅜
low middl'g to good middl'g	do	14⅛	to	15¼	14½	to	15⅜
Wool, fleece, common to fine	do	43	to	47	43	to	47
tub-washed	do	49	to	52	49	to	52
unwashed, clothing	do	32	to	33	32	to	33
unwashed, combing	do	37	to	38	37	to	38
pulled	do	36	to	38	36	to	38
CHICAGO.							
Flour, choice winter extras	per barrel	5 25	to	6 50	5 25	to	6 50
common to good	do	4 25	to	5 00	4 25	to	5 00
choice spring extras	do	4 50	to	4 75	4 25	to	4 50
patent spring	do	5 00	to	9 00	5 00	to	9 00
spring superfines	do	3 00	to	3 75	3 00	to	3 90
Wheat, No. 1 spring	per bushel	———	to	94½	90	to	91
No. 2 spring	do	88	to	90⅜	85⅜	to	86½
No. 3 spring	do	82⅜	to	83	82	to	82¼
Rye, No. 2	do	94	to	97	98	to	99
Barley, No. 2	do	1 23½	to	1 28	1 13	to	1 15
Oats, No. 2	do	52⅝	to	52⅞	53⅜	to	56⅜
Hay, timothy	per ton	15 50	to	17 50	17 00	to	18 75
Hay, prairie	per ton	9 50	to	12 50	13 50	to	14 50
Beef, mess	per barrel	8 25	to	———	8 25	to	———
extra mess	do	9 25	to	———	9 25	to	———
Pork, mess	do	18 40	to	18 42½	18 20	to	18 22½
prime mess	do	16 00	to	———	———	to	———
extra prime	do	13 25	to	———	———	to	———
Lard	per pound	13½	to	13⅝	13⅛	to	13¾
Butter, choice to fancy	do	30	to	37	30	to	36
medium to good	do	23	to	26	23	to	25
Cheese, good prime factory	do	16	to	18	17	to	18
Sugar, New Orleans, com. to choice	do	7	to	9	7	to	8⅞
Wool, tub-washed	do	55	to	57	45	to	58
fleece-washed	do	46	to	48	40	to	50
unwashed	do	27	to	37	27	to	37
pulled	do	42	to	47	42	to	47
SAINT LOUIS.							
Flour, winter, common to choice	per barrel	4 00	to	7 00	4 00	to	7 00
spring	do	4 00	to	5 50	4 00	to	5 50
Wheat, white winter	per bushel	95	to	1 05	95	to	1 05
red winter	do	95	to	1 08	95	to	1 08
spring	do	87	to	98	87	to	98
Corn	do	60	to	70	62	to	71
Rye	do	1 00	to	1 05	1 00	to	1 05

Market-prices of farm-products—Continued.

Articles.	February.	March.
SAINT LOUIS—Continued.		
Barley.....per bushel..	$1 10 to $1 55	$1 10 to $1 55
Oats.....do.....	53 to 59	55 to 60
Hay, timothy.....per ton....	19 00 to 22 00	19 00 to 22 00
prairie.....do.....	12 00 to 13 00	12 00 to 13 00
Beef, mess.....per barrel..	14 00 to 15 00	14 00 to 15 00
Pork, mess.....do.....	18 50 to 18 75	18 50 to 18 75
Lard.....per pound..	12 to 14	12 to 14
Butter, prime to choice dairy.....do.....	30 to 33	30 to 33
country p'k'd..do.....	23 to 25	23 to 25
Cheese, Ohio factory.....do.....	13 to 13½	13 to 13½
New York factory.....do.....	13 to 13½	13 to 13½
Wool, tub-washed.....do.....	50 to 54	50 to 54
fleece-washed.....do.....	32 to 52	32 to 52
unwashed.....do.....	28 to 36	28 to 36
NEW ORLEANS.		
Flour, superfine.....per barrel..	4 75 to ———	4 50 to ———
extra.....do.....	5 00 to 5 75	4 65 to 5 25
choice to fancy.....do.....	5 75 to 6 75	5 50 to 6 25
Corn, yellow.....per bushel..	——— to 88	——— to 1 05
white.....do.....	86 to 87	——— to 1 02½
Oats.....do.....	71 to 73	71 to 73
Hay, choice.....per ton....	26 00 to 27 00	30 00 to 31 00
prime.....do.....	24 00 to ———	24 00 to 25 00
Beef, Texas.....per barrel..	10 50 to 11 50	10 00 to 11 50
western.....do.....	12 00 to 16 00	14 00 to 16 00
Fulton market.....per half barrel..	11 25 to 11 50	11 40 to 11 50
Pork, mess.....per barrel..	20 50 to 21 12½	19 00 to 20 00
Lard.....per pound..	13¾ to 15	14 to 15
Butter, choice Goshen.....do.....	38 to 40	35 to 38
western.....do.....	27 to 30	25 to 28
Cheese, choice western factory.....do.....	16½ to ———	16 to ———
New York cream.....do.....	16½ to 17	18½ to ———
Sugar, fair to fully fair.....do.....	6½ to 7¼	6¾ to 7¾
prime to strictly prime.....do.....	7½ to 7¾	8 to 8½
clarified, white and yellow....do.....	8½ to 9¾	9¼ to 10⅜
Cotton, ordinary to good ordinary.per pound..	12½ to 13½	13 to 14½
low middling to good middling.do.....	14⅛ to 15½	15 to 16⅜
Wool, lake.....do.....	——— to ———	——— to ———
SAN FRANCISCO.		
Flour, superfine.....per barrel..	4 00 to 4 50	4 00 to ———
extra.....do.....	4 75 to ———	4 25 to ———
family and fancy.....do.....	5 12 to 5 37½	5 00 to 5 25
Wheat, California.....per cental..	1 50 to 1 60	1 40 to 1 60
Oregon.....do.....	1 50 to 1 60	1 50 to 1 60
Barley.....do.....	1 45 to 1 70	1 25 to 1 50
Oats.....do.....	1 60 to 1 85	1 60 to 1 85
Corn, white.....do.....	1 50 to 1 55	1 60 to ———
yellow.....do.....	1 45 to 1 50	1 40 to 1 45
Hay, State.....per ton....	12 00 to 17 00	9 00 to 16 00
Beef, mess.....per barrel..	8 00 to 8 50	8 00 to 9 00
family mess.....per half barrel..	6 50 to 8 00	6 50 to 8 00
Pork, mess.....per barrel..	24 00 to 25 00	22 00 to 23 00
prime mess.....do.....	17 50 to 20 00	17 50 to 19 00
Lard.....per pound..	13 to 16½	13 to 16½
Butter, overland.....do.....	30 to 40	25 to 50
California.....do.....	40 to 50	30 to 35
Oregon.....do.....	30 to 35	20 to 25

Market-price of farm-products—Continued.

Articles.	February.	March.
SAN FRANCISCO—Continued.		
Cheese.....per pound..	$0 12½ to $0 16	$0 12½ to $0 16
Wool, native.....do.....	10 to 20	10 to 20
California.....do.....	15 to 22	15 to 22
Oregon.....do.....	18 to 22	18 to 22

LIVE-STOCK MARKETS.

NEW YORK.		
Cattle, extra beeves.....per cental..	$13 00 to $13 50	$13 00 to $13 75
good to prime.....do.....	12 00 to 12 75	11 75 to 12 75
common to fair.....do.....	8 50 to 11 75	9 50 to 11 50
average of the market.....do.....	10 25 to 11 25	——— to ———
Texans.....do.....	7 00 to 10 75	7 25 to 8 50
milch-cows.....per head..	45 00 to 90 00	40 00 to 80 00
veal calves.....per cental..	7 00 to 10 00	7 50 to 10 50
Sheep, ordinary to extra.....do.....	5 50 to 8 00	5 37½ to 7 75
Swine.....do.....	None in market.	None in market.
PHILADELPHIA.		
Cattle, prime beeves.....per cental..	7 50 to 8 00	7 75 to 8 00
fair to good.....do.....	5 25 to 7 25	5 50 to 7 25
common.....do.....	4 00 to 5 00	4 00 to 5 00
Sheep.....do.....	5 75 to 7 25	4 50 to 7 50
Hogs, corn-fed.....do.....	9 00 to 10 50	11 00 to 11 50
BALTIMORE.		
Cattle, best beeves.....per cental..	5 25 to 7 25	5 25 to 7 00
first quality.....do.....	4 62 to 5 25	4 50 to 5 25
Cattle, medium or good quality...per cental..	3 50 to 4 62	4 00 to 4 50
ordinary.....do.....	3 00 to 3 50	3 25 to 4 00
general average.....do.....	4 62 to ———	4 25 to ———
most of the sales.....do.....	4 00 to 5 50	4 00 to 5 00
milch-cows, fair to good.....per head..	35 00 to 50 00	30 00 to 50 00
Sheep.....per cental..	4 50 to 7 00	4 50 to 7 25
Swine, net.....do.....	8 50 to 9 00	9 50 to 10 25
CINCINNATI.		
Cattle, good to prime butchers' steers.....per cental..	4 75 to 5 75	5 25 to 6 00
fair to medium.....do.....	3 50 to 4 50	4 00 to 5 00
common.....do.....	2 50 to 3 25	2 50 to 3 25
milch-cows.....per head..	30 00 to 60 00	30 00 to 50 00
calves.....per cental..	5 50 to 7 00	6 25 to 7 50
Sheep.....do.....	4 00 to 6 00	4 00 to 6 00
Swine, good to choice.....do.....	7 20 to 7 50	7 00 to 7 50
common to medium.....do.....	6 35 to 7 15	6 15 to 6 90
CHICAGO.		
Cattle, extra-graded steers, 1,400 to 1,550 pounds.....per cental..	6 25 to 6 75	6 25 to 6 65
choice beeves, 1,250 to 1,450 pounds.....do.....	5 60 to 6 00	5 60 to 6 00
good beeves, 1,150 to 1,300 pounds.....do.....	5 00 to 5 50	5 00 to 5 50

Live-stock markets—Continued.

Articles.	February.	March.
CHICAGO—Continued.		
Cattle, medium, 1,100 to 1,250 pounds ..... per cental..	$4 25 to $4 75	$4 25 to $4 75
inferior ..... do.....	2 25 to 4 00	2 25 to 4 25
Texans ..... do.....	3 00 to 5 25	2 75 to 5 25
Sheep ..... do.....	3 75 to 5 75	3 50 to 6 00
Swine ..... do.....	6 25 to 7 40	5 75 to 7 30
SAINT LOUIS.		
Cattle, fair to choice native steers..per cental..	4 75 to 6 00	4 75 to 6 00
common to fair natives..... do.....	3 25 to 4 50	3 25 to 4 50
inferior to common..... do.....	2 00 to 3 50	2 00 to 3 50
Cattle, Texans, fair to choice..... do.....	2 50 to 3 50	2 50 to 3 50
Sheep ..... do.....	2 25 to 4 75	2 50 to 5 00
Swine ..... do.....	4 50 to 7 00	5 00 to 7 25
Horses, plugs..... per head...	40 00 to 75 00	40 00 to 75 00
plain ..... do.....	80 00 to 110 00	80 00 to 110 00
street-car ..... do.....	75 00 to 125 00	75 00 to 125 00
heavy draught ..... do.....	130 00 to 170 00	130 00 to 170 00
good drivers ..... do.....	100 00 to 150 00	100 00 to 150 00
extra ..... do.....	175 00 to 180 00	175 00 to 180 00
Mules, 14 to 15 hands high..... do.....	75 00 to 120 00	75 00 to 120 00
15 to 16 hands high ..... do.....	120 00 to 180 00	120 00 to 180 00
extra ..... do.....	175 00 to 200 00	175 00 to 200 00
NEW ORLEANS.		
Cattle, Texas beeves, choice..... per head...	40 00 to 46 00	40 00 to 46 00
first quality..... do.....	30 00 to 35 00	30 00 to 35 00
second quality..... do.....	20 00 to 25 00	20 00 to 25 00
western beeves ..... per cental..	4 00 to 6 50	3 00 to 7 50
milch-cows ..... per head..	35 00 to 100 00	35 00 to 100 00
calves ..... do.....	7 00 to 9 00	7 00 to 9 00
Sheep, first quality..... do.....	4 00 to 5 00	6 00 to 7 00
second quality..... do.....	3 00 to 4 00	3 00 to 4 00
Swine ..... per cental..	5 00 to 8 00	5 00 to 8 50

FOREIGN MARKETS.

WHEAT.—January, in England, was warm and damp, but February closed with heavy storms of snow and sleet, with severe frosts. This closing type of winter prevailed over Northern Europe generally. In some regions the absence of snow was regarded with apprehension as exposing the winter-grain to injury from frost. Spring planting was consequently delayed, and many of the lowland districts were helplessly swamped. The season, thus far, has baffled the calculations of the most experienced and weather-wise, but British farmers were hopeful that this rough opening of the vegetative season would be succeeded by more genial growing weather in March and April.

An advance in the wheat and flour market was noticeable in Western Europe, though the rise has not generally been of much moment. Belgium and Holland had passed their ebb-tide, while in Germany prices had improved. In Hungary, copious snow-fall protected the wheat-crop. The weekly transactions in England had increased over those of

1874. Sales of English wheat during the last week in February amounted to 59,094 quarters, averaged at 41*s.* 6*d.*, against 53,964 quarters at 62*s.* 10*d.* during the corresponding week of last year. The London averages were 44*s.* 1*d.* upon 3,584 quarters. The imports into the United Kingdom during the third week in February were 479,083 cwts. The last week in February opened upon moderate supplies of English wheat in Mark Lane, with fair arrivals of foreign, of which about a third were from Odessa and the remainder mostly from New York and San Francisco. In Paris, growers demanded from 39*s.* to 44*s.* per quarter. The wheat-trade of the French provinces was quite firm, showing an advance of 6*d.* to 1*s.* per quarter. The Marseilles market had subsided into calmness after large sales. The Belgium trade was firm, while in Frankfort the cold weather, unaccompanied by snow, made holders indifferent in offering.

In Mark Lane, London, Essex, and Kent, white commanded 44*s.* to 49*s.*; ditto, red, 42*s.* to 44*s.*; Norfolk, Lincolnshire, and Yorkshire red, 42*s.* to 44*s.* Of foreign wheats, Dantzic mixed was quoted at 50*s.* to 54*s.* per quarter; Konigsberg, 46*s.* to 53*s.*; Rostock, 44*s.* to 48*s.*; Silesian red, 43*s.* to 49*s.*; Pomeranian, Mecklenberg, and Uckermark red, 44*s.* to 46*s.*; Ghirka, 41*s.* to 42*s.*; Russian hard, 40*s.* to 43*s.*; Saxonska, 43*s.* to 45*s.*; Danish and Holstein red, 41*s.* to 47*s.*; American red, 40*s.* to 42*s.*; Chilian white, 49*s.*; California, 50*s.*; Australian, 50*s.* to 51*s.*

In Liverpool, Canadian white brought 9*s.* 1*d.* to 10*s.* per cental; American white, 9*s.* 6*d.* to 10*s.*; American red, winter, 9*s.* 2*d.* to 9*s.* 5*d.*; spring No. 1, 8*s.* 10*d.* to 9*s.*; spring No. 2, 8*s.* 4*d.* to 8*s.* 8*d.*; Californian, 9*s.* 1*d.* to 9*s.* 10*d.*; Oregon, 9*s.* 10*d.* to 10*s.*; Chilian, 8*s.* 10*d.* to 8*s.* 11*d.*

At Odessa, foreign advices being very discouraging, inferior kinds were rapidly put upon the market at rates advantageous to buyers.

FLOUR.—The imports, during the third week in February, into the United Kingdom, amounted to 132,615 cwts. The fourth week opened in good supplies of English, with fair arrivals of American in barrels. In Mark Lane, the best town households brought 36*s.* to 40*s.* per 280 pounds; best country households, 30*s.* to 31*s.*; Norfolk and Suffolk, 27*s.* to 29*s.*; American, per barrel, 21*s.* to 25*s.* In Liverpool, English and Irish superfines were quoted at 31*s.* to 35*s.* per 280 pounds; extra, 35*s.* 6*d.* to 40*s.*; French, 37*s.* to 45*s.*; Trieste, 48*s.* to 60*s.*; Spanish, 38*s.* to 39*s.*; Chilian, 31*s.* 6*d.* to 35*s.*; Californian, 36*s.* to 37*s.* 6*d.*; American, Western State and extra, 21*s.* to 23*s.* per barrel; Baltimore and Philadelphia, 21*s.* to 23*s.*; Ohio and extra, 22*s.* to 28*s.*; Canadian, 21*s.* to 26*s.* In Paris, the best flour was sold for consumption at 30*s.* 1*d.* to 34*s.* per 280 pounds.

MAIZE.—In Mark Lane, white was sold at 39*s.* to 40*s.* per quarter; yellow at 34*s.* to 36*s.* At Liverpool, new American brought 36*s.* to 36*s.* 6*d.* per 280 pounds; Galatz, 37*s.* 6*d.* to 38*s.* Large supplies of American had been received in London, yet the market had advanced 6*d.* per quarter.

GRAIN-TRADE OF ODESSA DURING 1874.

The annual *Bulletin du Marché des produits Agricoles* for 1874, issued by N. Willenz and Simon Bernstein, *Courtiers jurés*, states that the spring and summer of the year lately ended were times of only suffering and losses. The stagnation of business in foreign countries and the enormous decline in the values of grain shook the financial position

of many of the exporters at this point; but the rally of prices in autumn and the resumption of active movement have given satisfactory results. Experience has shown an important fact that, in spite of the abundance of the crops, prices fell only to a certain limit. The London speculators hoped to purchase at their own prices, but when the market touched 38*s.* per quarter there was a speedy reaction to 40*s.* 6*d.* The crops in the immediate vicinity of Odessa were, as last year, total failures.

Transactions in wool were about on the same scale as in 1873. Purchases of fine wool in grease were made partly for France and partly for Russia, at 8 to 9¼ roubles per *poud*, (15½ to 18 cents per pound.) French and Russian speculators declined to bid against agents of Austrian factories for fine washed wools, at 24 to 27½ roubles per *poud*, (46½ to 53½ cents per pound.)

Other shipping points on the Black Sea have entered into competition with Odessa. Nicolaieff has extended its sphere of operations, and Sevastopol, profiting by its natural advantages for maritime enterprize, has also entered the lists. Königsberg, in Prussia, by its railway connections, has also trenched upon a portion of the field of production hitherto marketed at Odessa. These, however, can but very little affect the main sources of supply of the Odessa trade. It is expected that the gigantic grain-producing interest of Russia will build up numerous commercial centers and primary markets. But in order to maintain her ancient prestige, Odessa must erect new buildings, enlarge her accommodations, and reduce the cost of handling grain. The railroad and navigation companies centering in the city are called upon to reduce their charges of transportation to the lowest practicable limit. The controlling authorities of these lines are credited with too much sagacity to kill the goose that lays their golden egg.

Exchanges were less fluctuating than in 1873; the English pound sterling varied from 7.29 roubles to 7.15 roubles. In French exchanges the rouble has varied from 3.46 francs to 3.52½ francs. This increasing steadiness is hailed with especial satisfaction as foreshadowing a normal and permanent relation with foreign markets. The improved condition of the imperial finances is shown by the reduced premium on gold as compared with the Russian paper currency. This premium is still too great.

The following tables will give a summary of the transactions of the last three years:

Cereals purchased and placed in warehouse.	1872.		1873.		1874.	
	Quantity.	Price in roubles.†	Quantity.	Price in roubles.†	Quantity.	Price in roubles.†
Soft wheat, tchetverts*	733, 500	7. 55 to 12. 62½	390, 300	9. 55 to 14. 62½	621, 400	5. 25 to 14. 75
Sandomirca.....do....	87, 300	9. 70 to 12. 50	38, 000	9. 75 to 14. 00	109, 100	7. 25 to 14. 12½
Ghirka.....do....	1, 363, 100	8. 25 to 13. 05	712, 000	9. 50 to 15. 00	261, 150	6. 75 to 15. 00
Do.....pouds..	749, 300	‡0. 82 to 1. 26	733, 500	‡1. 12 to 1. 40	909, 900	‡0. 69 to 1. 43
Hard wheat, tchetverts	6, 900	8. 50 to 10. 75	1, 400	13. 00 to 14. 00	3, 900	10. 65 to 12. 50
Rye.....do....	308, 500	4. 25 to 6. 62½	194, 700	5. 30 to 8. 20	252, 900	4. 45 to 7. 60
Maize.....do....	47, 300	5. 25 to 6. 62½	419, 200	5. 45 to 8. 50	11, 400	7. 62½ to 8. 00
Barley.....do....	92, 600	3. 80 to 4. 55	35, 300	4. 25 to 6. 25	82, 900	4. 50 to 6. 60
Oats.....do....	.....	.....	2, 800	3. 40 to ——	28, 600	4. 50 to 5. 75
Flaxseed.....do....	40, 900	11. 95 to 13. 80	35, 400	11. 50 to 13. 62½	33, 500	10. 50 to 13. 25
Rapeseed.....do....	22, 700	4. 00 to 6. 12½	9, 700	4. 12½ to 6. 80	36, 700	4. 50 to 6. 00
Colza.....do....	2, 600	10. 75 to 11. 50	9, 700	10. 50 to 11. 62½	7, 800	9. 62½ to 11. 65

*A tchetvert is equal to 5.5205 bushels.

†A rouble varies, according to date of coinage, from 73 to 80 cents.

‡The prices are here stated by pouds; a poud is equal to 36.1050 pounds, and a tchetvert to about 9.59 pouds.

The total receipts amounted to 2,359,200 tchetverts against 2,582,000 tchetverts in 1873, and 3,454,700 tchetverts in 1872. The decline of the last two years is attributable in part to the short crops of the regions marketing their grain at Odessa and partly to the growth of rival wheat-markets. The above tables do not embrace the receipts from neighboring farmers which pass, without the interposition of speculators, directly into the hands of the exporters.

The stocks of grains and seeds remaining in warehouse December 31, 1872, 1873, and 1874 were as follows:

	Soft wheat.	Sandomirca.	Ghirka.	Hard wheat.	Rye.	Maize.
	Tchetverts.	*Tchetverts.*	*Tchetverts.*	*Tchetverts.*	*Tchetverts.*	*Tchetverts.*
1872	140,000	30,500	693,000	135,000	171,000	53,500
1873	346,000	95,000	350,000	6,000	40,000	11,000
1874	514,000	73,500	383,000	8,000	28,000	4,000

	Barley.	Oats.	Flaxseed.	Rapeseed.	Colza.	Pease.
	Tchetverts.	*Tchetverts.*	*Tchetverts.*	*Tchetverts.*	*Tchetverts.*	*Tchetverts.*
1872	46,000	14,500	13,000	8,000	3,000	3,500
1873	13,000	11,000	11,000	11,000	9,000	1,400
1874	26,000	3,500	3,500	5,000	1,500	.....

The total amount of grains and seeds on hand at the close of the last three years was as follows: 1872, 1,194,500 tchetverts; 1873, 904,400 tchetverts; 1874, 1,030,000 tchetverts.

The export trade will be presented in a future report, and will be reproduced in a future monthly report of this Department.

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MONTHLY REPORT

OF THE

DEPARTMENT OF AGRICULTURE,

FOR

APRIL, 1875.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1875.

MONTHLY REPORT.

DEPARTMENT OF AGRICULTURE,
STATISTICAL DIVISION,
April 19, 1875.

SIR: I respectfully present for publication the matter for the April report, comprising a digest of returns showing the condition of winter-wheat; those illustrating the status of farm-animals at the close of winter, and the diseases and losses of such stock during the past twelve months; the monthly records of prices of farm-products in this country and in Europe; and material from the Divisions of Chemistry, Entomology, and Botany.

J. R. DODGE,
Statistician.

Hon. FREDERICK WATTS,
Commissioner.

DIGEST OF APRIL RETURNS.

WINTER-WHEAT PROSPECTS.

The area in winter-wheat appears to have been increased last fall about 7 per cent. A small portion of this area, partially or wholly destroyed by the severity of winter, will be replaced by other crops; how much, will depend upon the vicissitudes of April weather and the pressure of spring work. The Middle States made a very small increase—2 per cent. in Pennsylvania, 1 in New York, with a decrease of 4 per cent. in Delaware; an aggregate increase of about 135,000 acres. The Southern States, from Maryland to Tennessee, inclusive, have made a large increase, adding half a million acres to an area of three and a half millions. It is largest in Mississippi; 70 per cent. in the counties reported, 42 per cent. in those of Texas, 30 in Arkansas and Tennessee, and 26 in Georgia. Ohio counties return no increase in acreage, Michigan but 1 per cent., Indiana a decrease of 2 per cent., and Illinois an advance of 10 per cent. Missouri has enlarged her area in nearly the same proportion, and Kansas 30 per cent. in the counties reporting. The aggregate increase in acreage planted considerably exceeds a million acres, and with that of California will equal one and a half millions.

The condition of the crop, as far as can be judged by its appearance in April in the more northern latitudes, before the ground is bare and free from frost, is below an average, and far below the status of last spring. In the South generally the prospects are quite flattering, and

the crop secure against all probable contingencies excepting rust. In California a large breadth has been seeded. Prompt germination and vigorous growth have followed the winter-rains. The early-sown area is probably secure, but drying winds and the absence of the latter rains excite apprehensions of failure of late plantings. The States in the valleys of the Ohio and Missouri report inferior condition of wheat, as a result of winter-killing. Those sections in which drought prevented early seeding and sufficient root-development before winter set in, have suffered most. The protection afforded by snow has been exceedingly valuable in all the area north of the thirty-ninth parallel of latitude, the injuries sustained resulting mainly from thawing and subsequent freezing in March. In the Middle States this protection has been more uniform than in the West. The more exposed fields present a brown and lifeless appearance, but the roots are found to be sound, except in patches covered long with ice. Everywhere the superiority of wheat seeded with the drill, and the great advantage of this mode over broadcasting, are conspicuously apparent.

The winter-wheat of New England is a scarcely appreciable quantity. The covering of snow has been deep, and on the coming of April a depth of one to three feet lay upon the few fields sown, from Connecticut to Maine.

In two-thirds of the wheat-growing counties of New York a medium condition of winter-grain, so far as freed from the trammels of snow and frost, is indicated; of the remainder, there are two making reports of inferiority to every one showing superior condition. Some damage by freezing in Monroe has been done in spots where water has stood on the frozen surface. Genesee is one in which the prospect is poor, the ground being frozen in places four feet deep, and winter-killing has been severe in Chautauqua, Madison, and Schenectady. The fall growth in Onondaga was not so good as usual, and only moderate expectations are aroused by spring condition. A disposition is manifested to wait and see what April will do for the crop. In Washington 115 inches of snow in the aggregate are reported. The covering of snow has prevented the almost total destruction of the crop of the State.

Wheat in New Jersey presents an appearance of somewhat less than average promise. In Warren County a good covering of snow has made the prospect in April as good as in December last. In Burlington dry weather in autumn delayed germination and left the plants in poor condition to withstand the severity of winter. Salem and other southern counties make unfavorable returns. A similar state of the crop exists in Delaware.

A fair condition, so far as could be judged, where frosts had disappeared, is returned from twenty-five counties in Pennsylvania, and fully half the remainder report higher than average. An uninterrupted blanketing of snow has generally warded off the effects of severe cold. There have been eighty-five consecutive days of sleighing in Franklin. On the southern slopes of knolls, where the snow has melted, plants are partially destroyed by freezing. In a considerable area of the wheat-breadth the plants are brown, in some instances apparently lifeless, but the roots are mostly alive and comparatively vigorous. The drilled wheat looks well in counties in which broadcast sowing has been followed by winter-killing. The fresh lands are far greener than the old fields, and the soil in best condition in the autumn, bears now a more promising burden than the areas badly cultivated.

There has been a positive injury to wheat, by the severity of the winter, in Maryland. Few counties can claim average condition. A

better appearance than was expected in Washington is reported; there has been much injury in Frederick and Montgomery, and the other wheat-growing counties in Western Maryland. It looks well in Anne Arundel and Queen Anne, and promising in Worcester and Dorchester. In Howard, Prince George's, Calvert, Charles, and Saint Mary's the prospect is not flattering. An absence of snow and the prevalence of sleet in the tobacco-counties has been injurious to wheat-fields.

Returns from sixty-eight counties in Virginia, most of which produce wheat, indicate a condition below average. Of the returns that express a positive opinion, twenty-eight report average, twenty-seven inferior, and nine high condition. Among the more favorable returns are those from Pittsylvania, Middlesex, Spottsylvania, Orange, Madison, Craig, Matthews, Grayson, Henrico, and Greenville. Clarke presents the most unpromising appearance since 1836; in the iron-ore lands crops appear better. The coldest season in twenty-one years is reported from Spottsylvania. The absence of snow is complained of in the lower counties, with frequent and sudden changes of temperature. Clover-fallows in Westmoreland, manured with fish-guano and superphosphate, present a fine appearance, while neglected fields are bare and dry. There is a fair prospect that a more hopeful appearance will be presented in May.

There are fifty-six reports from North Carolina, and in all but four of the counties represented wheat is grown to some extent. A medium condition may be claimed for the whole area, about a dozen counties reporting above average, and as many below. The crop is quite promising in Gaston; 20 per cent. better than usual in Pitt; a good stand in Davie, the early sown being superior; above average on land well prepared in Wake; looks extremely well in Greene; better than for years in Duplin; and gives a fair promise in thirty-three other counties. Farmers are not only giving this crop great breadth, but are paying far more attention to a proper preparation for seeding. In South Carolina but little attention is paid to wheat, and the crop is somewhat below average in condition. It promises well in Greenville, Richland, Barnwell, Edgefield, and Marion.

There is a marked increase of the small area of wheat in the Gulf States, except Florida and Louisiana, where it is scarcely grown at all. Of seventy-four counties reporting in Georgia, fifty-eight refer to the wheat-crop, thirty indicating average prospects, twenty-three superior, and only five inferior condition. In McDuffie the finest condition in six years is claimed; and high expectations are raised in Dooly, Lumpkin, Oglethorpe, De Kalb, Muscogee, Gwinnett, Jefferson, White, Meriwether, Elbert, Spalding, Coweta, Baker, Macon, and Maury. In Alabama the condition is also above average, but few counties give much attention to small grain. The early sown is better than the late, and that sown on uplands better than on bottom-lands, on account of rains and overflows. In Franklin the practice of harrowing wheat promises great results. The crop is quite a promising one in Mississippi, though covering a very small area. In Smith County the wheat prospect is better than for ten years, and in Le Flore five times the area of last year is sown. In Noxubee that grown upon soil fertilized with twenty-five bushels of cotton-seed is vastly superior to that on unmanured fields. Wheat experiments in the northern part of Louisiana are more frequent than usual this year, and more promising.

There are returns from fifty-nine Texas counties, thirty-seven of which produce more or less wheat. Of these there are eighteen indicating average, fifteen superior, and only four inferior condition, which makes

Texas prospects for bread quite flattering. The crop is quite advanced in some sections, standing four feet high in early-sown fields in Fannin, while late seeding is less promising. That sown in the black soil of the wheat region is superior to the growth on other soils. A few spots in several counties appear bare or brown, destroyed by the vicissitudes of winter. In this State, too, it is said that drilled wheat invariably looks better than broadcast. In Arkansas, of thirty-two counties growing wheat, half report average condition, and all but three of the remainder above average, many of them from 20 to 50 per cent. better. Some counties have doubled their wheat-area. Of fifty-five county returns from Tennessee, forty-eight include wheat, twenty-two making it above average, twenty average, and six below. There has been too much rain, and injury to wheat from overflow. Some reporters say they never saw wheat looking so well.

Winter exposure in West Virginia has left the crop in comparatively bad condition; more than half the returns indicating inferiority, while only four give high promise.

Wheat has been injured materially by freezing in Kentucky; about one-fifth of the counties reporting better than usual, the remainder being nearly equally divided between medium and low condition in various degrees of inferiority. On old fields and all thin soils the promise is not flattering; on the richer soils, well cultivated lands, and drilled areas, the prospect is far better. There was not snow enough generally, for the best protection.

The general condition of Ohio wheat is below average, in about the same proportion as that of Kentucky. Considerable areas in flat lands are killed. That grown on the hills in the eastern part of the State is generally in fair condition. In Huron and Erie, where it was well covered, it has a promising appearance. In Sandusky the early sown is the brownest. In many localities where the top is destroyed the roots are found to be alive. In the central and western portion of the State the condition is more variable, according to degree of protection afforded by peculiarities of soil and surface and the protection afforded by snow. In Ashland wheat well put in looks well; in Henry that on sandy soil is promising; in Logan, injured by freezing and thawing, yet much of it well rooted.

Athens: Not so good as last year, but about an average condition. Many fields broadcast sown are greatly injured by freezing and thawing. Drilled wheat stands well. *Ashland:* Although put in with care and showing remarkably well in the fall, the extreme hard winter and scarcity of snow has no doubt materially injured some fields, but to what extent cannot be easily determined till perhaps near the 1st of May. *Scioto:* Wheat has been very badly injured by the severity of the winter, and but little snow to protect it. Present appearances indicate at least 20 per cent. below an average at this season of the year. *Tuscarawas:* Winter wheat and winter rye is in bad condition in consequence of the fits of extreme cold weather upon a bare surface; then again the sudden freezing of pools of water over smooth, flat surfaces and the holding of the same for a length of time, excluding the air to give it life. *Champaign:* Winter wheat is much damaged by the hard freezing and by water lying on it and being frozen on it for so long a time. The ice remained on much of the level land and in low parts of all fields for weeks, entirely killing many large patches in most of the fields. Severe cold killed a considerable part of that which was not covered with ice, it being generally of short growth, caused by the very dry weather last fall at and after sowing time.

Michigan fields were not fully emancipated from icy fetters, the ground being frozen from two to four feet, and as a rule deeply covered with snow; yet, so far as could be seen, a promising appearance was presented. Among the counties reporting quite favorably are Lapeer, Monroe, Macomb, Ottawa, Saginaw, Van Buren, and Shiawassee. That drilled is best.

Nearly half the returns from Indiana are unfavorable, and two-thirds of the remainder are only average. Drought in seeding gave a poor preparation for winter. Wheat is more injured in Ohio County than for nine years previously; is 50 per cent. below average in Scott; makes a very poor show in Washington; badly injured in Jennings; in a large number of other counties the injury is less positively asserted. In Dubois drilled wheat looks positively well; and in Cass and Clinton better prospects are reported than for several years. Specimen extracts of remarks of correspondents are given:

Dearborn: From all accounts and from personal observation, I do not think one acre in fifty of wheat will be left. It may be set down as a total failure. The same is true of what little rye was sown. *Franklin:* Winter wheat looks very badly; little snow and long-continued severe freezing. Barley is an important crop here, yielding generally more money than any other small-grain crop. It appears now to be almost entirely killed by the severe freezing. When the mercury fell below 12° there was no snow to protect grain, and barley will not endure such a degree of cold. Much of the wheat was also killed. *Fulton:* Winter wheat is one-half killed by hard freezing without snow. *Howard:* Wheat and rye have wintered admirably; the snow has disappeared and the wheat looks green and promising; no winter-killing or spewing out as last winter. Prospects 25 per cent. more favorable than last spring. *Marion:* Wheat is in first-rate condition. It has made scarcely any growth yet in consequence of the very protracted cold weather; but it is well set and the roots in a very sound and healthy condition, and I should say that present prospects are decidedly favorable for a good crop. *Ohio:* Wheat and rye are the worst winter-killed that they have been for nine years; from present appearances there will not be more than one-fourth of an average crop. *Ripley:* Winter wheat is looking very poor at this time, it being badly winter-killed from the long, dry, freezing weather, from the 1st of January until the 10th of March, 1875, when we had a deep snow. Before that time there was not two inches of snow altogether. *Spencer:* Fair average condition. We have had a severe winter, and many supposed that wheat was nearly all killed; but since spring has opened it has shown that the suppositions concerning it were erroneous. *Steuben:* Winter wheat comes out very nice. It has started out wonderfully. It was very dry last fall and did not get a good start. *Wabash:* I have examined some fields and find the roots alive, but the top looks bad just now. We have had the longest severe winter that has ever been experienced on the Wabash. Ice was twenty-seven inches thick on the river. *Warren:* Winter wheat is looking fine, and the prospect is good for a full crop. *Washington:* Several of our farmers, last season, sowed their wheat in the month of August; it came up well, and looked very well for a short time. In September it was entirely eaten up by a worm that resembled the army worm. Wheat that was sowed in the fore part of September on good ground, and drilled in, looks well. All the wheat that was sown a little broadcast and harrowed in makes a very poor show; in fact, in some neighborhoods farmers report it all killed. *Wells:* Wheat and rye look unusually well, and is not frozen out. The blades are browned, but the roots are sound.

The appearance of winter grain in Illinois is considerably below an average. The number of counties reporting this month is sixty-nine. Of these forty-eight grow winter wheat, though some of them only a small quantity; of which twenty return below average, nineteen average, and nine above. To avoid repetition, a few extracts concerning wheat have been given; and the following digest of the wheat-returns of this State will illustrate the peculiarities of the situation in April:

Alexander: It has stood better than was anticipated. Early sowing that was drilled or plowed in looks very well, but late sowing, broadcasted and harrowed in, in corn ground, is damaged badly. *Bureau:* Winter wheat and rye prospects splendid. *Crawford:* Badly injured by severe winter. *Cumberland:* Wheat and rye are both in very fair condition apparently. *Clinton:* From present appearances 25 per cent. of the winter wheat killed. *Cass:* Condition of winter wheat 50 per cent. worse than last April; winter rye 25 per cent. worse. *Clark:* Unusually good; never had a better prospect for a good crop. *De Kalb:* Wheat will be almost entirely killed; rye in fair condition. *De Witt:* Better than for some time, especially that which was sown with a drill. The past few days of warm sunshine have developed it wonderfully, and from present indications the harvest will be bountiful. *Effingham:* Wheat and rye as fine as we ever saw it. *Fayette:* Wheat and rye looking well, and the prospect is flattering for a good crop. *Franklin:* A large proportion of our wheat was sown with drills, and with but few exceptions the wheat has come through well. A much larger breadth was sown last fall, and much more pains taken in preparing the ground and putting in the seed, than has heretofore been practiced. *Ford:* Although the winter has

been unusually severe, wheat and rye look well, as far as I have seen or heard. *Grundy:* Winter wheat and rye made a very slim growth before winter set in, owing to dry fall. But the winter and spring thus far have been quite favorable, and these crops are now an average. *Hancock:* Winter wheat is much injured, I would think at this time 50 per cent., but a week or two may lessen this estimate. Rye seems to be unharmed. *Jersey:* Wheat has been injured to some extent, but the season is so backward that the true condition cannot be ascertained. *Johnson:* Owing to the extremely hard winter, the condition of winter wheat is gloomy. There are many fields that were sown broadcast that will not make half an average crop, the wheat plants being frozen out of the ground, winter killed. *Lawrence:* Rye is coming out in fine condition, while wheat is not looking so well. However, the present prospect is more favorable than at this time last year. *Logan:* Wheat is in better condition than average at this time of the year. We have had more snow than usual, which has been a protection to it. Rye in good condition, better than average. *Kankakee:* Better than usual. *Montgomery:* The farmers begin to cry out as usual that wheat is badly winter-killed, but I think from what I can learn that it will come out when warm weather sets in much better than expected. *Mason:* Wheat and rye have recovered greatly by being covered with snow during the month of March. *Macon:* Winter wheat was seriously damaged in early winter, but fields sheltered from the winds look well; as a general crop, poorer than last year. *McHenry:* The condition of winter rye unusually fine, owing to the protection given to it by a constant covering of snow. *Macoupin:* Winter wheat appears to be but little injured. *Massac:* Wheat that was sown broadcast is nearly a failure, not more than one-fourth standing; that put in with drills will be three-fourths of a good stand. *Marshall:* Winter wheat considerably damaged. Rye very poor. *McLean:* Winter wheat and rye were more than average the last of March, but dry weather since has reduced it more than 20 per cent. *Peoria:* Frozen out badly. *Piatt:* Wheat not quite as good as last spring, but where it was sown early and acquired a good growth in the fall it looks well; but little injured by the freezing of winter. Rye about the same as last spring. *Pike:* I am of the opinion that we shall have a crop of wheat. *Pope:* Winter wheat does not give promise of a good crop at the present time. *Pulaski:* Wheat suffered from freezing. *Putnam:* It is generally thought that wheat is mostly killed on account of the severe cold and dry weather in the early part of the winter. No snow fell until in January. *Richland:* The condition of wheat will average well with former years at this season. Fears that it was winter-killed have been dispelled in nearly every case. *Sangamon:* It is thought by most people that the germ is yet alive, and with favorable weather from now it will be a good crop. Rye uncertain yet, but comparative condition, I should say, not more than 75. *Schuyler:* The unusual amount of snow and cold weather—no freezing and thawing, thereby lifting the plants out of the ground—leaves the wheat in unusual good fix at this season of the year. *Stark:* Winter wheat and winter rye do not look well at present, but may improve this month. *Scott:* Farmers feel very despondent about the wheat crop. Some say they will have half a crop; others say one-third; for my own part, I think we cannot tell as yet how it will be. *Saint Clair:* Winter wheat is very good, as we had no February and March freezing and thawing weather to throw it up and freeze it out as it is called, and it now promises a full crop. *Tazewell:* Full average with the past three years. Think the prospect for a good crop above average. *Vermillion:* Wheat and rye went into the winter in bad condition, owing to the drought and chinches, but has come through without injury from freezing, is now growing and doing well, and the indications are that the crop this year will be an average or nearly so. *Warren:* The winter wheat appears to be killed, and rye looks badly. *Wayne:* The comparative condition of winter wheat and rye is good. *Wabash:* Early sown, well put in winter wheat is in good condition. Late and carelessly sown is badly frozen. *Washington:* Winter wheat is looking well. *White:* Wheat is badly frozen out. Had an extremely cold winter, with but little snow. Broadcast-sown is damaged far worse than drilled. *Williamson:* Wheat which was drilled in looks very well. The same may be said of rye, but all of either sown broadcast is nearly a failure. *Woodford:* In poor condition. We have almost abandoned the idea of ever again succeeding in raising either winter or spring wheat.

The Northwestern States, Wisconsin, Minnesota, Iowa, and Nebraska, do not grow winter wheat except in experimental patches. The ground was so well covered with snow in Wisconsin that the small area sown looks better than heretofore. In some counties in Minnesota and Iowa a little was sown with quite as good success as usual. In Appanoose, Iowa, "the drill and the snow have saved the wheat." In Des Moines a new practice has been adopted with good results, that of plowing only as deep as the drill runs and leaving the seed on a solid bed, with about three inches of mellow soil above.

Of fifty-seven counties reporting wheat in Missouri, thirty indicate average condition, twenty-two below, and only five above. The fields

looked quite brown on the opening of spring, a portion of the plants being killed outright, with an indication of vitality of root in a large proportion. The drilled areas are invariably superior to those sown broadcast. A partial thaw in March, with subsequent hard freezing, wrought much injury. Drought in the autumn prevented vigorous growth in some counties, except in the best bottoms and in well-cultivated soils, giving a poor appearance this spring to thin upland areas. Timber shelter has had a favorable influence.

There are forty-three county reports of winter grain in Kansas, of which nineteen are below average, seventeen average, and seven above. Drying north winds have been destructive since the 1st of March, killing much wheat that up to that date gave fair promise. The winter has been spoken of as the hardest ever experienced in Kansas. Some of the new counties return a very promising appearance of wheat. In Cowley a volunteer crop is springing up, which is being harrowed, and expectations are raised of a remunerative yield. The efficacy of the drill is affirmed positively and repeatedly.

Oregon produces very little winter wheat.

California wheat is put in from November to April, or in the rainy season. It cannot be called spring wheat, nor is much of it fall-sown. It is literally winter wheat, sown in winter and grown in part in winter, ripening in spring or early summer. Reports are generally favorable, with the exception that more rain is needed, and drying northerly winds are to some extent injurious. In Stanislaus, on adobe land, wheat looks well; on sandy land a lack of rain threatens to shorten the yield. In San Joaquin, it is in high condition on land summer-fallowed and sown early. Many farmers are pasturing or topping the more luxurious growths. On the west side of the river considerable rain is needed. In Alameda a great breadth is suffering from want of rain. In Contra Costa it is well seeded and growing, but the late-sown is suffering from drought. In Sacramento the crop is forward and promising. It looks well in Amador, though a little dry; is promising in Sutter, but northern winds are rapidly taking the moisture from the soil; and is in good condition in Sonoma, Kern, Nevada, Mendocino, Placer, and other counties.

CONDITION OF CATTLE AND SHEEP.

The status of farm animals for the whole country is fully up to the average of spring condition in a series of years, notwithstanding the remarkable severity of the winter, and far above average, taking into consideration comparative numbers of animals represented by the counties making the best reports. There has been no prevailing disease during the winter in any section. Scarcity of feed that could not be met by better housing and care, or purchased supplies, has been confined within very narrow limits, and though, in the section north of the thirty-sixth degree of latitude, and east of the Pacific slope, the cold weather was of extraordinary intensity and duration, the atmosphere was dry and the temperature comparatively uniform. While this induced more careful shelter and feeding, it stimulated in the animals vigor of appetite and muscle. In some localities in Texas the winter was severely cold and unusually wet, but over the greater part of the State the conditions were favorable for unsheltered and unfed stock. In the remaining Southern States winter rains were more abundant than common, occasioning much depreciation and loss among stock left to find their own shelter and food. On the Pacific slope, especially throughout California, all kinds of sheltered stock were

favored with extraordinary immunity from suffering. The weather was uniformly mild and free from hard storms. The rains were timely and gentle, and pasturage was abundant.

Almost the only drawbacks to the health and thrift of cattle and sheep, in any part of the country, have been the want of proper shelter, care, and feed. Even in sections where, from the combined ravages of droughts, chinch-bugs, and grasshoppers, scarcity of feed has been greatest, and this aggravated by cold of extraordinary intensity and duration, precaution in husbanding resources in hand, and in seasonably providing such others as could be made available either for increasing or saving feed, has resulted in bringing stock through in better condition than in previous milder winters with abundant feed, under indifferent treatment. In Kansas, cattle and sheep are reported in better condition in Leavenworth and Woodson Counties, because, feed being short, special precaution was taken beforehand to prepare for this exigency. In Labette the condition is 25 per cent. better than in the spring of 1874, because "the farmers have made the discovery that other agencies besides feed are required to keep stock in good condition. He who allows his stock to be fed in an open and bleak field, without any shelter, is surprised to find that his feed does not go very far, and that his stock, with an abundance to eat, are always poor and weak in the spring, and have a dull, rough, weather-worn look. The sad lessons of past years and the scarcity of feed in the autumn caused the farmers to prepare good shelter for their stock, and to give them unusual care by regular feeding, watering, salting, and exercise." In Caledonia and Lamoille, in Northern Vermont, under one of the severest winters known, cattle and sheep are in excellent condition, "owing, largely, to the better housing, feeding, and care." For a like reason, in Berkshire, among the mountains in Western Massachusetts, "some cattle with ordinary keeping are fit for beef." Similar reports come from representative localities in all sections visited with extraordinary cold, scarcity, or both.

Returns from the Southern States afford not a few indications that the old practice of making no antecedent preparation for stock in inclement winter-weather is being slowly, but in an annually-increasing ratio, superseded by the more humane and far more profitable economy of suitable protection from cold, storms, and starvation. In Maryland, better shelter and feeding are becoming popular. In North Carolina, cattle and sheep are beginning to receive better shelter and care, and they "show the beneficial results very plainly." In contrast with the losses, and "the pitiable existence" of the surviving, among those left to search out their own food and shelter, "the superior condition of the few cattle and sheep that have been well sheltered attests the sound economy of that treatment." In Clayton, Georgia, cattle and sheep are in improved condition, with fewer losses than formerly, "owing to the fact that farmers are making less cotton and more grain;" and in Troup, the condition is better than for years, and the losses 50 per cent. less, because of increased production of forage and better protection in cold weather. Among the profitable results is specified "not so many naked sheep, and consequently more wool." The return from Kaufman, Texas, furnishes this contrast between the results of care and neglect; while our reporter, whose stock was well provided for, lost only 1 per cent., in the county about 25 per cent. died, "owing to the severity of the winter and the neglect of farmers to provide the hay necessary to carry them through." From Arkansas, where the relative condition of cattle is worse than in any other State, and where losses from exposure and starvation have been extensive, Van Buren reports that, though the winter

has been extremely hard, yet the farmers, in view of a scarcity of feed of all kinds, took the precaution to furnish their stock with better quarters and to feed them with more regularity and care, and therefore have brought them through in good condition and with very few losses. In Tennessee, West Virginia, and Kentucky, farmers are reported as making some progress in the discovery that suitable shelter for stock in winter results in greatly-diminished losses, and a fair condition with less feed.

In all the States north of the Potomac and Ohio, and in Minnesota, stock, being generally housed, has come through the winter in remarkably good condition. Out of four hundred and eight definite returns for the condition of cattle from these States, only sixty-three are below average; and out of four hundred and seventeen for sheep, only forty are below. The reduced condition in these few instances is chiefly ascribed to local scarcity of feed; though, in southern Indiana and Illinois, quite as often to lack of shelter. The returns of condition are tabulated as follows:

States.	Cattle.					Sheep.			
	Counties reported.	Above average.	Average.	Below average.	Not specified.	Above average.	Average.	Below average.	Not specified.
Maine	10	5	4	1	.....	5	3	1	1
New Hampshire	7	3	3	.....	1	3	3	1	.....
Vermont	12	5	7	.....	.....	2	10	.....	.....
Massachusetts	9	4	5	.....	.....	3	4	.....	2
Rhode Island	1	.....	1	.....	.....	.....	1	.....	.....
Connecticut	5	.....	5	.....	.....	.....	5	.....	.....
New York	37	10	27	.....	.....	10	25	1	1
New Jersey	6	1	5	.....	.....	1	3	.....	2
Pennsylvania	43	10	24	9	.....	7	23	8	5
Delaware	1	.....	.....	1	.....	.....	.....	1	.....
Maryland	20	7	12	1	.....	4	13	1	2
Virginia	68	15	33	18	2	21	29	14	4
North Carolina	56	23	20	10	3	14	26	8	8
South Carolina	13	4	4	5	.....	4	5	3	1
Georgia	74	25	20	27	2	27	26	8	13
Florida	14	6	3	4	1	2	5	2	5
Alabama	31	12	11	8	.....	12	7	9	3
Mississippi	26	5	3	16	2	7	7	6	6
Louisiana	18	2	8	6	2	2	9	2	5
Texas	59	19	19	21	.....	19	23	6	11
Arkansas	38	4	10	23	1	7	15	12	4
Tennessee	55	14	19	22	.....	11	34	9	1
West Virginia	35	15	13	7	.....	15	16	4	.....
Kentucky	52	17	25	9	1	18	25	7	2
Ohio	59	17	31	11	.....	17	38	3	1
Michigan	34	4	23	7	.....	6	21	4	3
Indiana	49	17	19	12	1	14	27	7	1
Illinois	69	12	36	17	4	12	32	10	15
Wisconsin	25	3	19	2	1	8	12	2	3
Minnesota	33	6	21	2	4	4	22	1	6
Iowa	58	7	33	16	2	7	35	5	11
Missouri	65	8	17	40	.....	7	35	20	3
Kansas	44	19	19	5	1	5	25	3	11
Nebraska	24	.....	13	11	.....	2	12	2	8
California	22	12	8	.....	2	9	10	.....	3
Oregon	9	2	4	3	.....	1	5	2	1
Total	1,181	313	524	314	30	286	591	162	142

CATTLE.—Returns for condition in all the States foot up as follows: Total, 1,181; above average, 313; average, 524; below, 314; not specified, 30. In classifying returns, those which specify good condition without qualification (as large numbers do) are placed as average, while only those which are characterized by some stronger epithet are placed above. The general condition in the several States is sufficiently indicated by

the table. Returns from the whole northern section of the country, where the winter was severely cold but dry, often refer to the obvious fact that deficient protection increases the demand for feed as well as induces emaciation, weakness, disease, and loss, while good housing and careful feeding insure comfort, health, and thrift, but do not report any local causes affecting condition worthy of special notice. In the South, cattle appear to have suffered more than sheep from the prevalent cold rains. In Virginia, owing to this cause, counties in which cattle receive "no shelter and but little care," generally report bad condition—"poor and weak; reduced to mere skeletons." But there has been no difficulty in securing good condition with proper protection and feeding. In Buckingham, where there has been a decided improvement in management and care, "many are now in good beef," and in Page and other counties, for the same reasons, the condition is above the average. Returns of similar import come from the States farther south. In Texas, though the general condition is above average, in a few counties suffering and deaths, from want of shelter and feed, have been frightful. Titus and Kaufman report that 25 per cent. have been lost from these causes; Rusk, Wood, and Waller, that many have died; Dallas, that the loss has been fearful; and Hamilton, that the prairies are dotted with the carcasses of the dead. On the other hand, in Wilson, cattle have stood the winter remarkably well; in Collin the condition is much better than usual, owing to the dry winter; in Ashley, good beef is being taken from the range; and in De Witt many are fat enough for beef. Arkansas and Missouri report an equally dark side, with no favorable contrast. These two States are the only ones in which a majority of the returns for cattle are below average. In the former State, Garland reports that about one-third of the stock at large and fully one-half of work-cattle have died, nearly all from starvation; Independence, that all are poor and feeble, and many have died through neglect and want of feed; Baxter, that the condition is worse than for many years. In Missouri, Cass, Clay, Lafayette, Washington, and Moniteau are counties reporting very bad condition and heavy losses for want of proper protection and feed. In Iowa the dividing-line between good and bad condition coincides with that between good and bad treatment. The same is true in Tennessee, where the report from Campbell will answer for the State, namely: "Those sheltered from the cold rains look well; those not sheltered, in bad plight." In Kansas and Nebraska, owing chiefly to precaution in storing up prairie-hay, better protection, and more careful feeding—these measures being doubly stimulated by extensive failures of crops and by recollecting losses in the previous winter—cattle have been brought through in a condition above average, and with very much less sacrifice of life, vigor, and flesh than in the winter of 1874. In California, for reasons previously stated, the condition was never before excelled, probably never equaled.

SHEEP.—The condition of sheep is still better than that of cattle. In the table for condition (also in that for losses) counties reporting no sheep worthy of mention are classified with the "not specified," and all simply reporting "good condition" are under the head of "average." For all the States, out of 1,039 definite returns all except 162 are average or above. From the States north of the Potomac and Ohio, with Minnesota and Iowa, but 45 returns of condition are below, while 426 are average or above, and 57 are not specified. Relatively, as with cattle, the poorest conditions are in Arkansas and Missouri, the figures being in the former 7 above, 15 average, 12 below, and 4 not specified, and in the latter, in the same order, 7, 35, 20, and 3. Returns

from Pennsylvania indicate average condition with, few extremes. In Virginia, in counties which practice wintering sheep without shelter, some of the bad results are as follows: In Westmoreland, flocks which started in the winter fat are now thin and in low condition, and though more grain than usual has been fed, some sheep and many lambs have perished; in Greenville they have suffered greatly, while many are losing their wool, and ewes are "too poor and weak to sustain their lambs;" in Northumberland they are also poor, and the loss is 20 per cent. greater than last year, while in Cumberland it is 10 per cent. less, and the condition good, "owing to better protection." Like effects from the same causes are reported from the Carolinas and the Gulf States. In Texas, Crittenden reports that while three-fourths are poor, those properly cared for are in fine condition. In Rusk they do well when fed with turnips and cotton-seed; in Walker their condition is fine, and the lambs are healthy; in Gillespie the good condition is limited to those sheltered and fed on rainy days; in Bee, where the whether has been cold and wet, flocks in sheltered places suffered but little, but on the open plains some lost more than one-half. Dallas, Live Oak, Bexar, and De Witt are among those which return a superior condition.

The following suggestive report is from Laclede, Missouri:

The condition is better than for years. Previously most of the farmers have left their flocks without shelter or sufficient feed, and let wethers, ewes, lambs and all run together the whole year round. The result was that they "had no luck." They raised but few lambs and little wool. But last fall they generally built sheds, and so arranged them that they could separate their flocks. The consequence is that their "luck" has changed. They have raised nearly all their lambs, and the woo-lclip will be much heavier.

In Benton, Iowa, about 5 per cent. have died for want of shelter; also many in Calhoun, and "quite a number of early lambs" in Des Moines. Throughout California sheep are reported as having passed through the winter in a condition of extraordinary thrift. The return from Sacramento states that "the increase of the flocks will be greater this season than ever before known. The lambing season is well past, and good luck is reported everywhere."

LOSSES OF CATTLE AND SHEEP.

As there has been a remarkable exemption from diseases among both cattle and sheep the past winter, losses, except incidental, have resulted almost exclusively from a want of due shelter, feed, and care. The following table affords a condensed, general indication of relative losses in the several States:

States.	Cattle.					Sheep.			
	Counties reported.	Less.	Equal or average.	Greater.	Not specified.	Less.	Equal or average.	Greater.	Not specified.
Maine	10	7	3	0	0	7	3	0	0
New Hampshire	7	5	1	1	0	5	1	1	0
Vermont	12	12	0	0	0	12	0	0	0
Massachusetts	9	8	1	0	0	7	0	0	2
Rhode Island	1	0	0	0	1	0	0	0	1
Connecticut	5	4	1	0	0	3	1	1	0
New York	37	25	10	0	2	24	10	0	3
New Jersey	6	3	2	0	1	2	1	0	3
Pennsylvania	43	28	9	3	3	25	8	3	7
Delaware	1	0	1	0	0	0	1	0	0
Maryland	20	11	6	2	1	10	6	2	2

States—Continued.	Cattle.					Sheep.			
	Counties reported.	Less.	Equal or average.	Greater.	Not specified.	Less.	Equal or average.	Greater.	Not specified.
Virginia	68	45	12	8	3	43	9	10	6
North Carolina	56	32	14	5	5	30	11	5	10
South Carolina	13	7	0	4	2	7	1	3	2
Georgia	74	44	15	13	2	39	16	12	7
Florida	14	5	3	4	2	5	5	1	3
Alabama	31	14	12	4	1	14	13	2	2
Mississippi	26	8	5	9	4	10	5	4	7
Louisiana	18	9	3	4	2	9	4	2	3
Texas	59	31	11	14	3	29	10	9	10
Arkansas	38	10	10	16	2	13	10	10	5
Tennessee	55	31	12	9	3	33	11	8	3
West Virginia	35	21	6	6	2	21	5	6	3
Kentucky	52	29	15	7	1	29	14	8	1
Ohio	59	42	12	5	0	42	13	4	0
Michigan	34	19	11	3	1	18	9	4	3
Indiana	49	25	11	9	4	26	11	8	4
Illinois	69	35	15	13	6	34	15	12	8
Wisconsin	25	11	10	2	1	13	10	1	1
Minnesota	33	20	10	2	1	20	10	2	1
Iowa	58	27	17	11	3	27	15	11	5
Missouri	65	20	8	32	5	24	10	22	9
Kansas	44	33	6	5	2	30	5	1	8
Nebraska	24	11	4	6	3	9	3	5	8
California	22	17	2	0	3	17	2	0	3
Oregon	9	5	2	1	1	3	3	2	1
Total	1,181	654	259	198	70	640	251	159	131

It will be seen by the above table that in 1,111 specific returns for cattle, only 198 report losses exceeding those of 1874; and in 1,050 specific returns for sheep, but 159 are greater.

In New England the per cent. of losses, compared with the previous winter, ranges from 5 to 75 less, except that New London, Connecticut, reports the loss of sheep 10 per cent. greater, while that of cattle was 10 per cent. less. While there is no return of greater loss from New York, Steuben returns 20 per cent., Monroe and Washington 25, and Ontario, Saratoga, and Warren 50 less. In Wyoming, Pennsylvania, the losses were less than ever known; in Northampton and York, none; in Mercer, 50 per cent. less than last year.

In Virginia losses of sheep appear to have exceeded relatively those of cattle; in Northumberland, while the loss of the latter was 5 per cent., of the former it was 30 per cent. greater, ascribed to want of shelter; in Matthews the loss of sheep was unprecedentedly great; in Spottsylvania, greater than usual; in Clarke, 2 to 4 per cent. greater, "owing to blind-staggers, confined almost exclusively to ewes with lamb;" in Frederick, 40 per cent. greater; in Caroline, the loss of sheep and lambs much greater; Greenville reports a loss of cattle and sheep 10 per cent., and Gloucester 15 per cent., greater. On the other hand, the loss is less in Nelson, Charlotte, Patrick, Essex, and Cumberland, by 10 per cent.; in Dinwiddie, 20 per cent.; in Henry, 25; in Smyth and Floyd, 50; and in Craig, 75. In North Carolina, Wilkes reports losses less than in previous years, owing to better sheltering and feeding; in Mitchell, Yadkin, and Lincoln, 10 per cent. less; in Cumberland and Montgomery, 50 per cent. less; in Cherokee, 80 per cent. less. Carteret reports no loss of sheep, but the loss of cattle 125 per cent. greater; in Harnett the general loss was 50 per cent. greater. Barnwell, South Carolina, returns losses double those of the previous year. In Georgia the losses for the whole State were much less than the previous year.

The extremes of variation are great in different localities, according to treatment; in Schley they are 10 per cent. less than any year since the war, owing to better feeding; in McDuffie they are 50 per cent. less than in any winter for ten years; in Heard 50 per cent. less than last year; in Hancock, 75 per cent. less; in Scriven the loss of sheep is 100 per cent. greater, while the loss of cattle is 50 per cent. less; but in Lincoln, while the loss of sheep only equals that of last year, the loss of cattle is 100 per cent. greater. Precisely the same report comes from Santa Rosa, Florida. In Choctaw, Alabama, the loss of cattle was 25 per cent. greater, but the loss of sheep less, "owing to a statute for restraining dogs." From Mississippi, Rankin returns losses 100 per cent. greater than last year; Pike, the loss of cattle much greater than for many years. Hancock reports that the loss of cattle arises wholly from starvation, none of the farmers making any provision for feeding; Amite, that the loss in cattle greatly exceeds that of previous years; Wilkinson, that 10 per cent. of the stock have perished. In Louisiana, Avoyelles reports the loss of both kinds 100 per cent. greater; Washington, of cattle, more than 100 per cent. greater, with an average loss of sheep; in Franklin it was 90 per cent. less; in Madison, 50 less; and Richland, less than ever known.

TEXAS.—*Wood:* Many cattle have died from the severe cold weather; 25 per cent. more have died. *Titus:* Twenty-five per cent. of the cattle have starved to death, and by the time grass rises the loss will reach 33⅓ per cent. *Hunt:* Cattle, 22 per cent greater; sheep 10 per cent. less. *Gonzales:* Much less than usual. *Bell:* Much less than for many years *Angelina:* Cattle, 100 per cent. greater; sheep, equal. *Marion:* Fifty per cent. less. *Cherokee:* Less 50 per cent. *Live Oak:* Less 50 per cent. *Kendall:* Sheep 12½ per cent. greater; cattle, equal. *Coryell:* Less 50 per cent. *Dallas:* Greater 25 per cent. *Blanco:* Less 50 per cent. *Kaufman:* Greater 15 per cent; about 25 per cent. have died. *Collin:* Less 15 per cent. *Falls:* Much less. *Comanche:* Cattle, 80 per cent. less; sheep, 95 per cent. less. *Fannin:* 25 per cent. greater. *Walker:* Cattle, 100 per cent. greater. *Milam:* Loss in flesh, 25 per cent. *Ellis:* Greater 25 per cent.; all from starvation. *Ashley:* More than 90 per cent. less. *Bexar:* Less than for several years. *Panola:* 50 per cent. less.

Jackson County, in Arkansas, reports that nearly 50 per cent. have died. Losses in Tennessee have been comparatively small. In Missouri, scarcity of feed combined with want of due protection and care to make the losses heavy. Kansas is rewarded for the decided improvement reported in the care of farm-stock by greatly diminished losses. Losses in Nebraska, also, notwithstanding unusual cold and scarcity of feed, were less than in the previous winter. In the other States in the Valley of the Mississippi and Ohio, including West Virginia, there were no unusual losses worthy of special notice. In California there were scarcely any losses, and comparatively few in Oregon.

DISEASES OF FARM-ANIMALS.

All kinds of farm-animals during the past year enjoyed a marked exemption from prevalent diseases, with the exception of the class of unknown maladies loosely designated by the term "hog-cholera," which, however, presented a less formidable list of losses than the previous year. The losses from exposure and starvation consequent upon the increased severity of the winter and the failure of food-crops in many sections, are larger in those counties where the policy of merciful treatment of domestic animals has never been understood or practiced. During the past year, even horses and mules, which generally receive better treatment than other classes of farm-animals, have been allowed to perish in increased numbers. The external causes of disease, how-

ever, were much less active than the previous year, and were found most prevalent in those regions where the least care was bestowed upon farm-animals. In our "Extracts from Correspondence" will be found an instance of short-sighted policy in the defeat of the law for the protection of sheep against dogs in a county in Missouri. As long as the majority of farmers in a community can thus be arrayed against their own interests it is idle to expect any remarkable agricultural progress there.

DISEASES OF HORSES.—Horses, like other classes of farm-animals, were generally healthy during the last year, though the severe and protracted winter, with its long confinement and shortening supplies of food, produced more or less abnormal symptoms in the northern sections of the country. The most general type of disease was the catarrhal, which was noticed in all quarters of the Union. This, with other affections of the breathing apparatus, constituted the great majority of the cases of disease reported. The following is a brief classification of the horse-maladies of 1874.

Catarrhal.—The epizootic influenza, commonly called the epizooty, so prevalent two years ago, left traces of its malign influence which still exist in some sections of the country. These are found in close association with the common distemper, which appears to have been aggravated or modified by the results of the former "epizooty." There is a tendency to confound the two types of disease as though it were difficult to distinguish them. Cases of this character occurred in Oxford and Waldo, Maine, and in Addison, Vermont, but with trifling loss. Catarrhal symptoms, sometimes resembling the "epizooty" and sometimes the common distemper, are also noted in Onondaga, Washington, Genesee, Chenango, Ontario, Albany, Delaware, Monroe, and Franklin, New York; in Westmoreland, Bedford, Lancaster, Beaver, Adams, Tioga, and Forest, Pennsylvania; in Frederick, Baltimore, and Saint Mary's, Maryland; in King William, Pittsylvania, Craig, Goochland, and Washington, Virginia; in Yancey, Gates, Mitchell, and Clay, North Carolina; in Lexington, South Carolina; in Laurens, Towns, Liberty, Catoosa, Wayne, Whitfield, Echols, Walker, Wilkinson, and Franklin, Georgia; in Santa Rosa, Florida; in Mobile and Calhoun, Alabama; in Franklin, Mississippi; in East Baton Rouge, Louisiana; in Blanco, Texas; in Sharp, Arkansas; in Johnson, Loudon, Cannon, Jefferson, Fentress, Cocke, and Monroe, Tennessee; in Wirt, Tucker, and Gilmer, West Virginia; in Clarke, Bracken, Grayson, Rockcastle, Adair, and Robertson, Kentucky; in Ashtabula, Noble, Montgomery, Union, Williams, Perry, Adams, Ross, and Champaign, Ohio; in Genesee, Ingham, Kent, Ottawa, Saginaw, and Menomonee, Michigan, in Vanderburgh, Indiana; in Morgan, Illinois; in Washington, Dodge, and Sauk, Wisconsin; in Faribault, Morton, Stearns, and Winona, Minnesota; in Hancock, Iowa; in Jefferson, Miller, Macon, Marion, Pike, Platte, Bates, Christian, Scott, Howard, Holt, Franklin, and Vernon, Missouri; in Johnson, Jackson, and Brown, Kansas; and in San Luis Obispo, California.

Throat and lung affections.—Lung-fever is reported in Franklin lin, Lawrence, and Cambria, Pennsylvania; in Manatee, Florida; in Harris, Texas; in Adair, Kentucky; in Benton, Iowa; in Neosho, Kansas. The glanders affected horses to some extent in Colorado and Matagorda, Texas; in Howard, Arkansas; in Hancock, Tennessee; in Alexander, Illinois; in Buena Vista, Iowa. Farcy was noticed in Henry, Alabama. In Cherokee, Iowa, some cases of swelled throat attracted attention.

Brain-diseases.—Blind staggers, vertigo, &c., were more or less prevalent in Tyrrell, North Carolina; in Bullock, Floyd, and McDuffie, Georgia; in Columbia, Florida; in Tishemingo, Mississippi; in Angelina, Texas, where nearly every case was fatal. Post-mortem examination showed a marked congestion of the brain. This malady was also noted in Garland, Benton, Independence, and Crittenden, Arkansas, in some cases causing a loss of 10 per cent.; in Dyer, Cannon, Cheatham, Fayette, Lauderdale, Haywood, and Robertson, Tennessee; in Calloway, Graves, Hopkins, Livingston, Logan, and Simpson, Kentucky. The mortality in some of the foregoing counties was large. The disease is mostly attributed to feeding worm-eaten corn. It appeared in but one county north of the Ohio River, Pope, Illinois, where three-fourths of the cases terminated fatally. A few cases of cerebro-spinal méningitis occurred in Mercer, Pennsylvania.

Gastric diseases.—Bots, colic, &c., were troublesome in Dooly, Scriven, Henry, Towns, Catoosa, White, and Coweta, Georgia; in Columbia, Florida; in Sebastian, Arkansas; in Wirt, West Virginia; in Logan, Kentucky; in Henry, Ohio; in Clay, Nebraska. In different parts of the South, horses were poisoned by musty corn.

Charbon.—This disease was confined to the Southwest, being reported in Coahoma, Wilkinson, and Holmes, Mississippi. It was especially fatal to mules in Wilkinson, where stimulating and tonic treatment was the most successful. Its greatest prevalence and virulence was in localities where insufficient food was provided and where stinging insects were most annoying. Many protected their animals by the smoke of burning rags, stumps, brushwood, &c. In Holmes carbolic acid and lime constituted a good disinfectant. This disease decimated the working animals of Avoyelles, Louisiana, and destroyed 400 or 500 in East Feliciana, besides large numbers in Madison, West Feliciana, and Jackson. In some localities it was more prevalent than any year since the war.

Miscellaneous.—In Madison, Florida, horses suffered from swallowing sand in cropping the early grasses of spring. Rheumatism in the hinder parts is reported in Wakulla Florida. In Hays, Texas, loin disease has prevailed. "Bighead" and resulting debility are reported in Nicholas, Kentucky, Scott, Missouri, and Stanislaus, California. Buffalo-gnats killed many horses and mules in Madison, Mississippi. Only parts of the county suffered from this nuisance, the pine-timbered sections being free. Pennyroyal infusions were found to be a good preventive, while rubbing the skin with grease or oil was also effective. These insects were also troublesome in Crittenden, Arkansas. In one locality of Fayette, Ohio, the "blackwater" was observed. In Douglas and Cloud, Kansas, the failure of the corn-crop caused wheat to be fed to horses, which it is claimed produced some disturbances in the animal economy. In many other instances, in different parts of the country, improper and insufficient food subjected animals to the operation of disease by reducing their vitality. In York, Maine, horses were "used up."

Several new diseases appeared in different parts of the Union. Unusual symptoms attracted attention in New London, Connecticut, and Union, Pennsylvania, but vanished upon the opening of spring. In Cumberland, Maine, a drooping languor took some animals which subsequently fell into convulsions and died within twelve to twenty-four hours. Some fatality resulted from unknown disorder in Menomonee, Michigan. In Victoria, Texas, horses cut off from their usual winter range by boundary fences grew restless, fell away in flesh, and died in considerable numbers, but whether from disease or starvation, cannot

be ascertained. In Titus, Texas, a singular and incurable malady was observable for the first time. The symptoms were loss of sight, stupor, loss of power to void urine, skin thick, with some eruption on the belly and behind the shoulders, great thirst, hacking cough, constipation, and a general tremor throughout the system. In Columbia, Wisconsin, horses were attacked with swellings at the root of the tongue, discharging great quantities of matter. But one death had een known to result from the disease.

DISEASES OF CATTLE.—From our April reports it is evident that during 1874 no general causes of epizootic or prevailing forms of disease were operative in the country, and that where only very ordinary care in regard to food and shelter was exercised the casualties were very few. Even the long severe winter has given rise to comparatively few complaints as to diseases caused by the depressed vitality of farm animals. The greatest prevalence of disease is found in the Gulf States, where the winter is the shortest. In the New England, Middle, and South Atlantic Coast States the exceptions to general healthfulness are neither numerous nor of serious import. In the inland Southern States, in the West, Northwest, and Pacific States scarcely any forms of "prevalent" disease are noted. The cases mentioned in the following generalization are mostly sporadic and dependent upon local conditions. Among these, neglect of food and shelter is prominent.

Texas fever.—This malady is heard of from points farther east than last year. A few cases, mostly fatal, were noted in Litchfield, Connecticut, and Schenectady, New York, caused by the importation of Texas cattle from the West. Traces of the same malady are found also in McNairy, Tennessee, Boone, Kentucky, Carroll, Illinois, Cass, Missouri, and Furnas, Nebraska. The losses were much less numerous than last year and the disease showed itself at fewer points.

Murrain.—Until some authoritative exposition of cattle diseases shall have been given, embracing the local facts of all parts of the country, statistical inquiry is compelled to tolerate the unmeaning term murrain, which, with its variations, bloody murrain and dry murrain, is used to designate very diverse forms of disease. It is often used to indicate some new or startling types upon their introduction merely from the fact that no other term is suggested. The farmers of Oxford County, Maine, have been startled by some strange symptoms supposed to characterize the dreaded murrain of the West. Gradually this supposition will harden into a popular belief, and another local element of confusion will be introduced into the nomenclature of cattle disease. A disease by this name to a considerable extent affected the cattle in Floyd County, Virginia, and was noticed also in Burke and Stokes, North Carolina, and in Henry, Catoosa, Whitfield, and Walker, Georgia. Dooly gives a partial description of the malady there known as "bloody murrain"—swelling tongue and glands and frequent bloody discharges from the bowels. It is declared to be not contagious. Murrain is also reported in Lawrence, Alabama, and in Pike, Wayne, and Tishemingo, Mississippi; in Amite it swept 25 per cent. of the cattle. It is noted in Howard, Sebastian and Arkansas Counties, Arkansas. A few died in Sauk, Wisconsin. Bloody murrain is reported to a small extent in Saginaw, Michigan and Linn, Oregon. In the last three cases these are the only cases of disease reported in those States.

Black-leg.—This disease, which is present in all portions of the United States, is occasionally so prevalent as to call for special local mention. It made a serious havoc among calves in Pendleton County, West Virginia, last year, during the past winter attacking older cattle, from two

to three years of age, causing numerous deaths. Pendleton and Harrison Counties also report this malady. One herd in Carroll, Illinois, manifested the same symptoms which were also noted in Chippewa and Pope, Minnesota, in Hardin, Iowa, in Harris, Missouri, in Douglas and Howard, Kansas, and in Hall, Dixon, and Lincoln, Nebraska.

Pleuro-pneumonia.—A few cases of this disease appeared in Chester, Pennsylvania. It has prevailed extensively in the vicinity of Baltimore among the milk-dairies that supply that city for several years, and appears to be increasing, both in its range and severity. It generally breaks out about midwinter and lasts until April. It is attributed to the fact that cows are crowded into filthy, ill-ventilated stables. It is reliably stated that cows affected by this disease are sold to meat-peddlers at suspiciously low rates. These reckless triflers with human life do not hesitate to sell this poisoned material to the poorer classes of the people, thus swelling the lists of mortality. In the April report of 1874 the same nefarious practice was noticed by our correspondent in Hudson, New Jersey. It doubtless prevails more or less openly in all our great cities.

Mad itch.—This cutaneous disorder shows itself mainly in the head and neck. The animal endeavors to allay the irritation by rubbing the affected parts against trees, fences, &c.; the hair is rubbed off and the skin lacerated by repeated rubbings, but the pain increases until the animal becomes raving, refuses food, and finally dies in great agony. In Tippecanoe County, Indiana, 140 animals died of this malady, which, however, was limited to a few localities. It was also quite severe in Benton, Missouri, and destroyed a few cattle in one herd in Jefferson, Kansas.

Distemper.—This disorder is reported in Surrey, Wilkes, and Randolph Counties, North Carolina, to a small extent. In Yancey it occurred only among cattle brought from the lowlands. A few cases are also noted in Cherokee and Pickens, Georgia.

Abortion.—A tendency to abortion, especially in dairy cows, is noticed in different parts of the country. It is especially mentioned in Litchfield, Connecticut, and in Orange, New York. In Cattaraugus a dairy of 110 cows, fed upon their own skim milk, thickened with corn-meal, had twenty-three cases of abortion, while none of the neighboring dairies had a single case. A few abortions also occurred in Ashtabula, Ohio.

Milk fever.—In Rockingham a few cows in good condition were taken with milk-fever, caused by neglect of providing food and shelter at calving time. The curative treatment employed aimed at the reduction of inflammation by cooling and cathartic medicines, bathing udders in cold water, &c. The same disorder is also reported in Towns, Georgia. The same disease is probably meant by the term udder disease in the report from De Kalb, Illinois.

Miscellaneous.—In Carteret, North Carolina, some cattle in good condition died of an unknown disease. Some undefined influences in Stanly caused the death of many milch-cows in the last stages of pregnancy. Losses from new and undescribed maladies are also reported in Wayne, Georgia; Santa Rosa, Florida; Perry and Covington, Alabama; and Boone, Kentucky. In La Fourche, Louisiana, a large number, in good condition and with good appetites, died suddenly. They became very weak in the loins, and their blood was found to be thin and watery.

The black-tongue appeared in Dale, Alabama, and Jackson, Louisiana. The "salt-sickness" found no adequate remedy in Orange, Florida, and Garland, Arkansas. An occasional case was observed in Wilkinson,

Mississippi. Foot-diseases are reported in Telfair, Georgia. In Lamar, Texas, sore eyes affected some animals, occasionally destroying sight.

DISEASES OF SHEEP.—Sheep have been comparatively free from disease. But few complaints are heard from New England, and those of rather trivial character. In passing westward the dog nuisance begins to claim attention in New York and Pennsylvania, while from every quarter of the South there comes a wail of despair over the prospective annihilation of sheep-husbandry through the ravages of worthless curs. One facetious correspondent calls this nuisance the "dog-cholera." In the West such complaints are not so numerous or bitter as formerly. A correspondent in Missouri says that the State census shows in his county only 16,000 sheep for 9,000 dogs, a very inadequate provision for the canines. With the exception of lack of food and the long severe winter, which have produced frightful destruction of sheep in some localities, no general disease has been reported. The few local types reported owe their existence largely to lack of food and shelter, and to general neglect. The following is a brief abstract of the cases presented:

Foot-rot.—An occasional case of this disease is reported in Rockingham and Sullivan Counties, New Hampshire. In Berkshire, Massachusetts, it has become chronic, in a mild form, in fine-wooled sheep of high grade. It has been frequently cured, but tends to re-appear. This has caused the farmers to restock their flocks largely with hardier coarse-wooled animals. It is also noted in Onondaga, New York, Salem, New Jersey, and Frederick, Maryland, but is by no means virulent. It appears in Bandera, Texas; in Hardin, Tennessee; in Boyle, Kentucky; and in Champaign, Harrison, Logan, Mahoning, and Warren, Ohio. It appears here to be on the decline, and is mostly confined to fine-wooled sheep, causing an increased use of combing-wool animals. It is reported also in Ottawa, Michigan, Whiteside, Illinois, and in Marion, Iowa.

Rot.—This malady was very destructive in Gloucester, Virginia, and troublesome in Scott, and also in Madison, Wilkes, and Haywood, North Carolina, in Georgetown and Richland, South Carolina, in Catoosa, Whitfield, Bartow, and Murray, Georgia, and in the lowlands of Wilkinson, Mississippi. It also appeared in Harris, Texas, where it destroyed 25 per cent. of the flocks; in Franklin, Arkansas, in Cameron, Meigs, Blount, Monroe, and Jackson, Tennessee; in Grant and Barbour, West Virginia; in Montgomery, Illinois. Our correspondent, in Grant, West Virginia, has found an effective remedy in Scotch snuff.

Scab.—A few flocks in Rockingham and Sullivan, New Hampshire, were troubled with this malady. It was noted also in Suffolk, New York; in Palo Pinto, Red River, Williamson, Collin, Milam, Mason, Galveston, Victoria, Matagorda, and De Witt, Texas; in Benton, Arkansas; in Grant, West Virginia; in Whiteside, Montgomery, Crawford, and Jasper, Illinois; in McLeod, Minnesota; in Marion and Madison, Iowa. In Clinton and Jasper, Missouri, the disease was quite severe, the loss in the former amounting to 25 per cent. It is also reported in Allen, Montgomery, and Riley, Kansas; in Webster, Nebraska; in Kern, San Diego, Del Norte, Amador, Mendocino, Stanislaus, Lake, Santa Barbara, and San Luis Obispo, California; in Douglas, Oregon.

Grub in the head.—This disorder is reported in Carroll, New Hampshire; in New London, Connecticut; in Washington, New York, where 40 died in a single flock of 300; in De Witt, Texas; in Lenawee and Montcalm, Michigan.

Catarrhal diseases.—Distemper, influenza, and other catarrhal affections are reported in Spottsylvania and Prince George, Virginia, in

Yancey and Stokes, North Carolina; in Lewis, Boone, and Boyle, Kentucky; in Franklin, Mississippi.

Miscellaneous.—The goitre appeared among lambs in Ontario, New York. Montgomery, Maryland, lost one-fourth of her lambs from undescribed causes. In Vernon, Missouri, half the lambs dropped died of starvation, their ewes being too emaciated to afford them nourishment. In Greenville, South Carolina, new-born lambs in many cases were abandoned by the ewes.

The staggers appeared in Greenville, South Carolina, and in Montgomery, Illinois. Echols, Georgia, lost about one-sixth of her flocks by "sore-head." Something like "pneumonia" was seen in Mecklenburgh, Virginia. The scours is reported in Wilkes, Georgia, and Smith, Mississippi. In Pope, Arkansas, one flock was afflicted with worms—a lamb eight months old is said to have passed a tape-worm 61 feet long. In Mineral, West Virginia, some sheep died from eating laurel. In Belmont, Ohio, some sheep had parasites in the bronchial tubes. Kenton, Kentucky, lost 200 sheep by the "stiffs." Licking, Ohio, lost 10 per cent. by the "white skin." Winnebago, Illinois, reports "consumption." Flukes in the liver is noted in Douglas, Oregon.

Numerous reports of an unnamed disease have been received. In Schenectady, New York, the flocks were decimated by a disorder characterized by irregularity of the bowels and voracious appetite, in spite of which the animals became very thin. Post-mortem examinations showed the lungs shrunken and full of matter, and the intestines full of lumps and knots. Unknown diseases were more or less destructive in Beaver and Lawrence, Pennsylvania; in Wayne, Georgia; in Coffee, Alabama, where 20 per cent. of the flocks died; in Avoyelles, Louisiana, which lost 25 per cent.; in Fulton, Indiana; in Wright, Minnesota.

Our correspondent in Grant, West Virginia, claims that the Alleghany district of that county is almost impervious to sheep maladies. It is beyond doubt that a very large proportion of the foregoing cases of disease directly result from neglect.

Diseases of swine.—The record of swine diseases, though still formidable, is not equal to that of last year. In the Eastern and Middle States maladies bear, as usual, a smaller proportion to the number of animals, but unpromising symptoms seem to be advancing from the West, creating some alarm in a few localities. In the South the prevalence of epizootic types is still marked by heavy losses, but in the West the scarcity of animals in many counties cut down the number of casualties below last year's.

Cholera.—In the confusion of popular nomenclature this term is made to designate a variety of diseases, a fact prominently noted by several of our correspondents. In Lincoln County, Maine, a new malady destroyed 5 per cent. of the hogs, causing great fears that it might turn out to be the dreaded cholera of the West. In several localities in the Middle States hogs brought from the West have shown abnormal symptoms, which were at once set down as those of cholera. Such indications are reported in Chautauqua, Wyoming, and Chenango, New York; Cumberland, Dauphin, Lancaster, Chester, and Cambria, Pennsylvania. Some counties lost 10 per cent. of the stock of animals, while in others the mortality was nominal. In most cases it is specified that native hogs were free from this infliction. It was somewhat extensive in Maryland. Several farmers in Queen Anne lost

all their hogs. It was more or less prevalent also in Frederick, Baltimore, and Washington. Virginia reports it in Shenandoah, King William, Caroline, Pulaski, Pittsylvania, Spottsylvania, Mecklenburgh, Goochland, Chesterfield, Washington, Rockbridge, Northampton, Floyd, and Bedford. In these counties the scourge was comparatively light, the aggregate loss, in no case, amounting to over 15 per cent. of the animals in a county. In Gloucester the loss ranged from 25 per cent. to 75 per cent. in some sections, though the average of the county was probably not much over 10 per cent. In Rappahannock and Nansemond half the hogs died; in Southampton, 33 per cent.; in James City and Montgomery, 25 per cent. Heavy losses are also reported in some counties of North Carolina. Harnett, Polk, and Perquimans lost 50 per cent. The last county reports this loss under the head of an unknown disease, but it is probable that it was as much entitled to the name of cholera as many cases to which it was applied. Mitchell lost 40 per cent.; Madison and Columbia, 33 per cent.; Chowan and Greene, 25 per cent.; Duplin and Wilkes, 20 per cent.; smaller losses were felt in Lincoln, Gaston, Surrey, Edgecombe, Franklin, Davie, Ashe, Yancey, Yadkin, Wilson, Stanly, Caswell, Hertford, Cumberland, Currituck, Rutherford, Macon, Henderson, Haywood, and Alexander. In South Carolina, Union, Richland, and Williamsburgh lost 10 per cent. or less. In Georgia, Telfair lost 90 per cent.; Lee and Wilkinson, 50 per cent.; Dawson, Milton, Wayne, and Rabun, 33 per cent.; Dooly, Henry, Bullock, Towns, Terrell, Worth, and Montgomery, 25 per cent.; Laurens, De Kalb, Johnson, Effingham, Forsyth, Gwinnett, McDuffie, Catoosa, Pickens, Gilmer, Floyd, Lincoln, Butts, Baker, and Charlton, lost 20 per cent. or less. In Wayne an effective remedy was found in doses of turpentine and laudanum. In Florida, Santa Rosa lost 15 to 20 per cent., and Madison 5 per cent. In Alabama, Lawrence lost 75 per cent.; Dale, 67 per cent.; Crenshaw and Mobile, 50 per cent.; Calhoun, 33 per cent.; Covington, 30 per cent.; Coffee, 25 per cent.; Bibb, Saint Clair, Clarke, Lowndes, Madison, Pike, De Kalb, Bullock, Henry, and Autauga, 10 per cent. or less. In Mississippi, Le Flore and Grenada lost 50 per cent.; Pike, Attala, and Smith report a considerable mortality. In Louisiana, this malady was confounded with the charbon in Washington, where the loss was 50 per cent.; it also raged in East Feliciana, Morehouse, and Bossier. In Texas, Titus lost 60 per cent., and found no effective remedy; Red River and Fannin, 50 per cent.; smaller losses in Smith, Lamar, Kaufman, Harris, Dallas, Blanco, Austin, and Victoria. The range of mortality grows somewhat smaller in the inland Southern States. In Arkansas, Garland and Pulaski lost 50 per cent.; Stone, 20 per cent.; Dallas, Pope, and Sebastian, Howard and Franklin, smaller percentages. In Tennessee, Cocke, Lauderdale, and Sequatchie lost about one-third; Dyer, Marion, Bledsoe, and Hawkins about one-fourth. Smaller losses in Anderson, Lincoln, Campbell, Madison, Sevier, Trousdale, Houston, Loudon, Cannon, Fayette, Meigs, Jefferson, De Kalb, Fentress, Blount, Hardin, Sullivan, Polk, Hancock, Perry, Dickson, Jackson, Macon, Weakley, Robertson, and Montgomery. In West Virginia losses not averaging above 10 per cent. in any case were noted in Wirt, Cabell, Boone, Kanawha, and Mason. In Kentucky the losses were heavier, amounting to 50 per cent. in Mercer and Edmonson; 33 per cent. in Franklin and Pulaski. Smaller mortalities in Jefferson, Cumberland, McLean, Shelby, Boone, Boyle, Carroll, Daviess, Fayette, Graves, Hopkins, Jessamine, Livingston, Lincoln, Logan, Marion, Meade, Simpson, Woodford, Clinton, Johnson, Rockcastle, Monroe, and Adair. North of the Ohio River the losses decrease. Highland, Ohio,

lost 2,000. Montgomery and Fayette lost 10 per cent. Hamilton, Hume, Marion, Sandusky, Van Wert, Butler, and Scioto met with smaller losses. Michigan and Wisconsin report no cases. In Indiana, Pike lost 33 per cent. Brown, Daviess, and Hamilton, 10 per cent. Smaller losses in Jennings, Marion, Martin, Orange, Ripley, Clay, and Franklin. In Cass, 140 hogs from Missouri died, but native hogs escaped infection. In Dearborn, only hogs near the towns were affected. In Illinois about a third of the hogs died in White and Wayne, and about a fourth in Scott, Wabash, De Witt, Logan, and Sangamon. Losses are also noted in Alexander, Pike, Fayette, Johnson, De Kalb, Lee, Saint Clair, Jasper, Crawford, Douglass, Franklin, Jersey, Kankakee, Macoupin, Macon, Mason, Montgomery, Lawrence, Peoria, Piatt, Putnam, Richland, Vermillion, Williamson, Whiteside, Warren, Clark, Edwards, Effingham, Morgan, Scott, and Washington. In several cases it is stated that the disease was first developed in hogs brought from Missouri. In Edwards our correspondent, after several years of success with tartar-emetic as a remedy, finds it no longer effective. Many farmers thought they avoided some of the force of the disease by feeding hogs corn upon the ashes of freshly-burned cobs. The mixture generally used as a preventive and cure in Shelby was one bushel of powdered charcoal, three bushels of wood-ashes, half a bushel of slaked lime, one peck of salt, five pounds of sulphur, and one pound of copperas, kept accessible in an open trough and moistened with swill. No cases are reported in Wisconsin or Minnesota. In Iowa, Cass lost 3,000, and Lucas several thousand; Pottawattamie, $5,000 worth; Tama, 33 per cent. Smaller losses in Adair, Poweshiek, Story, Appanoose, Greene, Marion, Montgomery, Polk, Louisa, Dallas, Decatur, Delaware, Guthrie, Hancock, Hardin, Harrison, Mills, Madison, and Linn. In Missouri the loss averages from 50 to 75 per cent. in Saint Genevieve, and 40 per cent. in Bates, with smaller losses in Jefferson, Macon, Marion, Pike, Christian, Clinton, Nodaway, Boone, Chariton, Iron, Lincoln, Perry, Bollinger, Pemiscot, Moniteau, Holt, Vernon, and Ripley. A trace of cholera was found in Johnson, Kansas. In Spencer, Kentucky, this disease is called by some erysipelas or St. Anthony's fire.

Quinsy.—This malady is reported in Duplin, North Carolina, and Coahoma, Mississippi. In the latter the loss amounted to 20 per cent. The most effective remedy was feeding corn soaked in a solution of copperas. Some losses were felt also in Marion, Kentucky; Bureau, Illinois; Poweshiek and Story, Iowa; and Washington, Missouri.

Red mange.—This disease is reported in Gloucester and Elizabeth City, Virginia; De Kalb, Alabama; Holmes and Tishemingo, Mississippi; Wood, Texas; and Benton, Arkansas. The remedy most popular here was doses twice per week of a teaspoonful of sulphur, alum, and saltpeter. It was also noted in Kanawha, West Virginia.

Miscellaneous.—Franklin, Vermont, lost 10 per cent. of its store-pigs by a new disease characterized by paralysis of the back and hind legs; few recovered. Young pigs also died of undescribed symptoms in Ontario, New York, and Northumberland, Pennsylvania. The thumps were bad in Volusia, Florida, and in Cannon and Union, Tennessee. A few cases of crooked neck terminated fatally in Rappahannock, Virginia. Lice were extirpated in Campbell, Tennessee, by anointing with kerosene. In Caroline, Virginia, a dropsical affection yielded to no remedies. The measles are reported in Cherokee and Chowan. Cotton-seed poisoned some in Jackson, Georgia, and Milam, Texas. Some of our Southern correspondents suspect that to this cause should be referred many cases reported under the head of cholera. In Mont-

gomery, Texas, some died of eating cockle-burs. Lung-fever was noticed in Pike, Ohio, causing a loss of 10 per cent. Some cases of blind staggers occurred in Iowa County, Wisconsin. Kidney-worms were troublesome in Poweshiek, Iowa, and Cass, Missouri. The severity of the winter and the short supply of food were the causes of heavy losses in many parts of the country.

EXTRACTS FROM CORRESPONDENCE.

DESTRUCTION OF SHEEP BY DOGS.—*Randolph, Missouri:* There is one impediment, and *only one*, in the way of making sheep-raising very profitable in our county. It is explained in the universal cry of "Dogs." At an election in January last, upon the acceptance or rejection of a law taxing and killing dogs, there were printed on the tickets, "For a dog-law," and "Against a dog-law." Upon the same tickets were printed the names of candidates for delegates to the convention for revising the State constitution. But the important question of constitutional revision was lost sight of in the bitterness of the contest over the dog-law, which was badly defeated, and that by the farmers themselves, the people of the towns leaving the question to be settled mostly by votes in the rural districts. An old and wealthy farmer, a large sheep-raiser, came to me the morning after the election, and expressed his regret for having opposed the law. His change of feeling was brought about by the fact that during the previous night dogs had killed forty of his fine sheep.

RESULTS OF SWINE-FEEDING.—*Garland, Arkansas:* A pair of China hogs produced 38 pigs, which sold at $20 per pair, bringing $380. Deducting $30 for cost of original pair, $23 for corn, and $48 for hotel-slops, total cost, $101, and there remains a profit of $279.

Hillsdale, Michigan: A neighbor fed 6 hogs one year old, and weighing 1,600 pounds, 25 bushels of ear corn within two weeks, gaining 200 pounds.

PROFITS ON MILK.—*Fairfax, Virginia:* From milk sold in the Washington (District of Columbia) market during 1874, the yield of 27 cows, I received at the railroad-station $1,600, or $59 per cow. They grazed on 100 acres and consumed the wheat-straw produced on 25 acres, fodder from 30 acres of corn, besides 2 acres of broadcast, 15 tons of clover-hay, and 100 bushels of wheat-bran and corn-meal.

Garland, Arkansas: A Durham milch-cow, with calf, cost $50, and consumed, during twelve months, food valued at $73. She yielded during the year 630 gallons of milk, averaging 50 cents per gallon, and worth, in the aggregate, $315. Her calf, one year old, sold for $20. Total receipts, $335; cost of cow and feed, $123, leaving a clear profit of $212.

MANAGEMENT OF THE RYE-CROP.—*Story, Iowa:* But little rye is grown here, but there is more money in it than in corn, if properly looked after. Ten acres sown in the fall (September) make good fall pasture, and an excellent spring pasture for young calves and lambs until June 1. Then take them off and let the grain head. When it is ripe turn on 20 to 26 hogs per acre, and let them eat till they have begun to shrink; then take them off and put them on corn. Two or three bushels per head will make them No. 1 pork hogs. The hogs take

nothing from the rye-field, but add materially to its productiveness. There will be enough rye left in the ground for seed, which will become well rooted, and yield good fall pasture as before. It is only necessary to sow once for all time to come, and I will guarantee the last crops will be the best. It is the safest, cheapest, and most profitable way to manure an old field I ever tried.

COUNTY EXPORTS OF AGRICULTURAL PRODUCTS.—*Smith, Tennessee:* The following estimate is based on inquiries instituted by the subordinate granges of Patrons of Husbandry during the last twelve months: Live stock and their products, $335,960; grain, $71,807; tobacco, $175,000; poultry, eggs, butter, &c., $52,345; total $635,112. Inquiries are on foot to ascertain the amount of our imports. I fear they will be found to balance or exceed our exports, as we manufacture scarcely anything.

FULTZ WHEAT.—*Vinton, Ohio:* The Fultz is doing better than any other variety. Of this we are about to have a fair trial. This year I sold 147 bushels of it for seed, at $1.30 per measured bushel. It weighed 64 pounds per bushel. Other varieties weighed from 56 to 60 pounds, and brought $1.10 by weight.

BAD ECONOMY.—Machine-agents and money-shavers have brought hard times on farmers. Five years since a neighbor, through the persuasion of an agent, purchased a reaper, giving an "iron-clad" note. To meet the payments, he was compelled to borrow money at 2 per cent. per month. This winter he paid off the debt, which, principal and interest, amounted to $525, or ten times the cost of manufacture.

UNPROGRESSIVE FARMING.—*Shelby, Alabama:* Although this county is somewhat *ancient*, its agriculture is very rude and imperfect; it contains but a limited number of *thinking, practical* farmers. When corn-fields have been plowed up for wheat, more than half the corn-stalks are left untouched by the plow. Very rarely is there any shelter for stock, except for horses, and many a faithful cow is allowed to shiver herself away in the beating rains and winds, cowering in the fence-corners. Sheep are often not seen for weeks, and are very unwelcome visitors at the farm-yard, especially during cold, sleeting weather. Everything during farming months is neglected for cotton-patches. Old established farmers in spring are found buying their sweet-potato seed at extravagant prices. A new era, however, seems to be dawning. Farmers are beginning to look around them, to seek for improved agricultural seeds and implements, and to experiment in farming, according to suggestions from reliable agricultural sources.

VALUE OF PURE BONE-DUST.—*Medina, Ohio:* There are two establishments in Cleveland for grinding bones; one asks $20 per ton, and the other $50. The latter accuses the former of adulterating. The one asking $50 will not sell much, for we read in the papers that pure bone-dust can be bought in the eastern cities for $35 to $40 per ton. What is its value on lands needing it?

A CHEAP FERTILIZER.—*Duplin, North Carolina:* Many of our best planters use a compound composed of 60 pounds of sulphate of ammonia, 40 pounds nitrate of soda, ½ bushel of salt, 250 pounds fine ground bone, 250 pounds land plaster, 3 bushels of ashes, and 20 bushels of stable-manure or rich earth. They apply the above amount to 6 acres. Labor in preparing included, it costs about $15. It gives as good results as most of the commercial fertilizers costing $50 per ton.

RESULTS OF SEED-DISTRIBUTION.—*Lee, Mississippi:* Wheat invariably deteriorates; the first crop is always the best; rye holds its own;

oats retrograde; corn of all kinds improves in size of ears, but gets a little later every year. Beans, melons, squashes, pumpkins, and all vines grow better and larger the longer the seed is run in the climate. The first pumpkin-seeds sent me from the Department produced a multitude of small pumpkins; but by planting the seed raised here they have grown larger every year. From the paper of French seed sent me three years ago I have stocked the county with pumpkins superior to any ever tasted here. The little black bunch-bean is prolific, and has become a favorite. The vine and bean improve in size each year. Cabbages of all varieties run to long-legged collards. All kinds of okra improve; melons also improve yearly in quality and size. I have stocked the county with the ice-rind melon sent from the Department, and beat Florida's best. Having found that most persons will not properly attend to the original seeds received from the Department, so as to make a fair test, my plan now is to carefully test every kind sent me, myself, and distribute the seed produced. Having ascertained, by testing, what is good and what is not, I encourage the propagation of the good alone. Though I save seeds by the bushel, propagated from those sent by the Department, I give them away, and have never yet sold one cent's worth.

The upland Peeler cotton-seed sent to me received extra care, and, dry as the season was, the cotton did well. The stalk is large, bolls large and plenty of them, and the lint fine and long. It kept green through all the drought, but it had the very best of land. I intend to save every seed, plant on the best land again, and after further trial will report definite results.

DEPARTMENT SEEDS.—*Waller, Texas:* In answer to some doleful grumblers, who evidently are not supplied with them, I will state that every seed sent from the Department to this office germinates; there has not been a failure from fault of the seed. I have requested my assistants to give special attention to this subject.

DESTRUCTIVE FRESHET.—*Sevier, Tennessee:* We are literally ruined for a year. The oldest inhabitant never dreamed of such a flood. Just think of our little river, (Little Pigeon River,) not more than 50 yards wide, spreading out over a mile, and from 8 to 10 feet deep on the banks.

UNRELIABLE CENSUS-FIGURES.—*Somerset, Pennsylvania:* I desire to call attention to the unreliable statements of the United States census of 1870 in regard to this county. The returns give: of improved land, 16,124 acres; unimproved land, 28,606 acres; other land, 133 acres; total, 44,863 acres. Now this county has in round numbers 500 square miles of territory almost entirely covered with heavy timber, containing at least 300,000 acres of forest area. Again, Jones Township, of this county, is credited with an amount of crop-production in 1869 equal to its entire production since its first settlement.

THE FARMERS' DEPARTMENT.—*Union, South Carolina:* It has given me great pleasure to make known to my brother farmers the efforts which your Department is making in their behalf by disseminating valuable information, by distributing new and improved seeds, and, more than all, by doing manful battle for them against their natural enemies, the factors and manufacturers. It is gratifying to know that there is at least one Department of the Government on our side.

POULTRY-DISEASE.—*Webster, Nebraska:* Though fowls generally have done well, nearly all the roosters in this and the adjoining counties are dead. They did not die from lack of food, nor did they exhibit any specific symptoms of disease, but naturally "dropped off." We are anxious to know the reason.

DANGER TO STOCK FROM GYPSUM.—*Roanoke, Va:* There is great danger in turning stock on a grass-field on which plaster has been recently sown, or until the plaster has been taken up either by rain or heavy dews. Two years ago some stock was turned upon a field on the same day on which it was plastered, and they all died in a few hours. There were no indications of "hoven," the stock being in good condition, and the sudden death was believed to be solely the effect of the sulphate of lime.

JUMPING-SHEEP.—*Highland, Va.:* Take a board about 2 feet long, 5 or 6 inches wide, and 1 inch thick. Fasten it to the sheep's neck so that it will come flat against the knees. When the sheep attempt to jump, the board prevents a foot-hold on the fence and throws them back. A few trials satisfy them. The worst jumpers can be cured in this way. Last summer I had nine which were such bad jumpers that no fence could stop them. I fixed them in the way above described and had no further trouble. At the same time the board prevents much running about, and causes them to fatten better. Try it.

THE COTTON-CROP OF LAST YEAR.

Manipulators of cotton-statistics desirous of reducing prices below a rate warranted by the probable production, waged all last season a most mendacious warfare upon the cotton-reports of this Department. Their own estimates are now proved to be not far from a half million bales too high, while the figures of this office are verified with remarkable closeness. The following is from our December report, indicating an aggregate about 300,000 bales less than the crop of 1873, in the very face of an *increase* of receipts, up to December, of more than 300,000 bales:

The cotton-product of 1874, as estimated by our correspondents on the 1st of November aggregates about three and two-thirds millions of bales. The yield per acre is reported less than in 1873 in most of the States. The weather for ripening and gathering the top-crop has been very favorable. The reports are nearly unanimous in stating that the proportion of lint to seed is large. The percentages of last year's aggregate of bales in the principal cotton-States are as follows: Virginia, 89; North Carolina, 89; South Carolina, 92; Georgia, 93; Florida, 100; Alabama, 95; Mississippi, 90; Louisiana, 85; Texas, 90; Arkansas, 60; Tennessee, 57. This result corresponds very closely with the indications of the monthly statements of condition made by the Department. It is larger than that foreshadowed by the Cotton Exchanges. It is as high as an honest rendering of returns warranted on the 1st of November; and though the fine weather since that date may add something to the quantity opened and safely gathered, and the large proportion of lint may swell the aggregate, the *highest estimate that could be based fairly upon these returns could scarcely reach* 4,000,000 *bales.*

The New York Cotton-Exchange sums up the receipts at the ports, up to April 16, 1875, at 3,259,907 bales, against 3,506,942, making a decrease of 247,035 bales. Since December the decline has been continuous and almost unprecedented in its rate. If this decline should stop at this date, which is altogether improbable, the present difference would reduce the total from 4,170,000 bales last year to 3,922,965 bales. Should it continue and the overland receipts make as high a percentage of the whole crop as last year, the crop will exceed, by a very small margin, 3,800,000 bales. With the present indications of an exhaustion of the stock on hand in the interior, it seems scarcely possible that the latter figures can be exceeded except by "doctoring" overland receipts

to break the fall of cotton-statisticians who are self-deceived by their interests.

European authorities, though prone to accept the views of ursine operators, are compelled to acknowledge the unreliability of commercial reports of cotton. The Monthly Circular of Smith, Edwards & Co., of Liverpool, of the date of March 1, makes the following acknowledgment:

The current of feeling in America represents the predominant interests of speculators This year the "bear" interest predominated, and large-crop opinions followed as a matter of course. In former seasons the "bull" interest usually prevailed, hence the crop was usually underestimated. The Agricultural Bureau is, after all, coming out most nearly correct; its reports were treated with contempt most of the season, but next year it will be regarded as an oracle.

A Liverpool letter of April 9 to the statistician acknowledges the verification of our cotton-estimates, and refers, in language of condemnation, to certain "shamefully-edited" commercial journals, in New York and elsewhere, "whose false estimates of the crop, and, we may add, *falsehoods*, have been the cause of a loss of millions of dollars to the cotton-growers."

A correspondent, after referring to the culmination of the increase, which, according to one authority, amounted to 305,290 bales on the 12th of December, and had declined to 225,743 on the 24th of the same month, remarks as follows:

During the following five weeks, from the 25th of December, 1874, to the 29th of January, 1875, the receipts in the ports fell off with the corresponding period of last year exactly 259,000 bales; and on the 29th of January the total receipts stood thus: From 1st September, 1874, to 29th January, 1875, total receipts in ports, 2,530,000 bales. Corresponding date of 1873–'74, 2,540,000 bales.

During the next seven weeks the weekly receipts at the ports as compared with the corresponding receipts of last year were as follows;

	Receipts at ports, 1875.	Receipts at ports, 1874.
	Bales.	Bales.
Week ending February 5	108,000	146,000
Week ending February 12	104,000	131,000
Week ending February 19	97,000	116,000
Week ending February 26	78,000	106,000
Week ending March 5	77,000	95,000
Week ending March 12	63,000	82,000
Week ending March 19	52,000	67,000
Total in seven weeks	579,000	743,000

A total falling off in seven weeks of 164,000 bales, and a steady weekly decline averaging 22 per cent.

These statistics seem most naturally to be the true basis for an estimate of the crop that has not found its way to the ports, or has not been otherwise accounted for.

The crop of 1873–'74 footed up, according to cotton-exchanges, as follows:

	Bales.
Total cotton received at the ports	3,804 000
Total cotton received over land	238,000
Consumption at the South	129,000
Total crop	4,171,000

Now, up to the 19th March, 1874, the total receipts at the ports were 3,283,000 bales, leaving 888,000 to be accounted for further receipts at the ports up to September, for overland cotton, and southern consumption. If, therefore, the seven weeks' steady decline of 22 per cent. be applied to the 888,000 bales accounted for last year, this would give for the present year's cotton-receipts in the ports, overland and southern consumption, from the 19th March to the 1st of September, exactly 692,640 bales; add to this, cotton received at the ports up to the 19th March, 3,109,000 bales, the total crop estimated is 3,801,640. This is certainly

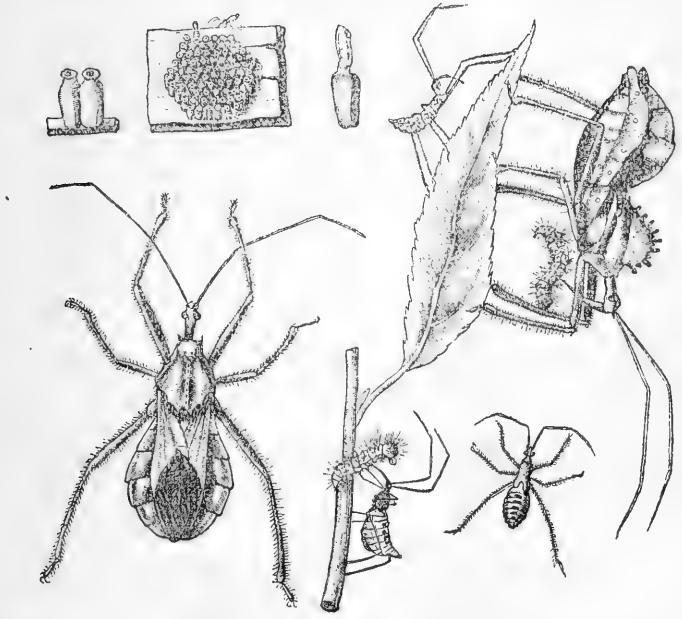
now the most favorable estimate that could possibly be made, while there may reasonably be expected a decrease from this estimate, as the tendency of weekly receipts as compared with last year is toward a decline of the estimated reduction of the assumed 22 per cent. smaller receipts.

From the 19th of March to the 18th of April, the receipts have been 167,642 bales, against 217,090 last year—a falling off of 23 per cent. instead of 22, thus more than sustaining our correspondent's views.

ENTOMOLOGICAL RECORD.

By Townend Glover, Entomolgist.

As horticulturists are very apt to clear their trees in spring of eggs, cocoons, &c., of insects, imagining that they are all injurious to vegetation, it will be well to warn them that some species are beneficial, by destroying injurious insects, and their clusters of eggs should be preserved, wherever found. Among these, a hexagonal mass of eggs will frequently be met with, cemented together with a species of gum or resin, which is said to be gathered from the tree by the female. This insect is commonly known in Maryland by the name of devil's horse, or nine-pronged wheel-bug, *Prionotus cristatus* of Linn., or *Reduvius novenarius* of Say. These hexagonal masses of eggs are deposited on the bark of trees, on fence-rails, under the eaves of out-buildings, or wherever the female chances to be at the time of oviposition, to the number of 70 or more, each egg, when separated from the mass, presenting the appearance of a somewhat square flask, standing on its own bottom. The larvæ when young, are blood-red, with black marks, and do not resem-



ble the adult insect, excepting somewhat in form and habits. The larvæ, pupæ, and perfect insects feed upon all other insects they can overcome, not even sparing their own brethren. When very young, they

destroy great numbers of plant-lice, *Aphides*, and when older, they prey upon caterpillars, or indeed upon any other insect they can overpower. They kill their prey by inserting the proboscis into it, and which emits a most powerful poisonous liquid into the wound. The victim thus pierced dies in a very short time. They then leisurely suck the juices out, and drop the empty skin. The perfect wheel-bug is a large and very singular looking insect, of very slow and deliberate motions when undisturbed, and stealing up to its prey. It is of a gray color, and has a high semicircular ridge or projection on the crest of its thorax, armed with nine perfectly arranged teeth, or cog-like protuberances, like very short spokes or cogs of a wheel; hence the vulgar name of wheel-bug. The young shed their skins several times before attaining their full size. As this insect is constantly employed, from the moment it is hatched, in searching for and destroying noxious insects, it may be considered a friend to the horticulturist and farmer. A dozen or so of these insects, placed near the nest of some of those caterpillars so destructive to our fruit and forest trees, will destroy almost every caterpillar in it in a short time, as they are exceedingly voracious, and each insect will destroy several caterpillars daily. Great care must be taken, however, when handling the adult insects, as they are very apt to sting, or rather, insert their strong curved beaks into the naked flesh, and the poisonous fluid ejected, when the wound is inflicted, is extremely powerful, and much more painful than the sting of a large wasp or hornet. One of these insects having stung the writer, the pain lasted for several hours, and was only alleviated by applications of ammonia. Several days afterward, the flesh immediately surrounding the puncture was so much poisoned that it sloughed off, leaving a small hole in the injured thumb.

CHEMICAL MEMORANDA.

By William McMurtrie, Chemist.

Sugar-corn.—The difficulties accompanying the prosecution of proximate organic analysis of sugar-corn may have been considered sufficient cause for our failure to find upon record any reliable statement concerning its composition, but it appears to be a fact that chemists have thus far either avoided it or have failed to come in contact with it. When called upon a short time ago by Mr. T. Worthington, of Morrow, Warren County, Ohio, for information concerning its composition and comparative value as a material for the manufacture of alcoholic liquors, we found it necessary to resort to analysis to determine the facts desired.

The method employed in our analyses was essentially the same as that made use of in previous analyses of corn as published in the Annual Report of this Department for 1873, the only difference being a slight modification in the separation and estimation of gum and dextrine. Methylic alcohol dissolves dextrine without attacking gum, and we therefore employed it in their separation.

For comparison we have also made an analysis of a sample taken from a lot of corn held by this Department for distribution. There seems to be considerable difference in the composition of these two samples, but this may naturally be expected on account of the different qualities ascribed to the several varieties of this kind of corn. The sweet taste is evidently due to the high percentage of dextrine it contains, and we

should expect to find greater variation in the amount of this constituent than in that of the others, since it is so well known that some varieties of sugar-corn are so much sweeter than others. However, further analyses will be necessary to determine how far this variation extends. The analyses resulted as follows:

No. 1 is a sample from Ohio.

	Air-dried.	Calculated for dry substance.
Moisture	10.00	....
Oil	6.00	6.67
Gum	7.25	8.06
Dextrine	5.20	5.77
Zeine	5.95	6.61
Sugar	1.60	1.77
Starch	50.56	56.17
Albuminoids	7.75	8.61
Cellulose	4.24	4.72
Ash	1.45	1.62
	100.00	100.00

No. 2. Sample obtained in Department.

	Air-dried.	Calculated for dry substance
Moisture	6.40	....
Oil	7.30	7.79
Gum	6.15	6.58
Dextrine	5.15	5.50
Zeine	5.25	5.61
Sugar	1.65	1.76
Starch	49.85	53 27
Albuminoids	10.45	11.16
Cellulose	6.33	6.76
Ash	1.47	1.57
	100.00	100.00

With regard to its value for the manufacture of alcoholic liquors as compared with common field-corn, little can be said in its favor. For comparison in this particular I quote analyses, published in a previous report. In this case the results are calculated for dry substance:

	No. 1.	No. 2
Oil	5.67	6.10
Sugar	1.21	2.66
Gum and dextrine	1.35	1.06
Zeine	2.17	1.58
Starch	77.54	76.50
Albuminoids	8.71	9.09
Cellulose	1.89	1.66
Ash	1.46	1.35
	100.00	100.00

No. 1 represents the composition of a yellow corn grown in Pennsylvania, and No. 2 that of a white corn, from Maryland.

These tables of analyses show that the sugar-corn cannot be recommended for the purpose suggested, since its contents of starch, gum, and dextrine amounts to only 61 and 63 per cent., while that of the field-corn reaches about 72 per cent. With this fact, and its incapability of producing as large a crop as the field-corn, against it, it is doubtful whether sugar-corn will ever have any application other than that which it at present has; viz, for food in the green state.

BOTANICAL NOTES.

By Dr. George Vasey, Botanist.

Flora of Japan.—The following notes on the flora of a portion of the Japanese Empire, by Mr. Thomas Hogg, who is well known as the introducer of many Japanese horticultural novelties, will be read with interest. The government operations in experimental agriculture, which are alluded to in Yesso, are doubtless those conducted by General Capron, formerly of this Department. The report is communicated to us through the State Department:

A hurried journey through a section of country, however limited, is insufficient to enable the investigator to give anything like a full description of its flora. As the area of country is enlarged, the difficulties of doing so are increased, and a residence of weeks or months combined with frequent journeys becomes necessary, in order to describe with even approximate completeness its floral treasures. It is therefore impossible for me to more than take a hasty glance at the vegetation, as the results of a tour of a few weeks in portions of the islands of Yesso and Niphon.

Occasionally I shall take the liberty of departing in a slight degree from the direct subject of my report to a consideration of the country with reference to its agricultural capabilities and productions, as suggested to my mind during the journey.

The flora of the island of Yesso, though in some respects resembling that of high altitudes on the island of Niphon, still exhibits a marked difference, owing to its higher latitude, isolation, and narrower limits. Its peculiarity in these respects is apparent, in the absence of many trees common throughout Niphon. On no portion of the route over which I traveled, with the exception of the immediate neighborhood of Hakodate, did I find growing, in a natural state, either Cryptomerias, Pines, Retinospora, Planera, or the Wistaria. Those seen at Hakodate were probably grown from seed or young trees brought from other districts. On the high hills, at the base of which Hakodate is situated, are found growing a species of Tilia, resembling, if not identical with, *T. europæa*, *Pyrus aucuparia* (?) *Hydrangea paniculata*, *Berberis vulgaris*, and several species of Euonymus.

On the level plain northward are found *Wahlenbergia grandiflora*, *Aconitum fischerii*, (?) Also found growing abundantly all over the island, *Lythrum virgatum* and *Cimicifuga racemosa*. Passing over the mountain-ridge toward, Volcano Bay, on the road leading to the town of Moie, on its shores, I first met with the elm and beech plentifully distributed. A species of poplar is also common. It attains a larger size than other trees of the forest, which here are not generally of large growth, owing to the volcanic, thin, gravelly soil.

Crossing over Volcano Bay to Mororan, the first portion of the road leading over the mountain-spurs that terminate abruptly at the sea-side, the variety of forest-timber is increased by the addition of alder, birch, Æsculus, and *Magnolia hypoleuca* in quantity. Descending the mountain-spurs, the road runs close to the beach, and its course is almost devoid of arboreal growth. The most conspicuous plant to be seen is the beautiful *Gentiana pneumonanthe*, (?) with an occasional *Wahlenbergia grandiflora*. Both of these plants apparently find a more congenial home on the eastern than on the western side of the island, where I occasionally met with the first, but with the latter not once.

A short distance from Tomokomia the road turns toward the interior, passing over a flat country, swampy in places, and mostly covered with oak-trees of low growth, the soil being thin and poor. About five ris from the coast more elevated land was reached, and covered with somewhat larger timber. Some of the species, seen on the mountains near the seacoast, here disappeared, and among others that took their place was the ash, more closely allied to the American than the European species of that tree.

Soon after leaving Chistosi, seven ris from the coast, the appearance of the country improved. Ascending a hundred or more feet, the plateau was of moderately good soil and covered with oak-timber. Approaching Shimamadzer the soil lost its volcanic character, and was apparently fertile, and continued to improve all the way to Satsporo. Oak-timber predominated on this richer land, and attained a good size.

My limited time of four days at Satsporo, portions of which it rained, did not permit an extended investigation of the surrounding country. It presented, however, no features specially different over that which I had already passed. On the drier soil, oak still prevailed, but along water-courses, with a moist soil, there was a dense growth of a variety of trees already enumerated, with undergrowth of dwarf bamboo and shrubs.

Beyond Satsporo, toward the Ishkaro River, the country becomes lower and somewhat swampy. Oak disappears, and elm takes its place. The nature of the soil in all this section of country is shown in the luxuriant crops of farm-produce within the inclosures of recent settlers. Cereals had all been harvested, but later crops, as buckwheat, beans, &c.,

were prospering finely. Undoubtedly the country is capable of abundantly producing cereals, with the exception, perhaps, of maize, which, for its successful cultivation as a farm-crop, may require a warmer climate. Hemp of equally excellent quality, as cultivated elsewhere in Japan, there is every reason to expect would succeed.

Approaching Ishkara, at the mouth of the river of the same name, the soil becomes drier, and the elm less plentiful, the maple and linden, with other trees, taking its place. From Ishkara southward toward Otaranai, along the sandy beach, the vegetation exhibits no remarkable peculiarities. The lower part of the plain, extending from Satsporo to the sea, is a dense growth of scrub or dwarf oak. Immediately bordering the sea the sandy hillocks are covered with *Rosa rugosa*, which is also plentiful on the gravelly soils near Volcano Bay. Its large, fragrant flowers, succeeded by its bright-colored fruit, has rendered it one of the most highly-prized Japanese plants introduced abroad.

Crossing the mountains from Yoichi to Iwanai, in these higher regions, in addition to the catalogue of deciduous trees, we find several species of Abies, or spruce. The most plentiful is *Abies pichta* found also throughout Siberia. Besides these, of lesser growth, among deciduous shrubs are found *Sophora japonica* and *Styrax obassia*, one of the most elegant shrubs in all Japan. *Cercidophyllum japonicum*, a tree of the largest growth, and peculiar to Japan, attains here its greatest size.

The road from Iwanai to Kuromats does not differ in its general character from other portions of the road from Ishkara. Wherever mountain-streams enter into the Japan Sea, there are valleys of alluvial soil expanding in width as they approach the coast. They are susceptible of easy cultivation and of supporting a large population, but at the present time are simply wastes.

The road from Kuromats to Oshmambe, at the head of Volcano Bay, has also the same general features as that from Yoichi to Iwanai. The rugged mountains are covered with the same varieties of trees, and the valleys between them are in places rendered almost impassable by dense thickets of a species of bamboo. The valley extending back from Oshmambe into the interior is equally fertile with those on the west coast, and as equally undeveloped. From Oshmambe to Mori the road follows the shore of the bay, and is comparatively uninteresting in a botanical point of view, within the range of this report, to that passing through the interior of the island.

Before leaving the island of Yesso I cannot refrain from again referring to its agricultural resources. The efforts of the government toward developing them are worthy of praise. Much remains to be done, and the fields of action are even closer at hand than at Satsporo. In the immediate neighborhood of Hakodate the experimental farm cannot but have in time a good influence in improving the modes of cultivation as at present conducted there. The introduction of nutritious grasses for pasture, or hay for horses and cattle, is to be desired in place of the coarse weeds that are gathered to serve the same purpose and in a very insufficient manner. The planting of a larger variety of hard timber useful for purposes of utility, to take the place of inferior woods, in districts not well fitted for the cultivation of crops, would, in course of time, be an additional source of wealth to the country.

At Awomori, on the island of Niphon, we find at once trees peculiar to the island, to which I have already referred as being absent in Yesso, and indicate the milder climate of Niphon. Proceeding farther southward, the change is still more apparent in the growth of various species of Laurus, Osmanthus, Camellia, and ivy; also the pomegranate and Lagerstrœmia, found frequently in the neighborhood of dwellings.

FACTS FROM VARIOUS OFFICIAL SOURCES.

CHAIN-BOATS ON THE NECKAR.—A horse can draw 20 cwt. on a turnpike, 200 cwt. on a railway, and 1,200 cwt. on a canal, says the old proverb. Horse-towage, which has taken the place of the immense wagons formerly used on the Neckar in Germany, annually transports 2,000,000 cwt. An accumulation of freight often causes great delay, and the cost of towage has increased 15 per cent. since 1872. Paddle-wheel steamers and locomotives on the river-bank have both been tried, and found impracticable. It is now proposed to introduce the chain-boats which have proved successful on the Rhine, Neva, Weichsel, and Havel, and which are now or shortly will be placed on the Seine, Rhone, Volga, Oder, Saale, Spree, and Elbe. The system requires a chain laid in the river-bed, which passes over the vessel, being wound on friction-rollers in its course, that are turned by steam-power. The Upper Elbe

is in the hands of a company that paid 5½ per cent. dividend in 1872, and 6½ per cent. in 1873. They have thirteen steam chain-boats, and forty-seven miles laid with chain, and in 1872 transported 2,727,045 cwt. an average of 17 miles, and in 1873 2,945,627 cwt. an average distance of 20.17 miles.

CALIFORNIA TOBACCO.—The early attempts to grow tobacco in California, according to methods in use east of the Rocky Mountains, proved futile; though the plants grew luxuriantly, the product was very indifferent. Within the last three or four years a planter in Santa Clara County, after several years of study and experiment, succeeded in producing a fair merchantable article. A patent was taken out for the new process of culture and preparation, and a company of capitalists was formed for operations under it. The first crop, in 1872, amounted to a few thousand pounds; in 1873 it rose to 500,000 pounds, and to about 1,500,000 pounds in 1874, including other parties using the process under permission. A portion of the crop was from Havana seed adapted to cigar-making, the remainder being from Florida seed, better adapted to pipe-smoking and chewing tobacco. The manufacturers, having no confidence in the quality of the new product, refused to take it, and the company were compelled to manufacture their own material. They are now making 200,000 cigars per month, besides packing about 10,000 pounds of smoking-tobacco. They have recently determined to enlarge their product a million cigars per month, and 1,500 pounds of smoking-tobacco per day. The area suited to the growth of tobacco under this process in California is said to be unlimited.

AMERICAN JUTE.—Mr. E. Lefranc, of New Orleans, who has devoted much attention to the culture of the jute in this country, informs the Department that he has succeeded in raising the first regular crop in America, of which he recently shipped nineteen bales to the markets of Saint Louis and New York, to be tested by the manufacturers. His crop was raised in Plaquemines Parish, Louisiana, and he believes the cultivation of the fiber will be rapidly multiplied by other planters of that section. Mr. Lefranc writes to the Department as follows:

As explained before, this jute fiber was decorticated from dried plants which had already given their seed. It is the second product of the stalks, and for that reason the staple may not be highly classed in comparison with the India article worked in green. But I have put enough of good quality in the bales to prove that we can advantageously compete against foreign jute. The decorticating machine cleans it more thoroughly and secures a larger quantum of strong filament than the ordinary hand-work of Hindostan. The refuse of the machine is good for paper.

Regarding the economy of this new industry, I am now practically satisfied that the figures of cost I have given in my treatise were sufficiently nigh. Our expenses for cultivation scarcely reach $4.75 per acre; for manipulation, $15. These are still subject to improvement wherever a closer organization can be established.

The yield is also satisfactory. Wherever the stand was normal, we obtained the proportion of one ton per acre. In average the lint is of over two pounds per foot high on the surface of an acre, and the plant averages ten feet in any favorable season, and in rich, moist land.

Mr. Lefranc speaks very confidently of his success in organizing the labor of this new and promising industry. His machine, he says, is actually a producing fact. It works very well, and on dried stalks, which have first furnished their seed, as well as on green plants, thus securing the important result of obtaining both seed and fiber from the crop. The fiber obtained is strong and fine enough to bring from four and a half to five cents a pound, in gold. The faculty of working the plant dried is important, as it extends the manipulating period through the dull winter season, when labor is abundant and cheap. Mr. Lefranc remarks:

The production or yield is as large as the ability of the feeding hands can reach. The bunches of fifteen and twenty stalks engaged at the time are almost instantly transformed into clean filament. Hemp, ramie, hibiscus, and any long fibrous plant are equally well treated by the apparatus, which capacity and power can be increased as to produce tons and tons daily.

These assertions are based on true, practical facts, and as soon as they will be believed and applied in our long-textile growing sections, the country will cease to be tributary for our actual enormous import of foreign staple. From new observations, I can re-assert that ordinary jute growth gives an average of at least one ton per acre of fiber, and that the whole cost of production will not exceed $25. In good, moist land jute grows ten feet in average, and has one-third of its body in fiber. The mower and reaper applied on wheat cut jute perfectly well.

INTERNATIONAL HORTICULTURAL EXHIBITION.—A grand international exhibition, under the patronage of the German Empress and her son the Crown Prince, will be opened at Cologne August 25, and will continue a month. The exhibition will comprise all horticultural plants and productions, except vines and grapes, all kinds of tools, implements, and machinery, and collections in any way connected with rural life and the development of garden culture.

The following classification has been adopted:

I. *Horticulture*, including glass-house plants, open-air plants, fruit-trees and shrubs, cut and dried flowers.

II. *Horticultural productions*, including fruits, fresh, dried, and preserved; produce of vegetable juice and fiber, viz, wine, beer, liquors, oils, rosin, gum, coloring-matter, hemp, cotton, flax, sugar, starch, &c., with manufactures of these substances; rearing of bees and their products; vegetables, fresh, dried, and preserved; seeds of all kinds.

III. *Garden architecture*, including plans and models of gardens, parks, glass-houses, summer-houses, garden furniture, bridges, roads, walks, rock-work, tunnels, grottos, fences, gates, espaliers, &c., with prices of construction.

IV. *Garden decoration*, including fountains, statues, vases, urns, pedestals, borders, beds, flower-baskets and stands, hanging-lamps, illuminating-materials, &c.

V. *Garden tools and machinery*, pumps, water-pipes, conduits, carts, water-engines, spades, hoes, rakes, clippers, flower-pots, labels, surveying and leveling instruments, &c.

VI. *Garden collections*, of woods, seeds, insects, both injurious and beneficial, &c.

VII. *Artificial fruits, flowers, and plants*, singly and in collections.

VIII. *Garden literature*, in all its branches.

Eminent horticulturists of different nations have been solicited to act upon the various juries, and motive-power for machinery will be provided. A lottery will be established for the disposal of articles. Exhibitors must engage to allow their articles to remain to the close of the exhibition, and to receive them within a week after its close.

The general committee in charge of the exhibition consists of leading civil and military officials of the German Empire, of eminent scientific men, and of opulent and respectable private citizens.

NATURE'S RECORD OF DROUGHTS.—A correspondent in McLennon County, Texas, informs this Department that he is examining the annual rings on trees with reference to the effect of very dry seasons upon tree-growth. He has a theory that a series of such seasons may return in regular periodicity, the discovery of which would be of great value to the farmer, since it would enable him to anticipate short crops and, by previous surplus ones, prepare for them. He has selected for his purpose the burr-oak, on some of which he finds a record of the growth of three hundred years. So far as he has traced back human records, he

finds each very dry season marked by rings of extraordinary thinness. He is still tracing back the records of man and nature in the hope of discovering the law above referred to.

EGYPTIAN COTTON.—About nine years ago the Department procured through the United States consul at Alexandria some Egyptian cotton-seed, which was distributed among southern planters. The reports hitherto have been almost invariably unfavorable. The following report from Mr. Savage, of Montgomery, Ala., though late, is worth noting particularly. He says:

Two years ago I procured about a peck of Egyptian cotton-seed from the Department. I planted it by itself in a sixty-acre cotton-field, and found that it was four or five weeks earlier than the native cotton; consequently I had a good crop before the worms made their appearance. I believe if I had had the whole field in Egyptian cotton, I would have made from twenty-five to thirty bales instead of six. Last year (1874) I planted five acres of it, and packed and sold two bales before the other was ready to pick. I consider it 25 or 30 per cent. more prolific than either the Boyd or Dickson cotton.

MARKET-PRICES OF FARM-PRODUCTS.

APRIL, 1875.

The following quotations represent, as nearly as practicable, the state of the market at the beginning of the month:

Articles.	Value.			Articles.	Value.		
NEW YORK.				BOSTON.			
Flour, superfine State.. per barrel.	$4 40	to	$4 70	Flour, western superfine, per barrel.	$4 25	to	$4 50
extra State.....do....	4 85	to	5 40	com. western extras, per barrel.....	5 25	to	5 50
superfine western....do....	4 40	to	4 70	red wheat, good to fancy northwestern, per barrel.	5 50	to	8 00
extra choice western..do....	4 85	to	8 00	white wheat, good to fancy western, per barrel.....	5 75	to	8 00
common to fair southern extras, per barrel.....	4 95	to	5 60	southern family, per barrel.	6 50	to	8 00
good to choice southern extras, per barrel.....	5 65	to	8 00	Corn.....do....	89½	to	92
Wheat, No. 1 spring....per bushel.	1 22	to	1 28	Oats.....do....	70	to	75
No. 2 spring.....do....	1 16	to	1 20	Rye.....do....	95	to	1 00
winter, red, western..do....	1 25	to	1 29	Barley.....do....	1 00	to	1 40
winter, amber, western, per bushel.....	1 25	to	1 29	Hay, eastern and northern..per ton.	14 00	to	21 00
winter, white, western, per bushel.....	1 29	to	1 39	choice western.....per ton.	— —		— —
Rye.....per bushel.	90	to	1 00	Beef, mess.....per barrel.	10 50	to	13 00
Barley.....do....	1 20	to	1 22	Lard, extra mess.....do....	16 00	to	17 00
Corn.....do....	85	to	87	Pork, prime.....do....	17 00	to	17 50
Hay, first quality.....per ton.	18 00	to	23 00	mess.....do....	22 00	to	22 50
second quality.....do....	14 00	to	16 00	Lard.....per pound.	16	to	15½
Beef, mess.....per barrel.	9 50	to	10 50	Butter, N. Y. and Vermont ..do....	18	to	26
extra, mess.....do....	10 50	to	12 00	western.....do....	16	to	25
Pork, mess.....do....	21 75	to	— —	Cheese, New York and Vt. factory, per pound.....	14½	to	16½
extra prime.....do....	16 25	to	16 50	western factory, per pound.	14	to	16½
prime mess.....do....	19 25	to	— —	Sugar, fair to good refining, per pound.....	7⅞	to	8¼
Lard.....per pound.	14⅝	to	— —	Cotton, ordinary to good ordinary, per pound.....	14	to	16
Butter, western.....do....	14	to	24	low middling to good middling, per pound.....	16¼	to	17¾
State dairy.....do....	16	to	33	Wool, Ohio and Pennsylvania, per pound.....	52	to	54
Cheese, State factory.....do....	14	to	16⅝	Michigan.....per pound.	49	to	52½
western factory.....do....	12	to	15½	other western.....do....	—		—
Cotton, ordinary to good ordinary, per pound.....	14	to	15¾	pulled.....do....	43	to	56
low middling to good middling, per pound.....	16¼	to	17½	combing fleece.....do....	42½	to	66
Sugar, fair to prime refining, per pound.....	7⅞	to	8¼	California.....do....	20	to	36
Tobacco, lugs.....per pound.	10½	to	13¾	PHILADELPHIA.			
low leaf to medium leaf, per pound.....	12¼	to	17	Flour, superfine.....per barrel.	3 50	to	4 00
Wool, American XXX and picklock, per pound.....	58	to	60	Penn., extra to choice, per barrel.....	4 00	to	5 75
American X and XX, per pound.....	48	to	53	western, extra to choice, per barrel..	5 00	to	7 00
American combing, per pound.....	55	to	58	Wheat, white.....per bushel.	1 32	to	1 37
pulled.....per pound.	30	to	50	amber.....do....	1 27	to	1 30
California spring clip..do....	25	to	35	red.....do....	1 20	to	1 28
California fall clip....do....	16	to	23	Rye.....do	1 05	to	— —

Market-prices of farm-products—Continued.

Articles.	Value.		
PHILADELPHIA—Continued.			
Barley.....per bushel.	$1 20	to	$1 50
Corn.....do....	82½	to	84
Oats.....do....	62	to	70
Hay, prime baled..... per ton.	21 00	to	22 00
baled, com. to fair, shipping, per ton.....	19 00	to	20 00
Beef, western mess.....per barrel.	7 00	to	8 00
extra mess .....do....	8 00	to	9 00
Worthman's, city family, per barrel.....	16 00	to	– —
Pork, mess .....per hundred	21 50	to	– —
prime mess.....do.....	19 75	to	– —
prime.....do.....	16 50	to	17 00
Lard.....per pound.	14½	to	18
Butter, choice Middle States, per pound.....	23	to	30
choice western...per pound.	18	to	24
Cheese, New York factory..do....	16	to	17
Ohio factory.....do....	15½	to	16
Sugar, fair to good refining do.....	7⅞	to	8⅛
Cotton, ordinary to good ordinary, per pound.....	13⅝	to	15¼
low middling to good middling, per pound.....	16¼	to	18
Wool, Ohio X and XX..per pound.	54	to	54½
other western.....do....	—	to	—
tub-washed .....do....	55	to	62
pulled.....do....	33½	to	50
combings.....do....	—	to	—
BALTIMORE.			
Flour, superfine.....per barrel.	4 25	to	4 75
extra..... .....do....	5 00	to	6 50
family and fancy....do....	7 00	to	8 00
Wheat, red.....per bushel.	1 22	to	1 34
amber.....do....	1 22	to	1 34
white .....do....	1 25	to	1 35
Rye .....do....	1 05	to	1 08
Oats .....do....	66	to	73
Corn.....do....	79	to	87
Hay, Maryland and Pennsylvania, per ton.....	20 00	to	24 00
Pork, mess .....per barrel	22 00	to	— —
extra prime .....do....	17 00	to	— —
Lard..... per pound.	15	to	15½
Butter, western .....do....	14	to	22
eastern.....do....	16	to	25
Cheese, western factory .....do....	14½	to	16
eastern factory.....do....	15	to	17
Sugar, fair to good refining..do....	7⅞	to	8⅝
New Orleans, grocery grades, per pound.....	8¼	to	9
Tobacco, lugs .....per pound.	8	to	11½
common to medium, leaf, per pound.....	12	to	14
Cotton, ordinary to good ordinary, per pound.....	—	to	15¾
low middling to good middling, per pound.....	16⅛	to	16¾
CINCINNATI.			
Flour, superfine.....per barrel.	4 00	to	4 25
extra .....do....	4 70	to	4 90
family and fancy.....do....	5 00	to	6 40
Wheat, winter red.....per bushel.	1 10	to	1 14
hill, (amber,).....do....	1 13	to	1 18
white.....do....	1 15	to	1 22
Rye.....do....	1 12	to	1 15
Barley.....do....	1 00	to	1 40
Corn.....do....	71	to	72
Oats .....do....	60	to	64
Hay, baled, No. 1.....per ton.	19 00	to	21 00
lower grades.....do....	14 00	to	18 00
Beef, plate.....per barrel.	— —	to	— —
Pork, mess.....do....	21 50	to	22 00
Lard .....per pound.	14½	to	15
Butter, choice .....do....	26	to	28

Articles.	Value.		
CINCINNATI—Continued.			
Butter, prime.....per pound	$0 23	to	$0 25
Cheese, prime to choice factory, per pound.....	15	to	16
Sugar, New Orleans, fair to good, per pound.....	8	to	8¼
prime to choice..per pound.	8½	to	8¾
Tobacco, lugs .....do...	20	to	25
leaf .....do...	25	to	40
Cotton, ordinary to good ordinary, per pound.....	13	to	14½
low middling to good middling, per pound.....	15½	to	16½
Wool, fleece, common to fine, per pound.....	43	to	47
tub-washed.....per pound.	49	to	52
unwashed clothing....do...	32	to	33
unwashed combing... do...	37	to	38
pulled .....do...	36	to	38
CHICAGO.			
Flour, choice winter extras, per barrel.....	5 50	to	6 75
common to good extras, per barrel.....	4 50	to	5 00
choice spring extras, per barrel.....	4 62½	to	4 75
patent spring...per barrel.	5 00	to	9 00
spring superfine....do....	3 50	to	4 00
Wheat, No. 1 spring..per bushel.	1 00	to	1 03
No. 2 spring.....do....	94⅝	to	96¾
No. 3 spring.....do....	91½	to	91½
Rye No. 2.....per bushel.	1 00	to	1 01
Barley No. 2.....do....	1 02	to	1 07
Oats No. 2.....do....	55½	to	58
Corn No. 2.....do....	68	to	69
Hay, timothy .....per ton.	17 00	to	19 00
prairie.....do....	13 50	to	16 50
Beef, mess.....per barrel.	8 25	to	— —
extra mess.....do....	9 25	to	— —
Pork, mess .....do....	21 10	to	21 32½
prime mess.....do....	18 00	to	18 25
extra prime.....do....	15 00	to	15 25
Lard .....per pound.	14½	to	14⅝
Butter, choice to fancy.....do....	25	to	31
medium to good.....do....	17	to	21
Cheese, good to prime factory, do...	16	to	18
Sugar, New Orleans, common to choice .....per pound.	7¼	to	9
Wool, tub-washed.....do....	49	to	58
fleece-washed.....do....	40	to	52
unwashed.....do....	27	to	37
pulled .....do....	42	to	47
SAINT LOUIS.			
Flour, winter, common to choice, per bbl	4 00	to	7 00
Flour, spring.....per barrel.	4 00	to	5 50
Wheat, white winter..per bushel.	1 05	to	1 14
red winter.....do...	1 04	to	1 14
spring.....do...	94	to	98
Corn.....do...	65	to	76
Rye .....do...	1 02	to	1 06
Barley .....do...	1 00	to	1 35
Oats .....do...	60	to	69
Hay, timothy.....per ton.	19 00	to	23 00
prairie ....do...	12 00	to	13 00
Beef, mess.....per barrel.	14 00	to	15 00
Pork, mess .....do..	20 50	to	21 00
Lard .....per pound	12	to	14
Butter, prime to choice dairy..do..	30	to	33
country-packed.....do..	18	to	27
Cheese, Ohio factory.....do..	13	to	13¾
New York factory .. do..	13	to	13¾
Cotton, ordinary to good ordinary, per pound.....	12½	to	14¾
low middling to good middling .....per pound.	15	to	16

Market prices of farm products—Continued.

Articles.	Value.			Articles.	Value.		
SAINT LOUIS—Continued.				NEW ORLEANS—Continued.			
Wool, tub-washed.....per pound.	$0 53	to	$0 55	Cotton, ordinary to good ordinary.....per pound.	$0 13⅜	to	$0 14½
fleece-washed.....do...	32	to	52	low middling to good middling.....per poud.	15¼	to	16½
unwashed .....do...	28	to	36	Wool, clear lake.....do...	28	to	— —
Tobacco, lug .....do...	10	to	12				
common to shipping leaf..	11	to	15				
NEW ORLEANS.				SAN FRANCISCO.			
Flour, superfine .....per barrel.	5 00	to	— —	Flour, superfine.....per barrel.	4 00	to	4 37½
extra.....do...	5 37½	to	6 00	extra.....do...	4 50	to	4 80
family and fancy.....do...	6 00	to	6 75	family and fancy.... do...	5 00	to	5 25
Corn, yellow.....per bushel.	86	to	88	Wheat, California.....per cental.	1 50	to	1 70
white .....do...	86	to	88	Oregon .....do...	1 50	to	1 70
Oats .....do...	74	to	78	Barley.....do...	1 40	to	1 60
Hay, choice.. .....per ton.	29 00	to	— —	Oats.....do...	1 55	to	1 80
prime.....do...	24 00	to	— —	Corn, white .....do...	1 60	to	— —
Beef, Texas.....per barrel.	10 00	to	11 50	yellow .....do...	1 40	to	1 45
western.....do...	14 00	to	16 00	Hay, State .....do...	10 00	to	17 00
Fulton Market.per half barrel.	11 40	to	11 50	Beef, mess.....per barrel.	8 00	to	9 00
Pork, mess.....per barrel.	22 37½	to	23 00	family messp.er half barrel.	6 50	to	8 00
Lard.....per pound.	14½	to	15½	Pork, mess .....per barrel.	22 00	to	23 00
Butter, choice Goshen.....do...	30	to	32	prime mess .....do...	17 50	to	19 00
western.....do...	12	to	22	Lard..... per pound	13	to	17
Cheese, choice western factory.do...	15	to	16	Butter, overland .....do...	20	to	25½
New York cream.....do...	18	to	18½	California .....do...	25	to	30
Sugar, fair to fully fair.....do...	7	to	7⅞	Oregon .....do...	20	to	22½
prime to strictly prime.do...	8	to	8⅝	Cheese.....do...	12½	to	16
clarified, white and yellow. .....per pound.	9½	to	10½	Wool, native .....do...	10	to	20
Tobacco, lugs .....do...	9	to	11½	California .....do...	15	to	22
low leaf to medium..do...	12	to	14	Oregon .... do...	18	to	22

LIVE-STOCK MARKETS.

Articles.	Value.			Articles.	Value.		
NEW YORK.				CINCINNATI—Continued.			
Cattle, extra beeves....per cental.	$13 50	to	$14 00	Cattle, fair to medium..per cental.	$4 00	to	$5 00
good to prime.....do....	— —	to	13 25	common.....do....	2 75	to	3 75
common to fair.....do....	10 75	to	12 00	milch cows.....per head.	25 00	to	55 00
average of the marketdo....	— —	to	— —	calves.....per cental.	5 50	to	7 00
Texans.....do....	— —	to	— —	Sheep.....do....	4 50	to	6 00
milch cows.....do....	50 00	to	75 00	Swine, good to choice .... do....	8 50	to	8 75
veal calves.....do....	4 50	to	10 50	common to medium do....	6 50	to	8 00
Sheep.....do....	5 50	to	7 50				
Swine.....do....	Few in market.			CHICAGO.			
PHILADELPHIA.				Cattle, extra graded steers, 1,400 to 1,600 pounds, per cental.....	6 40	to	6 90
Cattle, prime beeves....per cental.	7 50	to	8 00	choice beeves, 1,250 to 1,450 pounds, per cental	5 85	to	6 25
fair to good.....do....	6 25	to	7 25	good beeves, 1,150 to 1,350 pounds, per cental.....	5 50	to	5 75
common.....do....	5 25	to	6 00	medium, 1,100 to 1,250 pounds, per cental.....	5 00	to	5 50
Sheep.....do....	4 50	to	7 75	inferior.....per cental.	3 00	to	5 00
Hogs, corn-fed.....do....	12 00	to	13 00	Texans.....do....	2 50	to	5 25
BALTIMORE.				Sheep..... do....	3 75	to	6 50
Cattle, best beeves.....per cental.	6 25	to	7 30	Swine.....do....	7 10	to	8 75
first quality.....do....	5 12	to	6 25	SAINT LOUIS.			
medium or good quality, per cental.....	4 62	to	5 12	Cattle, fair to choice native steers, per cental.....	5 00	to	6 25
ordinary.....per cental.	3 50	to	4 62	common to fair natives, per cental.....	3 50	to	4 75
general average.....do....	5 50	to	— —	inferior to common, per cental	2 00	to	3 50
most of the sales.....do....	5 00	to	6 00	Texans, common to choice, per cental.....	1 75	to	4 00
milch-cows, fair to good, per cental.....	30 00	to	48 00	Sheep.....per cental.	4 00	to	6 25
Sheep.....per cental.	4 50	to	8 00	Swine.....do....	5 00	to	7 25
Swine.....do....	9 75	to	11 50				
CINCINNATI.							
Cattle, good to prime butchers' steers.....per cental.	5 50	to	6 25				

Live-stock Markets—Continued.

Articles.	Prices.	Articles.	Prices.
SAINT LOUIS—Continued.		NEW ORLEANS.	
Horses, plug.....per head.	$40 00 to $75 00	Cattle, Texas beeves, choice, per head.....	$40 00 to $46 00
plain.....do....	80 00 to 110 00	first quality.....per head.	30 00 to 35 00
street-car.....do....	75 00 to 125 00	second quality.....do....	20 00 to 25 00
heavy draught.....do....	130 00 to 170 00	western beeves..per cental.	3 00 to 7 50
good drivers.....do....	100 00 to 150 00	milch-cows.....per head.	35 00 to 100 00
extra.....do....	175 00 to 180 00	calves.....do....	7 00 to 9 00
Mules, 14 to 15 hands high...do....	75 00 to 120 00	Sheep, first quality.....do....	6 00 to 7 00
15 to 16 hands high...do....	120 00 to 180 00	second quality.....do....	3 00 to 4 00
extra.....do....	175 00 to 200 00	Swine.....do....	5 00 to 6 00

FOREIGN MARKETS.

The first half of March in the United Kingdom was all that could be desired for field-work, but the spring was considered backward, so far as vegetation was concerned. Everywhere warmth was greatly wanted for grain and meadows, but the growth had nowhere been affected by frost to an extent injurious to subsequent growth. The country markets were from 1*s.* to 2*s.* per quarter for wheat ahead of the London market, which showed considerable indecision in regard to further advances. In London it is observed that the sales of English wheat amounted to only a third of the arrivals. During the last week in March the sales amounted to 29,873 quarters in excess of those of the corresponding week of 1874, while prices averaged 19*s.* per quarter less. The financial necessities of farmers compel them to accept such prices. The Paris market was dull but steady, the provinces showing more buoyancy. Belgium, Holland, and Germany show a firmer hold on prices already obtained, a tendency also observable in Denmark and Hungary. Egypt was doing little in the way of export to weaken prices, while in New York there was an advance of 2*s.* 6*d.* per quarter. The large amount of cargoes bound for British ports—one and a half million quarters—will only suffice to bring up the aggregate receipts to last year's figures. If it could all be retained it would furnish six weeks' consumption, but a large portion will be reshipped to other countries. More than half the British crop has been marketed, and prices have evidently touched their lowest point. The increasing demand for a higher standard of living among the poorer classes of the English people causes an increased demand for wheat diet and counteracts the downward tendency of the market. The deficiencies of two short crops are not to be overcome by a single good one, and hence the late decline of prices is considered not as a permanent tendency but as a temporary reaction which has already reached its limits.

The sales of English wheat in the United Kingdom during the last week in March amounted to 67,153 quarters, at 41*s.* 9*d.*, against 37,280 quarters at 60*s.* 9*d.* in 1874. This fact is very significant to American wheat-farmers who look to the British Islands for a market for their products. These destructive variations in prices result from temporary and abnormal conditions, and hence can form no basis for a steady, remunerative demand. The London averages were 43*s.* 10*d.* on 1,955 quarters. The imports of the previous week into the United Kingdom amounted to 313,898 cwts. After March 19, sixteen cargoes of foreign wheat are noted, of which fifteen cargoes were disposed of at the following rates,

viz: Berdianski, 43*s.* to 45*s.* per quarter; Ghirka, 42*s.* to 44*s.*; California, 45*s.* to 45*s.* 6*d.*; Oregon, 47*s.* 3*d.*; American spring, No. 2, 41*s.* 6*d.*; Milwaukee, No. 2, 42*s.*

The last week in March in Mark Lane opened on moderate supplies of English wheat, with about double the quantity of foreign, principally red wheat from Marianopoli and New York, with some from Dantzig and Hamburg. The show of fresh samples from the near counties was quite limited and their condition moderately good. The continued short arrivals caused a firmness in the market for good samples, though poor and ill-conditioned lots were a drug.

In Mark Lane, London, Essex and Kent, white, brought 44*s.* to 49*s.* per quarter; ditto, red, 42*s.* to 44*s.*; Norfolk, Lincolnshire, and Yorkshire, 42*s.* to 44*s.* Of foreign wheats, Dantzic mixed brought 50*s.* to 54*s.*; Königsberg, 46*s.* to 53*s.*; Rostock, 44*s.* to 48*s.*; Silesian, red, 43*s.* to 49*s.*; Pomeranian, Mecklenberg, and Uckermark, red, 44*s.* to 46*s.*; Ghirka, 42*s.* to 43*s.*; Russian, hard, 40*s.* to 43*s.*; Saxonska, 43*s.* to 45*s.*; Danish and Holstein, red, 41*s.* to 47*s.*; American, 41*s.* to 43*s.*; Chilian, white, 49*s.*; Californian, 50*s.*; Australian, 50*s.* to 51*s.* In Liverpool, Canadian, white, was quoted at 9*s.* 3*d.* to 10*s.* per cental; American, white, 9*s.* 9*d.* to 10*s.* 2*d.*; ditto, red winter, 9*s.* 2*d.* to 9*s.* 6*d.*; ditto, No. 1, spring, 9*s.* to 9*s.* 2*d.*; ditto, No. 2, spring, 8*s.* 6*d.* to 8*s.* 10*d.*; Californian, 9*s.* 4*d.* to 9*s.* 10*d.*; Oregon, 9*s.* 10*d.* to 10*s.*; Chilian, 8*s.* 11*d.* to 9*s.* In Paris the wheat-trade was dull, quotations ranging from 39*s.* to 45*s.* per quarter. No complaints from the rural districts in regard to the growing wheat-crop. The French provincial markets showed a tendency to advance. Belgian farmers were disposed to hold on for higher prices in view of severe weather, the Brussels market being very firm at 46*s.* 6*d.* average for native. Growers near Hamburg were reported as holding still three-fourths of their previous crops, and an advance of 9*d.* per quarter was stated.

Flour.—The imports into the United Kingdom during the third week of March amounted to 94,296 hundred-weight. The subsequent week opened on a good supply of English flour, with a moderate supply of American in barrels. The latter showed increased transactions at previous rates. In Mark Lane, the best town-households brought 36*s.* to 40*s.* per sack of 280 pounds; best country-households, 30*s.* to 31*s.*; Norfolk and Suffolk, 27*s.* to 29*s.*; American, per barrel, 21*s.* to 25*s.* In Liverpool, English and Irish superfines were quoted at 30*s.* 6*d.* to 32*s.* 6*d.* per 280 pounds; ditto, extra, 33*s.* to 36*s.*; French, 35*s.* to 44*s.*; Trieste, 48*s.* to 60*s.*; Spanish, 33*s.* to 39*s.*; Chilian, 31*s.* 6*d.* to 35*s.*; Californian, 35*s.* to 36*s.*; American, western and extra, per barrel, 21*s.* to 23*s.*; Baltimore and Philadelphia, 21*s.* to 23*s.*; extra Canadian, 23*s.* 6*d.* to 26*s.* The Paris trade was slow at former prices, ranging from 30*s.* 1*d.* to 34*s.* per 280 pounds.

Maize.—With fair arrivals this grain had fallen 6*d.* per quarter in the British markets. On Wednesday, March 24, the market supplies aggregated 5,110 quarters. In Mark Lane, white brought from 37*s.* to 40*s.* per quarter; yellow, 34*s.* to 36*s.* In Liverpool, American new brought 33*s.* 6*d.* to 36*s.* per 280 pounds; Galatz, 37*s.* to 38*s.*

MONTHLY REPORT

OF THE

DEPARTMENT OF AGRICULTURE

FOR

MAY AND JUNE, 1875.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1875.

CONTENTS.

MONTHLY REPORT.

DEPARTMENT OF AGRICULTURE,
Statistical Division, June 15, 1875.

SIR: I respectfully present for publication a digest of the crop-returns for June, with the results of investigations in the divisions of entomology and chemistry, the current domestic and foreign market-reports, and minor official and other statistics of rural industry.

Respectfully,

J. R. DODGE,
Statistician.

HON. FREDERICK WATTS,
Commissioner.

DIGEST OF THE CROP-RETURNS FOR JUNE.

WHEAT.

The condition of winter-wheat is still reported low. There has been material improvement in some of the Western States, and Kansas, especially, seems determined to maintain her high reputation as a wheat district. The averages for condition in the winter-wheat district beyond the Alleghanies are as follows: West Virginia, 60; Kentucky, 81; Ohio, 57; Michigan, 80; Indiana, 71; Illinois, 64; Missouri, 55; Kansas, 97. In West Virginia freezes have been followed by drought. Improvement has been marked in Kentucky, but the losses have been too serious to be repaired. In Ohio the remnant still alive is generally late, and in some places has been injured by the fly, chinches, and by drought. The prospect is better in Michigan than elsewhere between the mountains and the great river. The crop is light and patchy in Indiana, but is improving. The crop of Illinois was too badly injured for more than partial recovery.

In the Gulf States the wheat is a positive success, particularly in Texas, where a large increase in acreage has been made, and where our correspondents insist upon making the condition very high, the average of the percentages of condition being 115. In Arkansas and Tennessee there was some injury from frost, which the genial season has not since repaired.

Going north on the Atlantic coast, the high condition of winter-grain becomes gradually reduced, State by State, until Maryland is reached. Pennsylvania, by its good culture and use of the drill, maintains a higher condition than Maryland. New York succumbs to the severity of winter's frosts, and reports a prospect for scarcely more than half a crop.

The condition of spring-wheat is higher, but is scarcely a full average,

except in Texas, Michigan, and Nebraska. In the Western States the percentages are as follows: Illinois, 91; Wisconsin, 94; Minnesota, 99; Iowa, 97; Missouri, 57; Kansas, 97; Nebraska, 105.

The prospect in California, which was darkened at the last report by the drying winds and absence of the latter rains, has improved somewhat in certain sections from the influence of atmospheric moisture in fogs or dews; yet the injury from drought will materially reduce the expected yield.

The average condition of winter and spring combined is 80 per cent. for the whole country.

The following extracts from correspondence will illustrate some of the exceptional or peculiar features of these returns:

NEW YORK.—*Queens:* Winter-wheat about half killed. No spring-wheat. *Steuben:* Prospect of less than half a crop. *Livingston:* More than half killed in the winter; most of the remainder past saving. *Genesee:* More than half of our extended wheat-area entirely bare of wheat; much of the remaining has only a thin and sickly appearance. *Wyoming:* Winter-wheat looking very bad. Spring-wheat not forward enough to judge. *Jefferson:* Winter-killed where the snow was blown off. *Wayne:* Many fields plowed up and sown with other crops. *Chautauqua:* Winter-wheat will not yield over 5 bushels per acre. *Seneca:* The crop of winter-wheat will be shorter than any within recollection. *Orange:* Injured by winter-killing.

NEW JERSEY.—*Mercer:* Suffered from the severe winter; many fields will not average more than 5 bushels per acre. *Warren:* Will not be more than half a crop. *Gloucester:* Greatly injured by the severe winter, and by the extreme drought now prevailing.

PENNSYLVANIA.—*Bucks:* Nearer a failure than I ever knew; many fields will not more than give back the seed. *Cumberland:* Thriving. *Lehigh:* An average amount of plants, but retarded by the unfavorable season. *Perry:* In low condition owing to the April freeze. *Westmoreland:* Many fields have been plowed up and planted in corn. *Warren:* Looked well early in April, but very much injured since by cold weather. *McKean:* Injured by severe freezing this spring. *Franklin:* Prospects better than in any of the adjoining counties. *Elk:* Late but looks well; 25 per cent. more than usual sown. *Clearfield:* Very materially injured by the late severe freezing. *Armstrong:* Extensively killed; that on new ground generally good. *Columbia:* Stands middling well on the ground, but very much behind time. *Cambria:* Prospect not good. *Indiana:* Some fields plowed up and put in oats and corn; that standing in the ground is doing well. *Lycoming:* On heavy clay-lands, badly frozen out; not so bad on sandy loam, though damaged. *Lancaster:* Winter-wheat rather poor, owing to unfavorable weather during the winter and since. *Fulton:* Seriously injured by drought in May. *Tioga:* Winter very severe on wheat. *Montour:* Does not look as well as when the snow left. *Beaver:* Winter-wheat very thin.

MARYLAND.—*Cecil:* Very much injured by the winter and by drought. *Prince George's:* But little hope of more than 50 per cent. of a crop one month ago, but now promises 95 per cent. *Baltimore:* That put in early with the drill looks well, notwithstanding the drought; late-sown, miserable. Farmers are sustaining heavy losses owing to late sowing. *Frederick:* Looks bad, but is improving slowly. A great drought prevailing. *Montgomery:* Some very good fields, but the condition for the whole county about 70. *Wicomico:* The Clawson wheat sent out by the Department last fall is now shooting, and looks most promising. *Dorchester:* Fully up to the standard, and promises a full crop. *Talbot:* Suffering severely from drought. *Washington:* Has improved lately, but cannot be over half a crop. *Calvert:* Much destroyed by the intense and long-continued cold, with almost entire absence of snow. *Howard:* Hardly two-thirds of a crop.

VIRGINIA.—*Craig:* Heading very short. *Chesterfield:* The crop the most promising for many years. *Culpeper:* Winter-wheat looking well when sown early, on good, well-prepared ground. *Mecklenburgh:* Considerably injured by frost in April. *Madison:* Greatly injured by cold weather, followed by drought. *Spottsylvania:* Very promising; straw short and heads very fine. *Richland:* Injury threatened by the drought now prevailing. *Fluvanna:* Weather very favorable to the development of the heads. Wheat that had grown to the first and second joint, cut down by the late freeze, sprouted again, and now looks as fine as though it had not been cut by the frost. *Caroline:* Looking quite well. *Tazewell:* Badly damaged by the freeze. *Rappahannock:* Unfavorable weather will cut short late wheat 50 per cent. *Warwick:* As yet but slightly affected with rust. *Sussex:* Fully up to average. *Rockingham:* The crop necessarily short, owing to the severe winter. *Floyd:* Injured by the cold in April, but not so seriously as at first supposed. *Campbell:* A large proportion inferior. *Bland:* Hurt by late frosts. *Frederick:* In some instances, where the natural fertility has been well kept up, the land well cultivated, and the crop sown seasonably, it promises to make 8 to 12 bushels; on other farms of equal natural fertility it will

not be worth harvesting. *Page:* Not making a favorable show. *Pittsylvania:* Some wheat injured by late frosts. *Washington:* Heading very low, and short heads; very dry weather. *Patrick:* The cold in April injured forward wheat. Very dry. *Nelson:* Damaged by the cold in April, but has rallied wonderfully. *Fairfax:* Where drilled early, and on land in good tilth, promise of a full average crop; fields broadcasted and late look badly. *Dinwiddie:* The grain now in the milk, and promises a fair crop. *Cumberland:* Dry weather just as the wheat began to head will cut it short very much. *King George:* Not promising. *Matthews:* Very slightly affected with rust. *Orange:* Seriously affected by backward spring and protracted drought. *Pulaski:* Early stalks entirely killed by the freeze in April; late stools came out finely; now suffering from drought. *Charles City:* A few farms, improved by green clover, plaster, and farm-yard manure, present a very handsome promise of wheat. *Clarke:* Will not be half a crop. *Halifax:* Injured by frost, and now has rust on the blade. *Highland:* Now coming in head and only about 6 inches high, owing to a dry May. *Essex:* Growth small, but heads fine. *Prince George:* Damaged by rust on the blade.

NORTH CAROLINA.—*Chowan:* Injured by late cold weather. *Gaston:* Healthy and promising. *Transylvania:* Damaged by freeze in April, but very much recovered. Four times the usual amount planted. *Surry:* Injured by freeze in April. *Gates:* Very much injured by freeze in April and frosts in May. *Haywood:* An excellent stand of late wheat; early injured by severe freeze in April. Fultz wheat from the Department exceedingly fine. *Ashe:* Somewhat injured by a severe freeze. *Forsyth:* Good. *Franklin:* Has improved and promises well. *Stokes:* Looking well, except symptoms of rust. *Camden:* Injured by rust. *Wake:* Injured by cold and drought. *Alamance:* Improving. *Person:* Prospect never better. *Burke:* Prospects encouraging. *Wilson:* Injured very much by cold in April. *Caldwell:* Much injured by the April freeze and by a five weeks' drought. *Hertford:* The prospect for a good return better than for years. *Montgomery:* The fears that wheat was badly injured by the frosts prove groundless. *Perquimans:* Rust on the leaves. *Anson:* Somewhat injured by frosts. *Alexander:* Injured by severe freeze in spring; what survived is the best for years.

SOUTH CAROLINA.—*Laurens:* Weather favorable for wheat. *Lexington:* Somewhat injured by late frosts and rust. *Edgefield:* Unusually fine.

GEORGIA.—*Columbia:* Ten days back, would have reported wheat 10 per cent. above average; but the rust has taken it, and is spreading like wild-fire. *Gordon:* Early, damaged by frost and overflow. *Rabun:* Never better. *Troup:* Injured some by rust. *Webster:* Injured by rust. *Taylor:* Half already harvested; promises a good yield. *McDuffie:* Never better. *Catoosa:* Looking well, notwithstanding the rust is on the blade. *Chattooga:* Very dry; May favorable to wheat. *Douglas:* Very promising. *Walker:* Badly rusted, which is unusual with dry weather and cool nights. *Garnett:* Light straw; weather favorable for filling and good grain. *Laurens:* Good. *Clayton:* A fair stand on the ground, now beginning to turn, and no appearance of rust. *Coweta:* More than half will be harvested this week. *Floyd:* Has improved wonderfully the last two or three weeks. *Marion:* Spring-wheat being harvested; crop good. *Hancock:* Suffering very much for want of rain. *Heard:* A fine prospect. *Carroll:* Head short but full of large grain; weather most favorable for several seasons. *Upshur:* Good. *Morgan:* Heads rather short, but well filled with grain.

ALABAMA.—*DeKalb:* Short straw and short heads, but well filled. *Franklin:* Exceedingly fine, with a greatly increased area; no appearance of either rust or smut. *Limestone:* Good but very rusty. *Bullock:* Rust, but confined principally to the blade. *Lawrence:* Crop early and unusually good. *Calhoun:* Good; being harvested. *Amite:* Spring-wheat greatly damaged by rust. *Walker:* Now harvesting, and the best crop since the war. *Marion:* Crop as good as last year's, which was better than usual, and acreage 50 per cent. greater; harvest beginning. *Colbert:* As promising as ever known. *Morgan:* Prospect better than for several years.

MISSISSPPI.—*Noxubee:* Fine; now being harvested. *Winston:* Looking better than for years. *De Soto:* Ripening, and looks splendid. *Tishemingo:* Good, and twice the usual quantity.

LOUISIANA.—*Jackson:* The Fultz and Clawson wheats, from the Department, had put forth large, full heads, when the rust struck and ruined them. Spring-wheat has not been so badly affected by rust, and many fields have turned out good crops. *Bossier:* Entirely ruined by rust.

TEXAS.—*Blanco:* Fall-wheat injured by the drought; spring-wheat promises 20 bushels per acre. *Dallas:* The crop all that could be desired; now being harvested—May 22d. *Upshur:* Fair prospect; no rust as yet. *Collin:* Being harvested; crop very fine. *Wood:* Better than for years before; heads large and full. *Red River:* Nearly ready to cut; prospect good. *Polk:* Has not done well, owing to excessive rains in the winter. *Lamar:* Will yield better than ever before. *Williamson:* Looks very well; the Tappahannock and Red rust-proof Ohio, now cutting, will average from 16 to 30 bushels per acre. Spring-wheat promises equally well. *Navarro:* Nearly all harvested; condition, 150. *Cooke:* Harvest commenced; a heavy yield. *Bosque:* Most of it harvested in good condition; quality good, and acreage and yield larger than usual. *Waller:* Fultz wheat from the Department headed at a height of 30 inches, and was then struck with rust. *Hunt:* Nearly all harvested; Tappa-

hannock ahead of any other variety except the Clawson from the Department, which, for yield, surpasses any other variety ever produced in the county.

ARKANSAS.—*Bradley:* Rust has appeared in almost every wheat-field; very little as yet on the stalk. *Van Buren:* Never better, but, owing to continuous rain for the last ten days, rust has appeared in a few fields. *Montgomery:* Acreage about doubled, and prospect very fine. *Prairie:* Average yield for the county estimated at 20 to 25 bushels per acre. Now beyond damage from any cause save storms. Have seen many specimens ranging from 20 to 82 well-filled heads from a single stool or grain. *Izard:* Some fields entirely winter-killed, and others are too thin; but that standing is good. *Drew:* Four or five times the acreage of any previous year and a most excellent crop. *Dallas:* Harvesting has begun, and the weather is favorable. *Washington:* In some fields almost worthless, owing, apparently, to being pastured too late in the spring; fields not grazed promise above average. *Woodruff:* No wheat raised before this year; some 2,000 acres sown, and promise a good yield. *Baxter:* Better than since the war; will be three bushels this year to one last. *Arkansas:* Generally good. Some complaint of rust, but chiefly in the blade.

TENNESSEE.—*Carter:* Injured by freeze in April, except Fultz. Now suffering from drought. *Cameron:* Looks well, but rust appearing on the blade. *Fayette:* A good prospect. *Knox:* No rain for the last five weeks, accounts for the bad condition. The freeze in April nearly destroyed the crop. Rust has appeared in some places. *Hawkins:* Suffering from drought. *Blount:* Cut short by drought. *McMinn:* Has filled well, but the heads very short and some rust on the blades. *Lincoln:* Early wheat injured by the extreme cold in April, but the crop as a whole promises more than average. *Lawrence:* Both winter and spring so damaged by the last crop that not half a crop will be made. *Warren:* Appearance was very fine, but very small heads are putting out. *Rhea:* Good on upland; on river-bottoms and lowland, injured by high water. *Trousdale:* Very promising. *Montgomery:* Healthy, but thin on the ground. *Giles:* Owing to the great scarcity of feed wheat was grazed very close, thus saving it from the late frost. *Wilson:* Looks remarkably well. *Gibson:* Promises an abundant yield. *Washington:* Badly killed by freeze in April. *Sullivan:* Badly injured by the April freeze. *Robertson:* Heading low, but the heads long and fine. *Polk:* Looks dwarfish. *McNairy:* Seemed badly injured by the late frosts, but has come out surprisingly. *Jefferson:* Injured by frost and fly. *Bradley:* Generally, half-crops will not be made. The fly, rust, and freeze have thinned it. *Lauderdale:* Larger acreage and prospect for larger yield than for years. *Grainger:* Much early wheat killed by freezing, and that not killed heading out low, with very short heads. *Dickson:* Injured by frosts.

WEST VIRGINIA.—*Berkeley:* Largely killed by hard winter. *Marion:* Badly winter-killed and cut short by drought. *Monroe:* Looks bad, owing to the freeze in April and severe frosts since. *Pocahontas:* Badly winter-killed. *Jefferson:* The prospect decidedly gloomy. *Wayne:* Suffering from severe drought. *Putnam:* Unpromising. *Grant:* A poor stand. *Harrison:* Prospect for half a crop. *Taylor:* Almost a failure. *Pendleton:* Greatly injured by freezes in April. *Hancock:* Improved by recent rains. *Mercer:* Injured by winter-killing, freezing, and drought. *Upshur:* Will be light.

KENTUCKY.—*Warren:* Acreage more than doubled; promise of much over an average yield. *Oldham:* The plant not on the ground; frozen out in the winter. *Shelby:* Backward and low, owing to cold and dry weather. *Anderson:* Thought to be ruined by the freeze, but has come out amazingly. *Edmonson:* Very much put back by the April freeze, but has recovered and looks very promising. *Harrison:* Has not rallied from the freeze in April, and is now being damaged by the chinch-bug. *Logan:* Has improved very much within the last few weeks. *Mason:* Hope of half a crop. *Breckinridge:* The deficiency in yield will be made up by increased breadth. *Butler:* Thin and low. *Metcalfe:* Looking very bad, owing to cold weather through April and May. *Gallatin:* The prospect gloomy, though now changing for the better. *Greenup:* Suffering from severe drought. *Henry:* Damaged to a greater extent than was supposed a month ago; not more than a half crop expected. *Livingston:* What wheat is left standing will make about two-thirds of a crop. *Callaway:* Too thin, but heading well. *Bracken:* Clawson wheat from the Department very promising; less winter-killed than any other kind. *Meade:* The amount living very small compared with the amount sown. *Monroe:* In bloom and looks well. *Simpson:* On strong land, drilled, looks well; on thin soil, broadcast, worthless.

OHIO.—*Delaware:* Prospect greatly improved since the 15th of May. *Gallia:* Past redemption. *Sandusky:* Improved very much by the rains of May, but injured 40 per cent. by winter-freezing. *Adams:* Has not recovered from the damage by freezing and frosts, and the best left shortened by drought, fly, and chinches. *Fairfield:* What is left is short and late. *Pike:* Badly killed on clay-land; on black loam, looks promising. *Williams:* What is left does not look encouraging. *Jackson:* Has improved some, but cannot be over a half crop. *Warren:* Hardly one-third of a crop. *Coshocton:* Materially injured by winter and spring freezing. *Hancock:* Badly killed and frozen, in April. *Monroe:* Great improvement since the May report, *Hampden:* Winter-wheat looks the best for several years. *Ashland:* Terribly injured by the April freeze. *Crawford:* Injured much by the severe weather in April.

MICHIGAN.—*Barry:* Very fine where there is any, but the fields very spotted. *Mecosta:*

Never more promising. *Washtenaw:* Very badly killed. *Allegan:* Never looked better. *Antrim:* Both winter and spring wheat number one. *Shiawassee:* Prospect of something over half a crop. *Lenawee:* Indications that there will not be as much winter-wheat gathered as sowed; spring-wheat sown largely in excess of former years. *Calhoun:* Do not expect over half a crop. *Athens:* Injured much by winter and spring freezing, followed by drought.

INDIANA.—*Stark:* The few pieces that have survived the winter look well; cannot be over one-third of a crop. *Wells:* Injured by April freeze. *Franklin:* The poorest prospect for four years. *Washington:* Will not make one-half that was sown in the fall. *Bartholomew:* Improving. *Dubois:* What there is looks well, but has fallen off one-half. *Gibson:* Generally thin. *Harrison:* Badly frozen out. *Noble:* Injured in the winter; cannot be more than half a crop. *Perry:* Thin, but looks well. *Wabash:* Prospect poor. *Tippecanoe:* Prospect has considerably improved. *Steuben:* Growing finely. *Shelby:* Very light, but improving very much. *Ripley:* What was not plowed up looks moderately well; fully one-half the acreage was plowed up. *Jennings:* Almost a total failure. *Decatur:* The county will not produce enough for seed; no failure half so bad since the first settling. *Dearborn:* A few pieces promise half a crop, but they will not amount to 1 per cent. of the acreage sown. *Warren:* Looks well in places, on clay-soil. *Vandenburg:* At least 40 per cent. was winter-killed; that left looks remarkably well. *Fayette:* So frozen out that much was plowed up. *Brown:* Many fields a total failure; that drilled looks best. *Fountain:* Favorable weather has made a wonderful improvement in the crop. *Hamilton:* Came out beyond all expectations during May.

ILLINOIS.—*Clark:* Some fields injured by the April freeze, but recent favorable weather has brought it out finely. *Massac:* Not more than one-third of a good stand, but that very good. *St. Clair:* Too much rain to make good wheat. *Shelby:* Winter-wheat anything but encouraging. *Crawford:* Chinch-bugs plenty, and working on the wheat. *Ogle:* Spring-wheat backward, but the prospect good. *Franklin:* Where the ground was highly cultivated and the seed drilled in, it stood the winter and the cold wet spring much better than where sowed broadcast. The heads very short and not well filled. *Boone:* Condition of spring-wheat low, on account of chinch-bugs. *Fulton:* Winter-wheat will not return the seed sown; one-fourth more spring-wheat than usually sown, which looks well. *Jersey:* Mostly very short and thin, and a great deal of cheat with it. *McLean:* Winter-wheat mostly killed; the little left growing finely; very cold and dry weather caused considerable damage to spring-wheat. *Montgomery:* Much better than was expected. *Schuyler:* Winter-wheat all killed on the prairies; a little left on new timber-land; more on bottoms. *Pope:* The four-tenths left on the ground looks healthy and very well, but will be late in ripening, and may yet be destroyed by chinch-bugs. *Kankakee:* Spring-wheat making a splendid growth. *Cook:* Spring-wheat left thin by the April weather. *Vermillion:* Badly injured by late freezing; will make about half a crop. *Alexander:* Very poor; many plowing up the ground sowed. *Mason:* The few fields left will not make half a crop. *Edwards:* Considerably damaged by chinches. *Cumberland:* Looking well. *Pike:* Winter-wheat almost a failure on hill-lands; winter-killing, dry weather, Hessian fly, and chinches. *Fayette:* Has improved greatly.

WISCONSIN.—*Dodge:* Winter-wheat looks well, having been sown only in sheltered places. Spring-wheat looks very well, but there is much complaint of chinch-bugs. *Iowa:* Winter-wheat nearly all destroyed by chinch-bugs. *Jefferson:* Chinch-bugs making sad work with the spring-wheat. *Milwaukee:* Some fields of spring-wheat quite destroyed by chinch-bugs. *Fond du Lac:* Chinch-bugs have commenced their ravages on some pieces of spring-wheat. *Sauk:* A few pieces of wheat have been plowed up, owing to ravages of chinch-bugs; winter-wheat as yet looks splendid, but the roots are completely covered by chinch-bugs, laying their eggs.

MINNESOTA.—*Wright:* The deficiency in the acreage of spring-wheat is owing to fear that grasshoppers would destroy the crop. In some parts of the country they are now very numerous, and threaten to destroy all before them. *Isanti:* Spring-wheat very much stunted by drought. *Winona:* Decidedly good in the western half of the county. *Sibley:* One-half already destroyed by grasshoppers. *Crawford:* Good prospect for a big yield. *Chippewa:* Spring-wheat, our staple crop, is looking well, but in some fields the grasshoppers have hatched out and are eating the young blades.

IOWA.—*Van Buren:* Winter-wheat nearly a failure. *Hardin:* Very thin. *Harrison:* Hardly more than half as much sown as last spring, but three times as much standing now as the grasshoppers left them. No grasshoppers' eggs here now. *Howard:* Early sown came in patches; later-sown, regular and promising. *Washington:* Injured by drought for the last six weeks. *Buena Vista:* The little winter-wheat there was, killed, freezing and thawing in April. *Des Moines:* Will not be one bushel of winter-wheat raised where fifteen were-sown. Spring wheat very thin; not over one-fourth of a stand in some fields. *Jefferson:* Winter wheat almost wholly winter-killed. Spring, damaged by late frosts and dry weather. *Muscatine:* Injured by drought. *Louisa:* Winter-wheat entirely killed.

MISSOURI.—*Bates:* The cold winter killed nearly all. *Lawrence:* Looked fine till May, when the Hessian fly took about all except the Fultz and weevil-proof. *Montgomery:* No end to chinch-bugs; most of the wheat sown in the fall has been plowed up. *Saint Genevieve:* Uncommonly fine until May 20th, when the army-worm appeared in force, and is

now rapidly devouring it, in some cases cutting the heads entirely off. *Schuyler:* Looks well. *Calloway:* Badly winter-killed, and the chinches at work on what is left. *Crawford:* A little late and chinches numerous. *Dallas:* Injured in some places by the Hessian fly. *Hickory:* The chinches quite numerous, but not yet doing much damage, owing to wet weather. *Dent:* Our only hope for wheat is in the red varieties, particularly the "Red May." Tappahannock almost a failure. Last fall I turned under 20 acres of meadow, which had been run in timothy seven years, and sowed it in Tappahannock, the seed being perfectly free from cheat, rye, &c. It came up and grew finely, giving every indication of a plentiful crop. Now at least 75 per cent. of it is cheat. In other fields adjoining is the same kind of wheat, and no cheat. Would like to know the cause of the cheat. *Jasper:* Grasshoppers and chinches doing no damage as yet. *Moniteau:* Chinches more numerous then ever, but thus far kept from serious damage by frequent showers. *Iron:* Chinches commencing their ravages. *Greene:* Promised a large yield up to the 1st of May; since then the Hessian fly has destroyed a large number of fields; most destructive to early-sown; that sown in November but little affected. *Boone:* Never before in the county have the depredations of insects been so terrible—chinches, cut-worms, army-worms, and grasshoppers; many wheat-fields eaten up by chinches. *Perry:* Has improved rapidly during the last month, and were it not for the army-worm appearing in great numbers, it might be put at an average. *Stoddard:* Nearly doubled in acreage, and in good condition. *Bolivar:* A total failure feared, chinches being more than numerous. *Vernon:* Grasshoppers have entirely destroyed all growing crops in part of the county, and done injury in the whole. Chinches more plentiful than ever before, but kept from damage as yet by rains. *Caldwell:* The stand of winter-wheat very poor, and what is left full of chinches. *Franklin:* In exposed localities a total failure from frosts; in sheltered valleys will be average if the chinches keep off. *Jefferson:* Will be a third of a crop. *Macon:* All killed; not 50 acres left. *Miller:* The Tappahannock and Fultz, from the Department, looking finely; the Touzelle not doing much; too late for this county. *Platte:* Three weeks ago wheat promised a splendid harvest, but the grasshoppers are upon us more numerous than ever before, and our crops entirely destroyed. *Maries:* Will be light. Many have plowed up, and others pasture. *Clay:* Little left by the grasshoppers. *Henry:* The great loss is from ravages by chinch-bugs and grasshoppers. *Nodaway:* A large amount of winter-wheat plowed up on account of chess or cheat. Considerable damage by chinches and Hessian fly. *Dade:* The Hessian fly has made sad havoc of the growing wheat. *Laclede:* Not over half a crop; much winter-killed, and the remainder injured by the fly. *Pettis:* At least one-third frozen out, and the chinch-bugs have appeared by the million.

KANSAS.—*Allen:* Except some of the uplands, the county stripped of wheat by the grasshoppers. *Chase:* As we are near the eastern line of total destruction by grasshoppers last year, we are now entirely escaping their ravages, and the prospect for winter-wheat as fine as ever seen. *Doniphan:* Grasshoppers the only crop flourishing. *Nemcha:* Injured by young grasshoppers, which are now at work. *Brown:* Grasshoppers the cause of low condition. *Cherokee:* Condition, aside from grasshoppers, would be 95; reduced by them in some places as low as 20. *Crawford:* Injured by grasshoppers. *Greenwood:* Could scarcely be a better prospect for a crop of winter-wheat. *Lyon:* Much killed by the dry weather in March. Ravages by grasshoppers as yet confined to a small area. Chinches reported, but no damage as yet. *Montgomery:* Winter-wheat looking remarkably well; never better. The grasshoppers now flying, and hopes entertained that they will leave before doing serious damage. *Rice:* Never better; no grasshoppers worth mentioning. *Washington:* Best prospect for years; no grasshoppers, and no damage by chinches. *Anderson:* Less sown than ever before, on account of ravages by chinches last year, and hundreds of acres are entirely cleaned out by grasshoppers. *Franklin:* Largely destroyed by grasshoppers. *Jackson:* Looked well up to the last week in May. Since then the grasshoppers have commenced their ravages. *Atchison:* Greatly damaged by grasshoppers. *Neosho:* Most of the wheat destroyed by grasshoppers. *Jefferson:* Nearly all late-sown winter-wheat killed by the severe cold; grasshoppers at work on what is left. They have eaten nearly all the spring-wheat. *Republic:* Never since 1869 a promise of so large a yield; but the young grasshoppers are at work. *Douglas:* The grasshoppers have already entirely destroyed 25 per cent. *Marshall:* Destroyed by grasshoppers. *Butler:* Chinches doing much damage on high land; no grasshoppers. *Graham:* Spring-wheat looking fine. *Leavenworth:* All destroyed by grasshoppers. *Miami:* All destroyed by grasshoppers. *Osage:* Badly damaged by frosts, and worse by young grasshoppers. *Cowley:* Looks fine. *Wabaunsee:* Very much injured, and a prospect of being wholly destroyed by grasshoppers. *Labette:* One-third of the county already devastated by grasshoppers. Wheat one month ago 100; now down to 88.

NEBRASKA.—*Pawnee:* About 20 per cent. taken by the small grasshoppers, which are still at work. *Otoe:* The cold and snowless winter destroyed most of the winter-wheat. The grasshoppers have already taken a large share of the spring-wheat, and are rapidly destroying the remainder. *Boone:* Winter-wheat entirely lost by the hard winter and spring. Spring-wheat looking very fine. *Richardson:* The grasshoppers have made a clean sweep of everything green. *Jefferson:* Looks well; but the grasshoppers have done

some damage, and more is feared. *Thayer:* Prospect never better; no grasshoppers to speak of.

CALIFORNIA.—*San Joaquin:* Injured the first part of April by a cold wave. No rain since February. *Alameda:* The severe drought since the 1st of February with hot north winds has injured all grain-crops very much. Large breadths of wheat have been cut for hay to save it. *Contra Costa:* The promise, until the 1st of April, was never excelled. Then the entire failure of the usual spring-rains and the setting in of desiccating winds from the north begin to tell on sandy soils and on lands poorly cultivated. *Merced:* Think the Clawson wheat sent me by the Department will surpass any variety in yield I have ever seen. *Stanislaus:* The fields very spotted, owing to drought.

OREGON.—*Lynn:* The best prospect for both fall and spring wheat that I have seen for twenty-one years. *Umatilla:* Never looked better.

COLORADO.—*El Paso:* Spring-wheat deficient, owing to grasshoppers.

UTAH.—*San Pete:* Both winter and spring wheat promise well. *Morgan:* Injured on low lands by frost on 26th of May.

NEW MEXICO.—*Taos:* Looks bad, owing to frosts.

DAKOTA.—*Davison:* Never saw better-looking. *Lincoln:* Never looked better.

COTTON.

In a larger portion of the cotton area, at the usual time for planting, the soil was wet and cold in Atlantic coast districts, and in a less degree in more western areas, and germination was retarded, but not destroyed. Afterward, the weather became favorable for growth and the chopping out process, with a tendency in places to an injurious lack of moisture. A frost on the 19th of May, in North Carolina, destroyed cotton on certain swamp-lands. Late frosts were somewhat injurious in all the States except Florida and Texas.

The stand is much better than that of last year, and the plants more advanced in growth, notwithstanding their late start; and the crop is generally quite clean. No serious injury has been done by insects, though the cut-worm is noticed in some counties of Florida, Texas and Arkansas; the plant has been infested with lice in some fields in Florida.

The threatened reduction in area has not been accomplished. While there has been an increase in corn and wheat, it has not been at the expense of cotton. Nor has the reduced area of last year been much enlarged. Our returns make only 1 to 2 per cent. increase. There is only one State (Georgia) which has an official bureau for the collection of crop-statistics, which makes the reduction of acreage 5 per cent., which is within 1 per cent. of the result returned by our own corps in that State. The comparison with last year is as follows: North Carolina, 102; South Carolina, 106; Georgia, 96; Florida, 99; Alabama, 104; Mississippi, 102; Louisiana, 101; Texas, 108; Arkansas, 101; Tennessee, 92.

The maximum June condition of cotton, for a period of five seasons, was reported in 1872. The order for the other four is 1875, 1873, 1871, 1874. The comparison with a crop of full vitality and normal growth in all respects is for the present month as follows: North Carolina, 92; South Carolina, 97; Georgia, 91; Florida, 94; Alabama, 101; Mississippi, 100; Louisiana, 95; Texas, 96; Arkansas, 90; Tennessee, 99.

An investigation has been undertaken for the correction of the basis of area in cotton in vogue for years past. The statistician has for years had strong reasons for believing the area heretofore reported in cotton to have been too small. For the past two years he has had a demonstration of that belief, and has not printed an estimate since 1873. The figures published in all the commercial journals are those originally returned by our correspondents, with annual modifications in accordance with yearly percentages of increase or decrease. There are extant no other systematic data for obtaining the acreage; there is otherwise, in

fact, nothing but individual guessing from personal observation or desultory facts. Now the difficulty is this: In estimating average rates of yield per acre of any crop whatever, farmers almost invariably assume too high a figure; whether from pride in the reputation of their neighborhood for fertility and good culture, or from the controlling impression made upon their minds by the appearance of the best fields. On the contrary, with reference to comparative aggregates of yield, to an inquiry whether the total area in a given crop is greater or less, or the harvest better or worse than usual, their judgment is usually accurate. If there is any bias, it will be likely to be in the direction of an underestimate. These general facts will be acknowledged by all who have any practical knowledge of crop-statistics; they have been effectually attested by the experience of the past ten years of this Department. This being the case, all our estimates of yield per acre are now made, not alone from the direct estimate of yield of counties of all crops, but after harmonizing results of reported local changes in the rate of yield and in comparative aggregate of production.

With regard to cotton, we have obtained an actual census, wherever it was possible, for a given district, whether a large or a small portion of a county, both of bales produced and the number of acres upon which they were grown. Our correspondents were urged to avoid estimates, and give only ascertained facts. So a census of a few farms would be taken here, a neighborhood there, and occasionally a larger district. The local officers were in some instances enlisted in the work. The results are not complete, and are not deemed quite sufficient for an authoritative estimate which can be relied on, in the future, as a perfectly accurate basis of comparison; yet they are too important to be withheld, and will be received by a fair-minded public as the best known data for an approximate estimate of the real area in cotton.

In the following statement the number of counties are given in which such enumerations were made, either for their total or partial area, respectively, with the number of bales produced on the acreage given, in 1874:

States.	Counties.	Bales.	Acres.	Acres to the bale.
North Carolina	12	70,402	202,412	2.87
South Carolina	9	84,249	271,477	3.21
Georgia	41	199,810	707,187	3.54
Florida	6	17,513	67,751	3.86
Alabama	13	62,534	245,094	3.92
Mississippi	12	105,280	308,060	2.92
Louisiana	6	56,450	124,016	2.19
Texas	38	139,762	404,005	2.89
Arkansas	13	49,544	140,690	2.84
Tennessee	11	25,654	83,934	3.27
Total	------	811,198	2,554,626	3.15

This makes the average in over 40 per cent. of the cotton-breadth of Georgia, 3.54 acres per bale, while the official report of the State of Georgia makes the number $3\frac{1}{2}$ acres—results almost exactly alike, as in the reports of the area of the present crop.

Without perfecting these estimates, it is evident that the true acreage of 1874 cannot fall very much short of three times as many acres as were produced of bales in 1874, or at least 11,000,000 acres, possibly a figure a little larger. This corresponds with the mass of facts brought to our observation annually for two years past.

In connection with the investigation to fix the basis of area, preliminary returns relative to the present crop were received. A synopsis of those received after the middle of May is as follows:

During May preliminary returns were received from 316 cotton counties. The season is reported late in nearly every instance, from ten days to two weeks generally, but in some cases three and even four weeks. More than two-thirds of the returns make the season too wet, especially in time of planting and germinating. In some districts the past two weeks have been too dry. The stand is reported good in a majority of the returns from North Carolina, South Carolina, Florida, Alabama, Mississippi, and Texas, rather above the average in Arkansas and Tennessee, and scarcely average in Louisiana. The condition is represented below average in Florida, Tennessee, and Arkansas, slightly below in Georgia, Mississippi, Louisiana, and Texas, and average in Alabama and in the Carolinas.

The following brief extracts are from the correspondence of the present month:

VIRGINIA.—*Greenville:* A good stand, but very backward.

NORTH CAROLINA.—*Gaston:* About all up; a few fields in fine order: the stand generally good, but a large per cent. backward. *Gates:* Now up, but looks sick. *Columbus:* Seriously injured by frosts. *Franklin:* Stand fair; farmers busy in "chopping." *Lincoln:* Checked by dry weather and cold nights. *Wayne:* Late, but the appearance superior to that of last year. *Camden:* Stand good. *Mecklenburgh:* The stand very good; more fertilizers used than last year. *Pamlico:* Frost, May 19, killed all the cotton on loose swamplands. *Wake:* Stand injured by cold and dry weather; rapidly recovering. *Alamance:* Looks badly. *Edgecombe:* Generally the stand is very good. *Duplin:* Planting retarded ten days by bad weather; that planted before May came up promptly and looking unusually well. It was too dry, until the 25th, for that planted later to germinate; at least one-half in the county just coming up; stand unusually good. *Wilson:* The stand not good, and the plant small. *Onslow:* Stand not good. *Perquimans:* Fair stand, but backward, and looks much worse than usual. *Anson:* Two to four weeks late.

SOUTH CAROLINA.—*Georgetown:* Good stand, and growing. *Orangeburgh:* Two or three weeks late. *Edgefield:* Indifferent stand, but, according to an old adage, half a stand will yield a full crop. *Greenville:* Last year the rule was, "cotton-fields and corn-patches;" this year, "corn-fields and cotton-patches." *Union:* A remarkably wet and cold spring seriously retarded the planting and growth, rendering it "possum-eared;" now suffering for rain; stand generally good, but deficient in all red lands. *Newberry:* Stand generally good, but two weeks backward. *Barnwell:* More promising than usual. *Laurens:* Early planted, small and dying; late, not yet up to a good stand. *Lexington:* Late good stand, and growing finely. *Darlington:* Good stand and doing well.

GEORGIA.—*Columbia:* Looking well in some localities; in others, sickly. *Muscogee:* Very small, stand imperfect; two weeks late. *Randolph:* Much killed by the frosts. *Troup:* Never saw a better prospect. *Wilkinson:* Planting unusually late, owing to rains. *Webster:* Small, but healthy, and good stand. *McDuffie:* Dry weather prevents the cotton from coming up in stiff clay-lands; twenty days later than in any spring for thirty years. *Douglas:* Area planted equals that of last year, which was 10 to 12 per cent. below average. *Walker:* A good stand, but late, and very small. *Gwinnett:* Good stand, and fair prospect. *Hart:* Stand good, but very small. *Laurens:* Very small, and not healthy. *Clayton:* A fair stand; most of the farmers have it chopped. *Coweta:* Excellent promise. *Marlborough:* Plants very small, but healthy. *Floyd:* A dry May; late planted failed to come up; stand poor. *Putnam:* May a first-rate month for cotton. *Hancock:* Very backward, owing to late spring and excessively dry weather. *Cherokee:* Kept back by extremely dry weather. *Carroll:* Much killed by cold nights, and that standing looks badly. *Lincoln:* Small; no rain in May. *Upshur:* Two to three weeks late, but good stand and fine prospect. *Pulaski:* Good stand, but two weeks late.

FLORIDA.—*Jackson:* Complaints of cut-worms and a bad stand, but has grown finely the last ten days. *Gadsden:* Two weeks late, but healthy and vigorous. *Columbia:* Looking bad; too cool and wet. *Leon:* Has suffered from lice, but is doing well. *Suwannee:* Very backward and defective in stand, owing to late wet spring. Much injured by cotton-lice.

ALABAMA.—*Hale:* Small but good stand and usually free from grass. *Saint Clair:* A fair stand. *Clarke:* Stand good; rain badly needed. *Montgomery:* Clean cultured; good size and with a fair show of fruit-forms. *Franklin:* Looks wonderfully well. *Lawrence:* A month behind, but the plants vigorous and growing. *Conecuh:* Very clear from grass; prospect never better. *Waller:* Small but in good condition. *Wilcox:* Favorable weather

for cotton. *Marion:* Better stand than last year, and more forward. *Colbert:* As promising as ever known. *Winslow:* Very promising. *Dallas:* Good stand and favorable season.

MISSISSIPPI.—*Pike:* Injured by cold nights in April and May. *Marion:* Backward, owing to cool nights. *Wilkinson:* Early planted all killed by cold; replanted. *Coahoma:* Recent rains have improved the condition. *Noxubee:* Small but in fine condition. *Kemper:* In good growing order. *De Soto:* Late but good stand and growing finely. *Clark:* Good stand and well worked. *Adams:* Stand good and looking very healthy. *Holmes:* In many places dying out from the effects of cold nights and lice. *Jefferson:* Stand not good in early planted; in later, good and growing finely.

LOUISIANA.—*East Baton Rouge:* Damaged very seriously by wet weather and late frosts; many plowed up and replanted. *Franklin:* Three to four weeks late; looks tolerably well. *Richland:* Late. *Union:* More backward than ever known. *Washington:* Owing to much cold weather, the stand very poor and the plants dwarfish and sickly. *Madison:* Stand good. Hurt to some extent by lice. *Concordia:* Stand defective. *West Feliciana:* Better stand than last year, but smaller. *Jackson:* Not so large as usual, but the condition entirely satisfactory. *East Feliciana:* The crop curtailed about one-fourth, and corn, oats, and forage-crops planted instead. *Blanco:* Doing well. *Harrison:* Looks very fine.

ARKANSAS.—*Bradley:* Late; good stand and looks well. *Craighead:* A few weeks later than I have seen for the last seventy-five years. *Hempstead:* The finest prospect for years. *Saint Francis:* Looking well, but cut-worms have injured the stand 10 per cent. *Prairie:* The cut-worm has ruined 2 per cent. of the cotton planted; excellent stands. *Izard:* Owing to the cold, wet spring much seed rotted in the ground, and that standing is unusually small and feeble. The cut-worms are making sad havoc. *Dallas:* Looks unusually healthy and strong. *Scott:* The damage by cut-worms has been terrible; many have planted the second time, and some even the third. *Sharp:* Damaged very materially by cut-worms. *Boone:* At least 50 per cent. cut down by cut-worms. *Ashley:* Stands not so good as last year, but the condition better.

TENNESSEE.—*Fayette:* A little late, but in good thrifty condition. *Lincoln:* The plant very small and backward, but looks healthy. *McNairy:* Came up badly and is remarkably small. *Lauderdale:* Better stand and more promising than last year. *Gibson:* A good stand and doing well.

TEXAS.—*Lavaca:* Two weeks late. *Dallas:* Owing to the late cold spring, the stands very sorry; many have had to plant over. *Titus:* The large increase in acreage in cotton and other farm-crops, owing to the rapid settling of the county. *Washington:* Looks quite promising. *Bandera:* Some fields entirely destroyed by cut-worms. *Collin:* Slow in coming up, owing to dry weather; a fair stand; one-third of the farmers abandoning cotton for grain. *Wood:* Somewhat late, but in fine condition. *Wilson:* Was doing well until last week, when the web-worm made its appearance in many places; they have already done great damage. *Red River:* Up well; good stands; prospect of a heavy crop. *Rusk:* Brought forward finely by favorable weather in May. *Matagorda:* Failure in stands in many places; some planted over. *Polk:* The plant generally healthy. *Montgomery:* Never looked better. *Lamar:* Prospect never better. *Anderson:* Condition unusually good. *DeWitt:* Prospect never better. *Henderson:* Bad stands owing to cold spring. *Cooke:* Very small, but now thriving. *Bexar:* Two weeks late; good stand. *Angelina:* A great deal better than last year. *Bosque:* Great complaint of cut-worms, drought and cool nights. *Waller:* Many planters used damaged seed, which gave bad stands. *Shelby:* Very backward, owing to cold spring; many fields replanted. *Hunt:* Late and not more than half a stand in the larger part of the county. *Gillespie:* Injured by drought, but since rain growing rapidly. *Austin:* Late, but worked clean and doing well.

RYE.

The condition of rye is much higher than that of wheat, yet only eight States reach a full average, viz: Maine, New Hampshire, Florida, Alabama, Mississippi, Texas, Arkansas, and Kansas. Average for the central western basin, 86 per cent.

RHODE ISLAND.—*Kent:* Suffered severely in consequence of ice.

NEW YORK.—*Orange:* Damaged by winter-killing.

NEW JERSEY.—*Mercer:* Suffered from the severe winter. Many fields will not average more than 5 bushels per acre.

PENNSYLVANIA.—*Cumberland:* Shorter than usual, yet appears well. *Lehigh:* Average of plants, but retarded by the unfavorable season. *Perry:* The low condition owing to the April freeze. *Warren:* Early in April looked well, but much injured since by cold weather. *Clearfield:* Very materially injured by late freezing. *Lancaster:* Very backward; just coming into heads. *Fulton:* Seriously injured by drought in May. *Jefferson:* Winter-killed where the snow was blown off.

MARYLAND.—*Dorchester:* Promises a full crop. *Howard:* Not more than two-thirds of a crop.

VIRGINIA.—*Campbell:* Rye-culture not extensive but increasing. A quart of seed sent

from the Department in the fall of 1873 yielded about three bushels. That from seed sent last fall is doing well.

NORTH CAROLINA.—*Surry:* Injured by freeze in April. *Wake:* Injured by cold and drought.

GEORGIA.—*Rabun:* Very promising. *Catoosa:* Winter-rye from the Department looking very nice, though the rust is on the blades.

MISSISSIPPI.—Scarcely ever fails in this county; a full crop. *Wilkinson:* Winter-rye nearly all destroyed by rust.

TEXAS.—*Collin:* Winter-rye from the Department a week later than the common, but the heads are larger and very fine. *Lamar:* Will yield better than ever before.

ARKANSAS.—*Prairie:* Wheat extraordinary, and rye, if anything, better. *Izard:* Very little in the county, but that is good. *Arkansas:* Six feet high, and over; very good.

TENNESSEE.—Looks well, but not much raised.

WEST VIRGINIA.—*Pendleton:* Greatly injured by freezes in April.

KENTUCKY.—*Oldham:* Frozen out in winter. *Lincoln:* Was pastured late, for want of feed, and does not look so well on that account.

OHIO.—*Crawford:* Much injured by the severe weather in April.

MICHIGAN.—*Allegan:* Never looked better.

IOWA.—*Des Moines:* Winter-rye damaged more than ever before by the cold and dry weather in April. *Jefferson:* Damaged in winter.

MISSOURI.—*Bates:* The dry fall and cold winter killed nearly all. *Jefferson:* Unusually good. *Platte:* Promised a splendid harvest, but already destroyed by grasshoppers.

KANSAS.—*Allen:* Mostly taken by the grasshoppers. *Brown:* Grasshoppers the cause of low condition. *Washington:* Best prospect for years. *Jackson:* Looked well up to last week; since then the grasshoppers have commenced ravages. *Jefferson:* The reduced condition owing to ravages by grasshoppers. *Leavenworth:* Destroyed by grasshoppers.

NEBRASKA.—*Pawnee:* Grasshoppers have taken 20 per cent., and are still at work. *Boone:* Seemed to stand the freezing and thawing much better than wheat. *Cass:* Cut short one-fourth by grasshoppers. *Thayer:* Looking splendid.

OATS.

The breadth of oats is slightly increased. The comparative area of some of the largest States is as follows: New York, 105; Pennsylvania, 99; Ohio, 98; Michigan, 100; Indiana, 104; Illinois, 105; Missouri, 103. In New York and New Jersey this crop has replaced winter-killed wheat to some extent; and in the West the area has been similarly enlarged.

NEW YORK.—*Queens:* Look well. *Genesee:* Acreage increased, from the wheat area. *Wyoming:* More than usual being sown; coming up well. *Rockland:* Suffering from drought. *Orange:* Materially injured by drought prevailing through May.

NEW JERSEY.—*Warren:* Acreage increased by sowing in place of wheat plowed up. Stand short on account of late sowing and protracted drought.

PENNSYLVANIA.—*Bucks:* Started badly, owing to drought. *Perry:* Low condition, owing to late spring and drought. *Lycoming:* Very backward, owing to cold and very dry weather in May. *Lancaster:* Very backward. *Berks:* Very backward, owing to drought.

MARYLAND.—*Baltimore:* Exceedingly backward and suffering for rain. *Montgomery:* Will be a failure. *Wicomico:* Acreage smaller than usual, owing to the late spring. *Dorchester:* Look poorly, owing to the backward season. *Cecil:* Very much injured by drought.

VIRGINIA.—*Fluvanna:* Weather very favorable for the crops. *Bedford:* Seriously damaged by protracted dry weather. *Augusta:* Injured by hard freeze about the 1st of May, and now suffering from drought. *Highland:* The poorest show I have ever seen. *Amelia:* Farmers think they will not reap the seed sown. *Caroline:* Very late, but may make a fair crop. *Tazewell:* Looking very badly. *Rappahannock:* Will be cut short 50 per cent. by unfavorable weather in May. *Sussex:* A greater acreage than usual, but 5 per cent. below average. *Campbell:* Well-nigh destroyed by the cold and drought. *Bland:* Nearly ruined by the dry weather. *Pittsylvania:* Greatly affected by late spring and unfavorable weather. *Washington:* The worst prospect ever seen. *Dinwiddie:* Late spring and scarcity of seed reduced the area; look badly. *Cumberland:* Suffering very much for rain. *Henrico:* Winter-oats, average; spring, scarcely. *Orange:* Seriously affected by late spring and protracted drought. *Pulaski:* Will be an entire failure without rain soon. *Clarke:* Will be an entire failure. *Craig:* Cannot make more than half a crop. *Chesterfield:* Winter-oats badly killed, but branching finely; spring-oats look bad. *Greenville:* Will be a failure without rain soon. *Mecklenburg:* Injured by frost in April. *Madison:* Very small and indifferent. *Spottsylvania:* No growth. *Prince Edward:* Very backward. *King and Queen:* Poorer than for many years.

NORTH CAROLINA.—*Chowan:* Injured by late cold weather. *Gaston:* Healthy and promising. *Gates:* Spring-oats very much damaged by frosts in May. *Ashe:* Injured to some extent by a severe freeze. *Forsyth:* Very small. *Stokes:* Unusually late. *Cam-*

den: Winter-oats good. *Pamlico:* Injured by frost May 19. *Wake:* Injured by cold and drought. *Wilson:* Look better than wheat. *Caldwell:* A failure, owing to drought. *Hertford:* Unpromising, from cold and dry weather. *Alexander:* Suffering from drought.

SOUTH CAROLINA.—*Union:* Hopeless failure, caused by drought. *Newberry:* Unusually promising. *Edgefield:* Unusually fine.

GEORGIA.—*Gordon:* Short for want of rain. *Troup:* Spring-oats injured by dry weather; winter-oats fine. *Webster:* Good. *McDuffie:* Suffering for rain. *Chattooga:* Very dry May; likely to cut off oats sown in the spring. *Walker:* Spring-oats almost cut off by dry weather. *Laurens:* Good. *Clayton:* Have suffered materially for rain. *Coweta:* Considerably injured by dry weather. *Floyd:* Spring-oats on thin land will be almost a total failure. *Wilkes:* Fall oats, fine, but spring too low for want of rain. *Hancock:* Suffering from drought. *Carroll:* Injured by dry weather. *Lincoln:* Spring-oats almost a failure; no rain in May. *Pulaski:* Cut short by four weeks' drought.

FLORIDA.—*Gadsden:* The harvesting completed and the yield very satisfactory. *Columbia:* Harvested; injured 20 per cent. by rust. *Leon:* Most of the crop harvested; some varieties rusted. *Suwannee:* Much injured by what is known as rust, but believed, by some planters, to be caused by a small greenish or whitish bug, always found on the oats when attacked by rust.

ALABAMA.—*Covington:* Rust has appeared, not yet general, but sufficient to seriously lessen the crop. *DeKalb:* Retarded by dry, cool weather. *Madison:* Injured by drought. *Bullock:* Suffering greatly for rain. *Lawrence:* Good. *Calhoun:* Very poor, owing to drought. *Perry:* Greatly injured by the dry May.

MISSISSIPPI.—*Pike:* The growth never more luxuriant and healthy. *Wilkinson:* The increase of acreage (200 per cent.) is noteworthy. The Sandy, Somerset, and White Schonen oats from the Department, utterly destroyed by rust, while the Mississippi red rust-proofs are perfectly healthy. *Smith:* As fine as ever known. *Noxubee:* Winter-oats very fine; spring, hardly worth cutting. *Rankin:* An excellent crop of fall-sown being harvested; spring-sown almost a failure from drought.

LOUISIANA.—*Jackson:* Oats from seed from the Department have proved a decided success.

TEXAS.—*Uvalde:* The White Schonen oats improve; the Somerset is doing well. *Upshur:* No rust up to this time. *Red River:* Very fine. *Rusk:* Fall-oats were killed last winter; spring-oats not so good as usual. *Lamar:* Will yield better than ever before. *Williamson:* The crop promises 40 to 80 bushels per acre: The acreage four times greater than ever before. *De Witt:* Those who have sown the anti-rust oats have succeeded admirably. *Henderson:* Good. *Cooke:* Very short, owing to a drought in May. *Bexar:* Never better; yield of some fields estimated at 80 bushels per acre. The red oat the only variety which never rusts here. *Bosque:* Much larger acreage than usual, but damaged by frost and drought. *Waller:* Red rust-proof oats from the Department a success; free from rust. *Blanco:* Will yield about 30 bushels per acre.

ARKANSAS.—*Van Buren:* Extra; promise a large yield. *Izard:* Never more promising. *Benton:* Looking very fine.

TENNESSEE.—*Carter:* Almost a total failure, owing to protracted drought. *Knox:* The low condition is owing to a drought of five weeks. *Sevier:* Will be a failure without rain soon. *Hawkins:* Suffering from drought. *Blount:* Look like an entire failure, owing to drought. *Rhea:* Short; no rain since April. *Wilson:* Excellent. *Washington:* Look very bad, owing to cold and subsequent dry weather. *Sullivan:* Damaged too much to make anything like an average crop. *Polk:* Look dwarfish. *Grainger:* Very short.

WEST VIRGINIA.—*Pocahontas:* Late and dwarfed by dry weather. *Wayne:* Suffering from severe drought. *Cabell:* Suffering from drought. *Grant:* A poor stand. *Pendleton:* Greatly injured by freezes in April. *Hancock:* Improved by recent rains.

KENTUCKY.—*Shelby:* Backward and low, owing to cold, dry weather. *Anderson:* At best will be short and very inferior, owing to severe drought. *Boyle:* Almost beyond redemption, from drought. *Jessamine:* An entire failure threatened by drought. *Butler:* Very thin and low. *Lincoln:* Not promising. *Metcalf:* Looking very bad, owing to the cold weather through April and May. *Gallatin:* Promising a good crop. *Greenup:* Will be almost a total failure, from drought. *Henry:* Short, and suffering for rain. *Callaway:* Small crop. *Coshocton:* Early sown; injured by late frosts and drought. *Erie:* Prospect of fair crop. *Meade:* Looks bad.

OHIO.—*Delaware:* A very large acreage, with more than average prospect. *Adams:* Did not come up well; coming forward very slowly.

MICHIGAN.—*Mecosta:* Looking well. *Allegan:* Planted late, but look well.

INDIANA.—*Franklin:* Injured by severe freeze in April, and by dry weather. *Gibson:* Backward, but growing fast. *Harrison:* Very late, and do not improve well. *Steuben:* Look well. *Brown:* Very backward and short.

ILLINOIS.—*Ogle:* Promising. *Putnam:* Damaged by the freeze, which makes the early-sowed thin. *McLean:* The early-sown damaged by cold, and dry weather; some fields plowed up. *Kankakee:* A little damaged by the freeze in April, but now making a splendid growth. *Cook:* Badly injured in April. *Mason:* Look well. *Edwards:* Some damaged by chinches. *Pike:* Weather too dry. *Fayette:* Small acreage, owing to scarcity of seed.

MINNESOTA.—*Isanti:* Very much stunted by drought. *Winona:* Decidedly good in the western half of the county. *Sibley:* One-half already destroyed by grasshoppers.

IOWA.—*Hardin:* Very thin on the ground. *Howard:* Those sown before the 17th of April perished by the freezing of the ground 4½ inches deep; those sown after that look well. *Washington:* Injured by drought for the last six weeks. *Des Moines:* Very thin on the ground. *Muscatine:* Injured by drought.

MISSOURI.—*Daviess:* Doing well. *Saint Genevieve:* Being rapidly devoured by the army-worm. *Callaway:* Look well; chinches plenty, but wet weather keeps them back. *Hickory:* Chinches quite numerous in oats, but not yet doing much damage, owing to wet weather. *Lafayette:* The only crops the countless millions of grasshoppers are leaving are corn and oats; after destroying everything else they may turn attention to them. *Moniteau:* Very promising. *Iron:* Chinches commencing their ravages. *Perry:* Look bad. *Caldwell:* Looking very healthy. *Platte:* Began to show off splendidly; now not a single field left—entirely destroyed by the grasshoppers, more numerous than ever before. *Maries:* Never better. *Henry:* Great ravages by chinches and grasshoppers. *Pettis:* Prospect never better.

KANSAS.—*Allen:* Mostly taken by the grasshoppers. *Brown:* Grasshoppers have destroyed most of the oats. *Cherokee:* Fine; attacked by grasshoppers in but few instances. *Crawford:* Never looked better; may have a good crop if spared by the grasshoppers, which have already done some injury. *Rice:* Never better. *Anderson:* An extra effort made to get out a crop for early feeding, but it is cut short, and in some parts entirely ruined by grasshoppers. Fields that stood 10 inches high two weeks ago are as bare as the road-bed. *Franklin:* Cut short by grasshoppers. In this school-district the area sown in flax-seed and oats, this spring, was 290 acres; now not a vestige remains. *Jefferson:* A large amount destroyed by grasshoppers. *Douglas:* Most of the oats already destroyed by grasshoppers. *Marshall:* Destroyed by grasshoppers. *Graham:* Seem to be failing—turning yellow and dying. *Leavenworth:* All destroyed by grasshoppers. *Osage:* Very few sown for want of seed. *Wabaunsee:* Being destroyed by grasshoppers. *Johnson:* Of my 106 acres of oats the grasshoppers have taken 80, and are still walking. *Labette:* So far free from pests: the most promising crop we have. *Neosho:* Mostly destroyed by grasshoppers. *Atchison:* Greatly damaged by grasshoppers.

NEBRASKA.—*Pawnee:* About 20 per cent. taken by grasshoppers, which are still at work. *Franklin:* Decrease in acreage, owing to scarcity of seed; look well. *Merrick:* Farmers could not obtain seed; small grasshoppers destroying green stuff. *Otoe:* Being destroyed by grasshoppers. *Madison:* Poor; owing to bad seed. *Antelope:* The large decrease in acreage due to scarcity of seed, and to fear of destruction by grasshoppers. *Cass:* Cut short one-fourth by grasshoppers. *Thayer:* Looking splendidly.

UTAH.—*San Pete:* Very good.

COLORADO.—*El Paso:* Deficient, owing to grasshoppers.

NEW MEXICO.—*Taos:* Look bad, owing to late frosts.

DAKOTA.—*Davison:* Never saw better looking. *Lincoln:* Never looked better.

BARLEY.

Spring barley has not quite its usual area in the Middle States, but its acreage has been increased beyond the Mississippi. Ohio and Wisconsin appear to have a full breadth, while other Western States indicate a slight falling off. Condition is generally placed very near an average, with some deterioration from insect ravages and drought,

NEW YORK.—*Genesee:* Acreage increased from plowed-up wheat area. *Wyoming:* Being sown where wheat has been plowed up, and looks well.

TEXAS.—*Lamar:* Will yield better than ever before. *Bosque:* Much better than usual.

ARKANSAS.—*Prairie:* About 50 acres sown in the county; most of it now ready to cut; estimated yield 20 to 50 bushels per acre.

TENNESSEE.—*Washington:* Coming into notice and promises to be a good crop.

KENTUCKY.—*Oldham:* Froze out in the winter.

OHIO.—*Pike:* Short and thin. *Warren:* Winter barley an entire failure; spring, fine.

MICHIGAN.—*Allegan:* Planted late but looks well.

INDIANA.—*Franklin:* An entire failure. *Ripley:* Winter barley almost an entire failure.

ILLINOIS.—*Cook:* Badly injured in April.

WISCONSIN.—*Dodge:* Poor enough, many pieces being plowed up. Chinch-bugs and grasshoppers plenty. *Iowa:* Nearly all destroyed by chinch-bugs. *Jefferson:* Chinch-bugs making sad work with some pieces of barley. *Milwaukee:* Some fields quite destroyed by chinch-bugs. *Sauk:* Chinch-bugs materially injuring the barley, so much so that some have plowed it up.

MINNESOTA.—*Winona:* In the western part of the county, decidedly good. *Sibley:* One-half already destroyed by grasshoppers.

IOWA.—*Howard:* That sown before April 17, perished; that sown later looks well. *Des Moines:* Very thin. *Muscatine:* Injured by drought.

KANSAS.—*Brown:* All destroyed by the grasshoppers. *Jackson:* Looked well up to last week, when the grasshoppers commenced ravages. *Jefferson:* Nearly all destroyed by grasshoppers. *Graham:* Looks fine. *Labette:* Every acre killed by dry freezes in March.

NEBRASKA.—*Madison:* Promises a good crop. *Thayer:* Looking splendid.
CALIFORNIA.—*San Joaquin:* Injured by a "cold wave" the first part of April. *Stanislaus:* The fields very spotted, owing to drought.
UTAH.—*San Pete:* Very good.

CLOVER.

The acreage in clover was increased in all the New England States except Rhode Island. New Jersey maintained her previous area, but the other Middle States reduced theirs from 4 per cent. in New York to 18 per cent. in Delaware. Maryland and Virginia reduced their acreage to some extent, but the other southern coast States enlarged. In the Gulf States this crop has as yet been slightly cultivated. Alabama and Mississippi increased their small clover-fields, while the other States of this region make no returns. Arkansas slightly increased her area, while the other inland Southern States showed a considerable decline. The reduction of acreage was still more general north of the Ohio River and west of the Mississippi, though Wisconsin nearly held her own. The Pacific States enlarged their acreage.

The condition of the clover-crop was greatly depressed by agencies, both animate and inanimate, though the former caused but a small portion of the general disaster. It is remarkable that this crop suffered more severely from winter-killing in the southern than in the northern sections of New England; while Connecticut reports only 82 per cent. of an average, and Rhode Island 60, the other States of this region were nearly or quite average. All of the Middle States were below average, the crop being winter-killed or greatly dwarfed by the extreme cold. The same causes operated in the South Atlantic and Gulf States, though Mississippi reports a full average condition for her small clover-crop. In Arkansas the crop was above average, but in the other inland Southern States it suffered severely from the extreme low temperatures of the winter and spring. North of the Ohio the crop shows the same superiority of condition in the northern sections that was observable in New England. Michigan and Wisconsin show a higher condition than Ohio, Indiana, and Illinois. West of the Mississippi River the crop is cultivated to a small extent; and it showed a very serious depreciation, suffering most in Kansas, where it was subjected, with other crops, to the devastation of grasshoppers. On the Pacific coast it was reduced 20 per cent. below average in California and 5 per cent. in Oregon. The following notes of its condition are condensed from our reports:

MAINE.—*Cumberland:* Needs rain. *Sagadahoc:* Needs rain.
VERMONT.—*Grand Isle;* Clover winter-killed.
RHODE ISLAND.—*Kent:* Clover winter-killed almost universally.
NEW YORK.—*Seneca:* Clover largely plowed up for corn. *Queens:* Much winter-killed. *Kings:* New clover greatly destroyed. *Genesee:* Badly killed.
NEW JERSEY.—*Monmouth:* Largely killed. *Warren:* Very short; cold spring and drought.
PENNSYLVANIA.—*Beaver:* Most of the young clover winter-killed, and plowed up. *Chester:* Young clover sown with wheat is very poor. *Bucks:* Half winter-killed. *York:* Shortened by cold and drought. *Columbia:* Tolerable. *Lycoming:* Very poor.
MARYLAND.—*Calvert:* Greatly dwarfed. *Howard:* Shortened by late, dry spring.
VIRGINIA.—*Highland:* Dried up. *Halifax:* Half crop. *Richmond:* Young clover mostly frost-killed. *Spottsylvania:* Very poor. *Madison:* Very indifferent. *Mecklenburgh:* Injured by frost, April 18. *Henrico:* Short 25 per cent. *Dinwiddie:* Promising clover-crop badly frozen. *King William:* Greatly injured by frost. *Washington:* Half crop. *Campbell:* Greatly injured, but improving. *Rockingham:* Very unpromising. *Prince George:* Damaged by May drought.
NORTH CAROLINA.—*Caldwell:* Clover injured by drought. *Hertford:* Looks fine; nearly ready to cut.
GEORGIA.—*Walker.* Looked well in March, but has suffered from drought.

TENNESSEE.—*Grainger:* Clover short and small. *Lauderdale:* Injured by drought. *Loudon:* Almost a failure. *Sumner:* Young clover a good stand, and vigorous. *Lincoln:* Drought of last summer and army-worms ruined the crops. *Coffee:* Killed by drought of last year. *Greene:* Below average. *Carter:* A failure.

WEST VIRGINIA.—*Jefferson:* Largely destroyed by grasshoppers and drought.

KENTUCKY.—*Gallatin:* Short. *Graves:* Winter-killed. *Calloway:* Mostly frozen out. *La Rue:* Old clover indifferent; young, very fine. *Simpson:* Drought. *Meade:* Drought.

OHIO.—*Warren:* Badly frozen out. *Union:* Badly frozen out for two years; all over a year old destroyed. *Coshocton:* Short. *Ashland:* Mostly frozen out. *Delaware:* Badly frozen out. *Gallia:* Badly frozen out. *Perry:* Mostly frozen out in April. *Lucas:* Winter-killed.

MICHIGAN.—*Lenawee:* Very poor; many have lost their last seeding. *Ottawa:* Looks well.

INDIANA.—*Decatur:* All killed. *Ripley:* Injured by the extreme cold of winter. *Fayette:* Old clover mostly winter-killed, and plowed up for corn. *Washington:* All that was mown or pastured last fall was entirely frozen out. *Gibson:* Mostly killed. *Wabash:* Old clover all frozen out. *Wells:* Badly winter-killed. *Brown:* Badly frozen out. *Fulton:* Largely winter-killed.

ILLINOIS.—Probably 99 per cent. of the seeding of 1874 was ruined by drought; old clover badly winter-killed. *Fulton:* All frozen out. *Schuyler:* All killed except last spring's seeding. *Tazewell:* Froze badly in both old and new meadows. *Clark:* Badly winter-killed. *Monac:* Old clover badly frozen out. *Franklin:* Badly frozen out, especially old clover. *Pike:* Winter-killed; drought. *Macon:* Old clover mostly dead. *Iroquois:* Winter-killed. *Vermillion:* Winter-killed. *Cook:* Winter-killed. *Logan:* Winter-killed.

MINNESOTA.—*Wabasha:* Badly winter-killed.

IOWA.—*Henry:* Winter-killed. *Jefferson:* Winter-killed. *Louisa:* Entirely killed; scarcely a field escaped. *Guthrie:* Alsike came through the winter well.

MISSOURI.—*Caldwell:* Somewhat frozen out. *Jefferson:* Clover now in bloom. *Perry:* Short; badly frozen out.

KANSAS.—*Nemaha:* Mostly killed by drought of last year. *Brown:* Swept by grasshoppers. *Cherokee:* Large acreage sown, but two-thirds eaten by grasshoppers. *Neosho:* Destroyed by grasshoppers.

NEBRASKA.—*York:* Clover tried with indifferent success in a few cases.

PASTURE.

The condition of spring pasture was above average in Maine and Vermont, but below in all the other New England States, the greatest depreciation being in the southern counties. A need of rain was generally noted, and a lateness of growth. The depreciation was general through the Middle and South Atlantic States, where drought and low temperature combined to check vegetation. Fine local rains and improved growing-weather has improved the prospect in many counties. The condition was above average in all the Gulf States except Alabama, and in Arkansas and Tennessee. In West Virginia and Kentucky grass was much injured by cold weather and very backward, but the promise was improving. North of the Ohio River the condition was slightly above average in Michigan, but below average in the other States, the minimum, 81, being in Ohio. West of the Mississippi, Kansas reports a condition above average, but the other States below. In some districts, as in Renville, Minnesota, grasshoppers were devouring the spring pastures. California reports very short crops; but Oregon is above average. Our few reports from the Territories indicate a late growth.

MAINE.—*Androscoggin:* Pasture promising. *Sagadahoc:* Well forward, but needs rain. *Cumberland:* Needs rain.

NEW HAMPSHIRE.—*Hillsborough:* Grass promising, but needs rain. *Carroll:* Grass but little winter-killed.

VERMONT.—*Orleans:* Pasture about sufficient to sustain animals without other feed.

MASSACHUSETTS.—*Norfolk:* Late and below average. *Berkshire:* Good for the season. *Plymouth:* Unpromising.

RHODE ISLAND.—*Kent:* Grasses badly winter-killed.

CONNECTICUT.—*Litchfield:* In many places grass is a dead failure.

NEW YORK.—*Greene:* Burning up. *Rockland:* Rain greatly needed. *Queens:* Very

poor. *Steuben:* Very backward. *Genesee:* Tolerable. *Chenango:* Wants rain. *Westchester:* Very short. *Wyoming:* Slow in starting, but rapidly progressing. *Fulton:* Needs rain. *Jefferson:* Late rains have given a fine start. *Warren:* Fair average. *Orange:* Drought. *Allegany:* Grass frozen stiff June 4.

NEW JERSEY.—*Monmouth:* Rain much needed. *Warren:* Very short; cold spring and drought. *Mercer:* Very short. *Burlington:* Drought.

PENNSYLVANIA.—*Montour:* Grass very short. *Sullivan:* Pastures and meadows very poor; cold and drought. *Mifflin:* Scarce. *Cumberland:* Fields bare. *York:* Shortened by cold and drought. *Franklin:* Very short. *Elk:* Pasture late and farm-animals suffering. *Crawford:* Promises a full average. *Columbia:* Backward. *Lycoming:* Very poor. *Wayne:* Drying up. *Lancaster:* Very short. *Fulton:* Grass-crops unusually bad. *Berks:* Shortened by drought.

MARYLAND.—*Calvert:* Very short. *Frederick:* Poor. *Howard:* Shortened by drought. *Cecil:* Grass injured by drought.

VIRGINIA.—*Highland:* Dried up. *Augusta:* Drought. *Goochland:* Drought. *Madison:* Poor. *Pulaski:* Very short. *Bland:* Drought. *Nelson:* Destructive drought. *Washington:* Dried up. *Floyd:* Needs rain. *Rockingham:* Very unpromising. *Tazewell:* Shorter than for years. *York:* Poor.

NORTH CAROLINA.—Pastures injured. *Caldwell:* Injured by drought.

ALABAMA.—*Perry:* May drought shortened pastures. *Lawrence:* Unusually fine.

TEXAS.—*De Witt:* Grass-crop fine. *Woodruff:* Pasture and meadows never better.

ARKANSAS.—*Van Buren:* Range our only pasture; looks unusually fine. *Arkansas:* Very good.

TENNESSEE.—*Robertson:* Spring pastures a failure. *Lauderdale:* Very little. *Loudon:* Bad season for grasses. *Blount:* Very short and dry. *Hawkins:* Drought.

WEST VIRGINIA.—*Monroe:* Pastures short. *Pocahontas:* Spring pasture very backward. *Jefferson:* Pastures backward and hay scarce. *Braxton:* Injured by cold weather. *Grant:* Grass very scarce and drying up. *Harrison:* Pastures very short. *Barbour:* Dried up. *Pendleton:* Drought. *Hancock:* Greatly improved by late rains.

KENTUCKY.—*Robertson:* Pastures short and backward. *Lincoln:* Unpromising. *Gallatin:* Backward, but improving. *Greenup:* Almost worthless. *Henry:* Becoming luxuriant. *Simpson:* Drought. *Meade:* Drought.

OHIO.—*Jackson:* Pastures very short. *Coshocton:* Short. *Geauga:* Grass-crop better than for years. *Ashland:* Hardly half average. *Belmont:* Grass-crops very unpromising. *Crawford:* Short. *Gallia:* Pastures bare.

MICHIGAN.—*Ottawa:* Grass looks well. *Shiawassee:* Spring pastures rapidly improving.

INDIANA.—*Fayette:* Pastures short. *Decatur:* Backward; poorer than ever before. *Howard:* Very backward. *Ripley:* Pastures in good condition. *Shelby:* Grasses backward. *Steuben:* Doing well. *Dubois:* Fine. *Harrison:* Grass poor. *Perry:* Grass-crops fine. *Fountain:* Remarkably good; cattle never doing better.

ILLINOIS.—*Sangamon:* Greatly benefited by late rains. *Fulton:* Grass-crops look well. *Mercer:* Slow growth. *McLean:* Fair average. *Tazewelt:* Grass-crop light. *Clark:* Grass starting finely. *McHenry:* Grass-crops abundant. *Fayette:* Spring pastures good; excellent rains. *Pike:* Too dry.

WISCONSIN.—*Juneau:* Grasses never looked better; promise of the largest hay-crop ever made here. *Saint Croix:* Grass growing finely.

MINNESOTA.—*Renville:* In the big woods near Saint Peter grasshoppers have taken nearly all the grass, and live stock is driven away for food.

IOWA.—Very poor; drought. *Mahaska:* Grass looks finely. *Muscatine:* Seriously injured by drought and hard winter. *Dallas:* Injured by cold weather. *Henry:* Light. *Guthrie:* Cultivated grasses on the increase. *Fayette:* Kept back by drought, but promising.

MISSOURI.—*Caldwell:* Pasture late and poor. *Knox:* Very backward. *Moniteau:* Timothy meadows killed by drought; hardly worth cutting except on low land. *Bates:* Swept by grasshoppers. *Daviess:* Doing well. *Schuyler:* Badly winter-killed. *Henry:* Cut short by chinches and grasshoppers. *Maries:* Very good.

KANSAS.—*Miami:* Pasture good on high prairies; in the timber-belts it has been swept by grasshoppers. *Washington:* In fine condition; abundant rains. *Anderson:* Early grass cut off by grasshoppers.

NEBRASKA.—*Antelope:* Grass starts slowly.

DAKOTA.—*Yankton:* Grass late.

FRUIT.

Our statistical reports indicate a widespread disaster to the fruit-growing interest, as will be seen from the following notes. Insect-depredations are recorded only in Maine, in some counties of which tent-caterpillars were troublesome. In New England generally the crops were late, and in some parts a tendency to simultaneous blooming ex-

cited remark. In the Middle, Southern, and Western States generally the climatic conditions were very unfavorable. The severity of the winter not only destroyed the fruit-germs, but also the trees. The cold snap in the spring enlarged the scope of this injury, and heavy late frosts in many places destroyed what had survived the winter. In some cases it is noted that plums stood the severity of the season better than other sorts of fruit. In other cases only the hardy crab-apple remained. Grapes in many cases escaped on account of late blooming, but the vineyards of several counties were greatly depleted by the extreme cold. Small fruits were less severely affected, and are frequently reputed as producing very luxuriantly. The following is a brief *résumé* of the condition of the apple and peach crops:

APPLES.—The apple-crop suffered severely in all parts of the country. In New England, Vermont reports an average amount of bloom and condition of the fruit on the 1st of June, though the crop was generally late. Several counties in Maine report injuries from carterpillars. The crop-yield promises to be full average in Vermont and Rhode Island, but in the other States below; Connecticut will gather about two-thirds of a crop.

In the Middle States the fullest bloom was in Delaware, but the best promise of a crop, as inferred from the condition of the fruit, is in New Jersey. In many counties there will be a great scarcity of this fruit.

The same depressing influence marks the crop in the States along the Atlantic coast.

The amount of bloom was from 2 to 20 per cent. below average in the Atlantic-coast States, but the crop grows poorer as the latitude decreases. The condition was but 10 per cent. below average in Maryland, while in South Carolina it is depreciated about 70 per cent.; in Georgia, however, it loses but 25 per cent.

In the Gulf States, Mississippi, Louisiana, and Texas report an amount of bloom full average or above, but in the other States it was below, the minimum, 75 per cent., being in Florida. The condition of the fruit ranged from 77 in Florida to 108 in Texas.

In the inland Southern States the bloom was average in Arkansas, but declined to 60 in West Virginia. The condition of the fruit varied from 80 in Arkansas to 33 in Kentucky.

North of the Ohio River, apples seem to have resisted the cold and other depressing influences better in the northern zone of Michigan and Wisconsin than in regions farther south. The average bloom of counties reporting from Ohio did not exceed 25 per cent. of an average, and the condition of the fruit was but 30 per cent. Indiana and Illinois did not suffer so severely, yet they may not expect probably much over a half-crop. Michigan and Wisconsin will realize considerably over three-fourths of an average crop.

West of the Mississippi the promise is better. The most severe injury is reported in Kansas and Nebraska, where the grasshopper, last year, stripped the trees of foliage and of young wood-growth; yet the two last-named States, if exempted from further visitation, may look for 60 per cent. of an average crop.

On the Pacific coast the crop of California was cut down one-half by the disturbing atmospheric conditions. Oregon, however, presents a condition of fruit nearly up to average, while the bloom was 14 per cent. above.

PEACHES.—The late season kept back the small amount of peach-

growth in Northern New England too late for our June report. A few counties in New Hampshire show an amount of bloom above average, though the condition of the fruit was slightly below. In the other New England States the condition of the crop was nearly average, on the whole, the bloom being rather above.

In the Middle States, Delaware showed a profuse bloom, 25 per cent. above average, but the subsequent condition of the fruit was only average. In the other States of this section the crop was considerably reduced, though its condition was more promising than was indicated by the amount of bloom. Pennsylvania and New Jersey will have considerably over a half crop, while New York will probably harvest nearly three-fourths of an average. In some counties the winter-freezes killed the trees.

In the South Atlantic coast-region the bloom was from 2 to 12 per cent. below average. The condition of the crop was 30 per cent. of an average in North Carolina; 40 in South Carolina; 35 in Virginia; 80 in Georgia; and 92 in Maryland.

In the Gulf States, Mississippi and Louisiana were 5 per cent. above average, considering the amount of bloom and the subsequent condition of the fruit. In Alabama the bloom was above average, but the subsequent condition was 20 per cent. below. Florida and Texas were below average both in bloom and condition. The extreme cold in some localities even as far south as Texas killed the trees.

The crop was greatly injured in Arkansas and West Virginia, and well-nigh ruined in Tennessee and Kentucky, though the bloom, except in West Virginia, indicated nearly a full crop. The fruit condition on the 1st of June was 90 per cent. in Arkansas; 30 in Tennessee; 50 in West Virginia; and 30 in Kentucky.

North of the Ohio River the disaster was still greater. The amount of bloom varied from only 15 per cent. of an average in Ohio to 70 in Wisconsin; the fruit-promise ranged from 25 per cent. in Ohio to 45 per cent. in Michigan. Wisconsin makes no returns, her scanty peach-culture not indicating its results in the tardy season.

West of the Mississippi River, Minnesota makes no returns. In the other States of this region peach-bloom was scanty, ranging from 25 per cent. in Nebraska to 80 in Missouri. The best condition, 72, is in Kansas, and the worst, 30, in Iowa.

On the Pacific coast, California, with a peach-bloom but 5 per cent. below average, reports a condition of fruit 50 per cent. below. In Oregon the bloom was 20 per cent. below average, and the condition of the fruit 25 per cent. below.

The following notes, condensed from the reports of our correspondents, show something of the local disasters to the fruit-crops:

MAINE.—*Oxford:* Apples and peaches injured by caterpillars; otherwise the crops would be good. *Piscataquis:* Promise of a fair apple-bloom. *York:* Apple-bloom just coming out; fair promise for an odd year; caterpillars abundant.

NEW HAMPSHIRE.—*Hillsborough:* Apple-bloom promises to be full.

VERMONT.—*Franklin:* Bloom late but pomising. *Orleans:* Apple-bloom late.

MASSACHUSETTS.—*Norfolk:* Peaches bloomed well; not largely grown. *Berkshire:* Apple and peach bloom abundant. *Plymouth:* All kinds of fruit bloomed simultaneously.

NEW YORK.—*Lewis:* Apple-bloom not full. *Wayne:* Very little apple-bloom. *Queens:* Apples blooming well; pears winter-killed. *Cattaraugus:* Fruit promising. *Wyoming:* Bloom scanty.

NEW JERSEY.—*Warren:* Three-fourths of the apples did not bloom. *Burlington:* Apple-bloom scanty; peaches look well.

PENNSYLVANIA.—Show for fruit not great. *Lehigh:* Many peach-trees winter-killed. *Warren:* Fruit, especially peaches, suffered severely from the hard winter. *Clearfield:* Very light apple-bloom; peach-trees mostly killed. *Cambria:* Fruit-bloom scanty. *Indiana:*

Very little bloom of any kind. *Lycoming:* Poor prospect. *Lawrence:* Frost very destructive.

DELAWARE.—*Sussex:* Peaches greatly injured.

MARYLAND.—*Calvert:* Fruit prospect improving. *Dorchester:* Apple-trees loaded with fruit. *Wicomico:* Fruit injured severely by frost. *Baltimore:* Peaches a short crop; other fruits medium.

VIRGINIA.—*Amelia:* All the peaches and many apples killed in the April cold snap. *Highland:* A few peaches but no apples. *Smyth:* Early fruits fatally frosted. *Augusta:* Nearly all killed. *Bedford:* Frost killed all the peaches and most of the apples. *Goochland:* Most of the fruit, including all the peaches, killed. *Spottsylvania:* Apples half crop; peaches one-eighth. *Mecklenburgh:* Few apples and no peaches. *Prince Edward:* All the peaches and most of the apples destroyed. *Lancaster:* All fruits injured by winter-cold and spring-frosts. *Louisa:* Bloom very abundant, but almost all killed except winter-apples. *Greenville:* A few apples left; no other fruit. *Chesterfield:* Apples generally frosted; Wine Sap and Fallawater have most successfully resisted the cold and are showing good crops; very few peaches. *Craig:* Apples and peaches all killed by the April freeze. *Clarke:* Apple-bloom average, but the fruitage is 40 per cent. less. *Charles City:* Fruit mostly destroyed. *Southampton:* All killed. *Henrico:* Fruit very scarce; two-thirds of the vine-shoots killed. *King George:* Extraordinary bloom of dewberries and blackberries. *Dinwiddie:* Frost swept four-fifths of the crop of apples; other kinds swept clean. *James City:* Few apples or peaches. *Elizabeth City:* April cold very destructive. *King William:* Mostly destroyed. *Princess Anne:* All fruits badly damaged. *Bland:* Mostly killed. *Nelson:* Mostly destroyed. *Patrick:* Peaches mostly destroyed. *Washington:* Apples mostly killed; no peaches. *Pittsylvania:* Killed. *Page:* Nearly all killed. *Campbell:* A few apples, no peaches. *Sussex:* Cold snap killed most of the apples and all the peaches. *Tazewell:* Freeze of April killed the fruit, leaving a half crop of apples. *King and Queen:* Damage by cold, but improving. *Lee:* Fruit a failure.

NORTH CAROLINA.—*Yadkin:* Most of the peaches killed; about a third of a crop of apples. *Wilson:* Fine bloom of apples and peaches nearly or quite all killed. *Edgecombe:* Fine prospect for apples and peaches nearly ruined by April frost. *Burke:* Apples and peaches mostly killed; there will be some fruit in orchards protected by timber from the western winds. *Person:* Apples and peaches frost-killed. *Alamance:* Fruit a failure. *Wake:* Fruit almost destroyed by frost. *Camden:* Except plums, fruit is mostly cut off. *Franklin:* April frosts destroyed all the peaches and most of the apples. *Columbus:* No fruit of any kind. *Ashe:* Fruit mostly killed. *Gates:* Fruit all killed. *Caswell:* Peaches entirely failed; a third of a crop of apples. *Surrey:* Apples badly injured by frost; peaches a total failure. *Transylvania:* Peaches all killed by frost in April; apples escaped, not being in bloom. *McDowell:* Peach and apple bloom 10 per cent. above average and 50 per cent. above last year. *Caldwell:* Many apples and nearly all the peaches killed by April frosts and cold weather. *Yancey:* Apples injured and nearly all the peaches killed by the freeze of April 13. *Hertford:* Fruit mostly cut off; grapes doing very well. *Montgomery:* Fruit mostly killed. *Bladen:* All fruit frost killed. *Anson:* Peach and apple bloom very abundant, but the fruitage mostly frost-killed.

SOUTH CAROLINA.—*Darlington:* Peaches, apples, and pears frost-killed; small fruits good. *Marion:* Apples and peaches mostly destroyed. *Lexington:* Apples and peaches mostly failed. *Laurens:* April frosts very destructive. *Richland:* A few peaches; no apples; grapes killed, but a second crop has appeared. *Fairfield:* Apples badly injured by frost; peaches mostly killed. *Greenville:* Frost left very little. *Orangeburgh:* Many apple-trees died from some cause; peaches frosted.

FLORIDA.—*Santa Rosa:* Fruit-blooms injured by extremes of heat and cold. *Columbia:* Peaches frosted and shedding; half-crop. *Jackson:* Peaches fully up to last year.

GEORGIA.—*Morgan:* Late frosts cut off the fruit. *Carroll:* Apples and peaches frost-killed. *Clayton:* Apple prospect poor; plenty of peaches. *Whitfield:* Apples and peaches largely frost-killed. *Gwinnett:* Prospect for peaches the best for ten years; apple-crop short. *Fannin:* The late freeze killed many apples and all the peaches. *Gordon:* Fruit destroyed by late frosts.

ALABAMA.—*Perry:* Peach-crop unusually good. *Calhoun:* Apples mostly failed; three-fourths of a peach-crop. *Madison:* Apples and peaches frost-killed. *Livingston:* All fruits killed. *DeKalb:* Greatly injured by frost. *Montgomery:* Apples and peaches bloomed well; fruitage healthy, but apples not so great in quantity as usual; strawberries a full crop. *Marion:* Apples thin on the trees but large; peaches plenty in high lands but frost-killed on low lands. *Walker;* Nearly all frost-killed.

MISSISSIPPI.—*Holmes:* Peaches bloomed abundantly, but rains, frost, blight, and worms injured the crops greatly. *Kemper:* Fruit a comparative failure. *Noxubee:* Scarce and small. *Smith:* Apples and peaches a full average in spite of the late cold weather. *Wayne:* Fruit will not be as good as last year, except in a few localities. If the Early Beatrice prove to be as prolific a bearer as the Hale's Early, it will be the most valuable market-fruit of our section. *Amite:* Peach and apple crops fine; small fruits doing well. *Pike:* Peaches and apples very fine.

LOUISIANA.—*Concordia:* Fruit prospects very promising. *Washington:* Prospect tolerable. *East Baton Rouge:* Large and promising crops.

TEXAS.—*Henderson:* Apples never better; January cold weather killed half the peach-trees, and left the remainder in bad condition. *Wood:* Apples shortened by worms. *Kendall:* Greatly injured by a hail-storm. *Bandera:* Late frosts killed three-fourths of the apples and peaches. *Austin:* Peaches injured by dry, cold winds.

ARKANSAS.—*Boone:* Apples and peaches frost-killed. *Benton:* Apples and peaches badly injured by cold. *Washington:* Very few apples or peaches. *Izard:* Half crop of apples; other fruits mostly killed. *Saint Francis:* Peach-crops good, but late; apples considerably damaged by caterpillars. *Van Buren:* Fruit mostly frost-killed; what escaped is indifferent. *Jefferson:* Prospects remarkably good. *Stone:* Apples and peaches killed by late frosts. *Arkansas:* Apples good; peaches extraordinarily large and fine.

TENNESSEE.—*Putnam:* The spring freeze thinned out the apples to about a good crop, which is very promising; peaches mostly killed. *Jefferson:* Fruit a failure. *Dickson:* Late frosts made a clean sweep of apples and peaches. *Grainger:* Small fruits abundant. *Lauderdale:* Late frost killed two-thirds of peaches and apples. *Sullivan:* Fruits badly injured by April freezes. *Bedford:* Frosts in April killed nearly all the fruit. *Trousdale:* Very few apples or peaches. *Sequatchie:* Apple and peach bloom full, but frosts have cut off the crop one-half. *Warren:* Summer apples and peaches a failure; fall and winter apples injured; loss estimated as high as $100,000 in the county. *Lawrence:* Apples and peaches all killed. *Lincoln:* April cold-snap destroyed the fruit. *Blount:* Apples half average bloom and afterward depleted by frosts; peaches full bloom and mostly frost-killed. *Hawkins:* Fruit mostly killed in bloom. *Sevier:* Fruit failed; no peaches except in a few mountain-gorges. *Knox:* Fruit mostly frost-killed. *Greene:* Few apples and still fewer peaches. *Fayette:* Fruit greatly frost-killed; apples worse than peaches. *Carter:* A large apple and peach bloom killed by spring frosts.

WEST VIRGINIA.—*Marion:* Badly injured in April. *Monroe:* A fine promise of fruit ruined by frost April 16; trees more or less injured; sweet-cherry-trees fatally. *Raleigh:* Total failure of fruit. *Wayne:* Apples and pears mostly destroyed by cold weather, April 16 and 17. *Braxton:* Badly frost-killed. *Fayette:* Freeze of April 16 and 17 killed nearly all the apple-bloom; small fruit and grapes badly injured; tame raspberries generally killed down to within a few inches of the ground, except where they had been covered; we will have only small fruits this year. *Harrison:* Apples a failure and peaches but little better. *Jackson:* Severe April weather killed most of the apple-bloom and much of the peach-wood. *Boone:* Fruit killed except a few apples. *Cabell:* A few late apples only. *Barbour:* Apples, cherries, and peaches killed. *Nichols:* All killed by April frost. *Pendleton:* All destroyed. *Mason:* Poor prospect. *Upshur:* Apples and peaches frost-killed. *Preston:* Destructive frosts. *Mercer:* Nearly all the fruit killed.

KENTUCKY.—*Clinton:* All of the peaches and most of the apples killed; some apples that had not bloomed may escape. *Jefferson:* Severe cold destroyed nearly all the fruit-buds. *Anderson:* Severe weather in April very destructive; fine promise of fruit blasted. *Boyle:* All sorts of fruit killed by the April freeze; even the blackberries were cut off. *Edmonson:* All forward fruits badly injured. *Logan:* Apples will not average more than fifteen or twenty to the tree; peaches, five or six; no plums or cherries. *Mason:* Small fruits tolerable; others a failure. *Breckinridge:* Apples and peaches badly frosted. *Butler:* Apples about a fifth of a crop; peaches still less; a few plums and cherries; grapes one-fourth of a crop. *Lincoln:* Fruit-crop not worth notice. *Metcalfe:* Few apples and no peaches. *Gullatin:* All fruits failed except blackberries. *Graves:* Half the apples killed; the rest doing well; three-fourths of the peaches killed. *Greenup:* Apples and peaches mostly destroyed. *Henry:* All kinds of fruit destroyed. *Callaway:* Fruit mostly destroyed. *Larue:* Apples and peaches mostly killed. *Owsley:* Fruit all killed.

OHIO.—*Williams:* Apples largely killed; peaches seldom make a crop. *Hocking:* Fruit mostly killed. *Jackson:* April cold-snap made a clean sweep of fruit. *Medina:* Apples overbore last year, and would have had a light crop this year without any frost; it had but little damage to do; other fruits badly injured. *Vinton:* Fruit injured by the hard freeze. *Coshocton:* Apples and peaches failed; there will be some cherries; plums and grapes a full crop. *Hancock:* Apples badly frosted. *Mercer:* Fruit nearly all killed. *Richland:* Apples and peaches mostly winter-killed. *Tuscarawas:* Apples and peaches a failure. *Ashland:* Apples and peaches a complete failure; pears a shade better; grapes very promising. *Belmont:* Greatest fruit-failure on record. *Crawford:* All winter-killed except some grapes and currants. *Highland:* No fruit except currants and gooseberries. *Brown:* Not an apple or peach blossom; winter destructive; many peach-trees killed. *Carroll:* Apples and peaches a failure. *Delaware:* Fruit an entire failure. *Jefferson:* Apples and peaches mostly winter-killed; not over 10 per cent. of average bloom. *Sandusky:* No peaches; most of the trees killed. *Pike:* Only a few late apples; no peaches. *Lucas:* Very few peaches. *Athens:* No apples or peaches; peach-trees generally injured.

MICHIGAN.—*Lapeer:* Peaches all killed by cold weather. *Hillsdale:* Peaches failed. *Ottawa:* Peach-buds mostly killed; trees injured. *Saginaw:* Apples damaged; peaches killed. *Van Buren:* No fruit except a small amount at South Haven; grapes much injured. *Tuscola:* Peaches almost nothing. *Barry:* Peach-trees killed down to the ground; very

scanty apple-bloom. *Ottawa:* Only the hardiest apple-trees living; no peaches. *Washtenaw:* Fruit-trees badly killed. *Allegan:* Fruit-crops mostly ruined. *Antrim:* Fruit severely injured; Baldwin apples frosted. *Manistee:* Three-fourths of the peach-trees killed; pears also suffered, but other fruits are very promising; pears considerably blighted. *Mason:* Peach-trees mostly destroyed. *Shiawassee:* Scanty apple-bloom; no peaches. *Charlevoix:* Fruit killed; cherry and apple trees injured to a great extent.

INDIANA.—*Madison:* No fruit except a few currants and cherries; peach-trees mostly winter-killed. *Dearborn:* Frost made a clean sweep of apples and other fruits; half the strawberries and most of the blackberries killed. *Howard:* Few apples, and no peaches; small fruits generally killed. *Jennings:* Fruit a failure, except grapes and a few late apples and pears. Fruit killed April 16 and 17. *Shelby:* No apples or peaches; small fruit scarce. *Washington:* Apples and peaches nearly all killed. *Dubois:* Apple-bloom large, but fruit dropping. *Gibson:* All sorts will be scarce. *Harrison:* Badly injured by frost; a few apples; pears and peaches nearly all killed. *Tippecanoe:* Fruit prospect poor. *Jasper:* Some kinds of apples bloomed well, but are fruiting poorly. *White:* Poor fruit-crops. *Hendricks:* No fruit. *Montgomery:* Fruit badly frosted; mostly a failure. *Wells:* Peaches nearly all killed; few apples or cherries. *Franklin:* Apples and peaches a failure; many trees killed. *Fountain:* Apple-trees put out considerable bloom, but the fruitage is almost nothing; no pears or peaches; many peach and cherry trees killed. *Carroll:* Many apple-trees killed. *Fulton:* But little fruit.

ILLINOIS.—*Iroquois:* Fruit will be very scarce. *Vermillion:* Few apples and no peaches. *Cook:* Apples injured by four years of drought. *Pope:* Apples and peaches mostly frost-killed. *Mercer:* Peaches all killed; Morello cherries, a moderate bloom; pears half a crop; apples differ according to their varieties; small fruits moderate. *McLean:* Apple-bloom light, but fruitage fair. *Bureau:* Winter apples very few. *Jasper:* Three-fourths of the apples and peaches failed. *Johnson:* Peach bloom heavy, but two-thirds killed by frost. *Pulaski:* Fruit injured by hail. *Shelby:* Very little fruit. *Franklin:* Fruit very scarce. *Fayette:* Apples half a crop; peaches scarce. *Mason:* Apple-bloom good, but fruitage small.

WISCONSIN.—*Juneau:* Apples and pears mostly destroyed by frosts early in May. *Columbia:* Long, cold winter killed many fine fruit-trees. *Dodge:* Apple-trees suffered greatly the last two winters. *Washington:* Small apple-crop. *Calumet:* Fruit-trees badly injured by the severe winter. *Waupaca:* Last winter was very severe on fruit-trees; whole orchards killed; only crab-apples stood the test unharmed.

MINNESOTA.—*Martin:* Wild plums successfully cultivated; better than the tame varieties.

IOWA.—*Muscatine:* Apple-crop almost a failure; cherry and fruit trees dead in large numbers. *Van Buren:* Grapes and berries promise an abundant crop; several varieties of cherries damaged. *Cerro Gordo:* But one peach-tree bloomed in the county. *Fremont:* Apples, peaches, and cherries entirely failed. *Hardin:* Apples bloomed well, but blighted badly. *Harrison:* Scanty apple-bloom but promising fruitage. *Jefferson:* Peaches winter-killed.

MISSOURI.—*Caldwell:* Fair prospect for apples; fair show of peaches in sheltered localities, but the trees were generally injured severely by the hard winter. *Macon:* Good prospect of apples; no peaches. *Knox:* Peaches winter-killed. *Perry:* Apples bloomed fully, but early varieties were frost-killed; peaches mostly killed; small fruits promising. *Stoddard:* Peaches mostly frost-killed. *Bates:* Peaches and apples taken by grasshoppers. *Daviess:* Peaches winter-killed; many trees destroyed. *Montgomery:* Almost a total failure of apples and peaches. *Callaway:* Abundant bloom, but fruitage largely taken by frost; apples and pears have dropped off, but grapes look well; vines full. *Crawford:* But little bloom. *Pemiscot:* Peaches frosted, April 16. *Nodaway:* Young apples falling. *Maries:* Generally frost-killed. *Taney:* Peaches mostly frost-killed.

KANSAS.—*Douglas:* Peaches promise a partial crop; apples almost a failure; cherries bloomed full, but show little fruit; grapes cut by the grasshoppers. *Butler:* Peaches promise a large crop. *Washington:* No peaches and few apples. *Lincoln:* Fruit-trees so damaged by grasshoppers last year that they have not bloomed this spring; all of last year's growth of wood was destroyed. *Republic:* Peaches all dead, as well as nearly all the new-set orchards. *Sedgwick:* Grasshoppers last year destroyed this year's peaches. *Marion:* Peach-trees largely winter-killed. *Nemaha:* Fruit-trees and vines largely injured by drought and grasshoppers last year. *Greenwood:* Trees injured by grasshoppers last year. *Montgomery:* Apples destroyed by grasshoppers last year. *Atchison:* General failure. *Neosho:* No fruit; foliage and young growth of last year destroyed by grasshoppers.

CALIFORNIA.—*Mariposa:* All sorts failed except grapes. *Santa Clara:* Frost has shortened all stone-fruit crops; cold winds injurious. *Alameda:* Badly frosted. *Contra Costa:* Apples and plums, half a crop; pears and peaches, three-fourths; apricots, very few. *Kern:* Fruit mostly killed by late frost. *Butte:* Most of the fruit frost-killed. *Tuolumne:* Apples and pears, a fourth of a crop; other fruits destroyed. *Amador:* Late frosts destructive to fruit in bloom; grapes, being still later, escaped, and promise a fine crop. *Stanislaus:* Frost killed half the apples, three-fourths of the peaches, and all the apricots.

OREGON.—*Clackamas:* Lawton blackberries injured by frost. *Grant:* Peach-blossoms killed by extreme cold winter; trees injured. *Douglas:* Peaches all killed; other fruits promising.

MAPLE SUGAR AND MOLASSES.

New England considerably enlarged her product of sugar. The only State reporting a decline upon last year is Connecticut, in which the product is 95 per cent. New Hampshire is full average; Maine, Vermont, and Massachusetts very considerably above. In Rhode Island the product was too small to attract attention. The product of molasses was not so large, being below average in New Hampshire, Massachusetts, and Connecticut, a deficiency which the increased product of Maine and Vermont will not bring up to the standard of last year. Of the Middle States, New Jersey and Delaware make no report. New York declines 15 per cent. from last year, both in sugar and molasses. Pennsylvania will yield about three-fourths of last year's crop. With one exception, the South Atlantic coast and Gulf States failed to note any sugar production. Virginia reports a product of sugar equal to 87 per cent. of last year, and 96 per cent. of molasses. Of the inland Southern States, Arkansas makes no returns. Tennessee reports a decline of 15 per cent. of sugar and 12 per cent. of molasses. West Virginia and Kentucky are a little in advance of last year. North of the Ohio River the sugar and molasses product declined from 11 per cent. in Wisconsin to 39 per cent. in Michigan. West of the Mississippi the sugar product increased in Minnesota, and declined in Iowa and Missouri. The molasses produced declined in all three, being not over 64 per cent. of last year's product in Iowa. No returns from the other Western and Pacific States. The season was generally shortened by the cold weather.

COWS AND CALVES.

In New England the condition of cows was about average on the whole, Massachusetts and New Hampshire being slightly above, and Maine and Connecticut falling a little below. The number of calves dropped was somewhat above last year's returns in Maine, Vermont, and Rhode Island, but below in the other States of this section.

In the Middle States, the condition was average in New York, and below in the other States. New York and New Jersey report as many calves dropped as last year, while in Pennsylvania and Delaware there is a slight falling off.

The condition of cows was full average or above in North Carolina and Georgia, but in the other Atlantic coast States a decline is reported. Only South Carolina maintains last year's number of calves dropped, the other States declining from 1 per cent. in Maryland to 4 per cent. in Georgia.

Texas alone of the Gulf States maintains an average condition of cows, and a number of calves dropped equal to last year's. Mississippi shows a loss in condition of 3 per cent., and a decrease of 9 per cent. in calves. The other States of this region make a better report.

The inland Southern States show a decline in condition of cows, ranging from 2 per cent. in Arkansas to 14 per cent. in West Virginia. The loss in calves varies from 2 per cent. in Arkansas to 11 per cent. in West Virginia. In some localities our correspondents complain of neglect of cows, many of which did not give any attention to their calves.

All the States north of the Ohio River failed to maintain the condition of cows, the greatest decline being 7 per cent. in Wisconsin. Indiana dropped as many calves as last year, but all the other States came short, Ohio 6 per cent. In Medina, Ohio, there were more farrow cows

than ever known before. Even where bulls ran in the pasture with the cows the latter failed to get with calf. Effingham, Illinois, reports a great loss of calves from the severity of the season.

West of the Mississippi, Kansas shows an improved condition of cows, 3 per cent. above average, while the other States decline, Missouri as low as 17 per cent. In all the States of this section, except Missouri, the number of calves dropped equals or exceeds last year's. In some parts of Minnesota the severe winter caused many cows to drop their calves prematurely. In some localities in Kansas cows lost calves through defective feeding.

On the Pacific coast, California returns an improved condition of cows, and a decrease in calves; Oregon a slightly depressed condition of cows, but an increased production of calves.

SHEEP AND LAMBS.

The losses of mature sheep are reported to exceed two millions. The actual percentage of loss is made 6.7.

The small but well-kept flocks of Massachusetts show a loss of but 3 per cent. of grown sheep, and 6 per cent. of the lambs dropped. The greatest loss of sheep in the other New England States—9 per cent.—was in Rhode Island; the greatest loss among lambs dropped—13 per cent.—was in Vermont, where the winter was quite severe in the sheep-raising districts. New London, Connecticut, reports an unusual mortality, the cause of which is not stated.

In the Middle States, New York lost 6 per cent. of her grown sheep, and 16 per cent. of her lambs dropped; New Jersey, 5 per cent. of sheep, and 9 per cent. of lambs; Pennsylvania, 7 per cent. of sheep, and 13 per cent. of lambs; Delaware, 5.3 per cent. of sheep, and 20.3 per cent. of lambs. The mortality of these animals was greatly increased by the extreme cold weather, but it is remarkable that the greatest loss of lambs was in Delaware, the most southern of these States.

Along the South-Atlantic coast, Maryland reports the smallest mortality of sheep—6 per cent.; but the greatest mortality of lambs dropped, 17 per cent. In Virginia, the losses of these two classes, respectively, were 10 and 12 per cent.; in North Carolina, 10 and 13 per cent.; in South Carolina, 9 and 14 per cent.; in Georgia, 13 per cent. each. In Maryland, the lambing season was reported as very unfavorable.

In the Gulf States the mortality among sheep and lambs was very large. The large loss of lambs in many counties was attributed to the unusual cold of the lambing season and the lack of care on the part of farmers.

Arkansas and Tennessee lost 12 per cent. in sheep, while West Virginia lost only 7½ per cent., and Kentucky 8 per cent. The loss of lambs was lightest in Tennessee, 12 per cent.; and heaviest in Arkansas, 19 per cent.; West Virginia lost 16 per cent., and Kentucky 17 per cent. Unusual snow-storms prevailed in many counties during the lambing season, causing great destruction.

North of the Ohio River, the rate of mortality declines. Here sheep-husbandry is more merciful in the treatment of the animals and more thrifty in its results. The severity of the winter, however, gives a high average mortality of sheep, ranging from 4 per cent. in Wisconsin to 7 per cent. in Indiana and Illinois; Ohio and Michigan average 5 per cent.; Indiana lost 14 per cent. of her lambs dropped; the other States lost 12 per cent.

West of the Mississippi River the smallest loss of grown sheep—5 per cent.—was in Nebraska; Kansas lost 6 per cent.; Iowa and Minnesota, 7 per cent.; Missouri, 11 per cent. The losses of lambs were as follows: Minnesota, 12 per cent.; Iowa and Kansas, 10 per cent.; Missouri, 18 per cent.; Nebraska, 9 per cent. Our correspondent in Butler, Kansas, touches the real point in the case when he attributes the mortality among both sheep and lambs to defective feeding. One flock in Ellis County, of that State, which dropped 3,000 lambs, did not lose 1 per cent.

California lost 6 per cent. of her sheep, and 9 per cent. of her lambs; Oregon, 10 per cent. of sheep, and 13 per cent. of lambs.

Table showing the condition of the crops, &c., on the 1st day of June, 1875.

States.	WINTER-WHEAT.	WINTER-RYE.	WINTER-BARLEY.	SPRING-WHEAT.		SPRING-BARLEY.		OATS.		SPRING-PASTURE.	CLOVER.	
	Average condition June 1.	Average condition June 1.	Average condition June 1.	Acreage sown this spring compared with last.	Average condition June 1.	Acreage sown this spring compared with last.	Average condition June 1.	Acreage compared last year.	Average condition June 1.	Average condition June 1.	Acreage compared with last year.	Average condition June 1.
Maine	100	104	.....	97	101	95	100	103	99	101	106	103
New Hampshire	100	100	.....	99	98	100	100	100	102	96	101	99
Vermont	87	95	.....	93	102	102	100	104	103	101	100	99
Massachusetts	.....	97	.....	.....	.....	89	95	108	99	92	100	100
Rhode Island	.....	80	.....	.....	.....	90	92	95	92	73	93	60
Connecticut	75	82	.....	100	83	98	86	96	85	77	102	82
New York	55	80	.....	97	93	92	102	105	94	89	96	89
New Jersey	62	81	.....	.....	.....	.....	.....	99	87	70	100	61
Pennsylvania	75	82	.....	94	87	99	84	99	87	76	92	78
Delaware	84	92	.....	.....	.....	.....	.....	90	80	82	82	87
Maryland	65	85	.....	.....	.....	.....	.....	95	75	78	94	75
Virginia	80	89	.....	.....	.....	.....	.....	90	75	76	97	74
North Carolina	98	95	.....	.....	.....	.....	.....	96	88	89	102	90
South Carolina	97	99	100	.....	.....	.....	.....	101	92	96	100	98
Georgia	100	98	97	108	99	.....	.....	110	97	94	105	95
Florida	.....	100	.....	.....	.....	.....	.....	106	94	102	.....	.....
Alabama	104	103	.....	.....	.....	.....	.....	101	90	88	105	92
Mississippi	109	101	.....	.....	.....	.....	.....	115	109	105	115	100
Louisiana	75	99	.....	.....	.....	.....	.....	114	95	100	.....	.....
Texas	115	106	108	121	108	105	102	111	101	102	.....	.....
Arkansas	95	107	.....	.....	.....	.....	.....	111	104	101	102	103
Tennessee	90	94	100	92	97	.....	.....	101	84	110	97	85
West Virginia	60	74	.....	.....	.....	.....	.....	93	73	72	94	80
Kentucky	81	92	.....	.....	.....	.....	.....	93	80	80	90	74
Ohio	57	72	42	98	89	110	88	98	84	81	86	66
Michigan	80	92	94	112	100	96	99	100	100	101	98	97
Indiana	71	79	74	.....	.....	.....	.....	104	97	94	90	87
Illinois	64	84	.....	81	91	97	92	105	96	96	87	80
Wisconsin	98	98	.....	93	94	101	97	105	100	96	99	93
Minnesota	85	90	.....	94	99	88	99	99	98	92	97	88
Iowa	62	89	.....	93	97	97	94	102	97	93	99	89
Missouri	55	79	68	71	57	.....	.....	103	97	96	85	86
Kansas	97	101	.....	120	97	108	99	105	97	101	78	42
Nebraska	90	95	.....	115	105	101	98	110	96	95	.....	.....
California	65	66	67	99	52	108	54	96	58	74	108	80
Oregon	99	98	102	112	98	106	97	106	97	101	105	95

Table showing the condition of the crops, &c.—Continued.

States.	MAPLE SUGAR AND MOLASSES.		COWS AND CALVES.		SHEEP.		COTTON.		APPLES.		PEACHES.	
	Product of sugar this year compared with last.	Product of molasses this year compared with last.	Average condition of cows this spring.	How many calves have been dropped this spring for every hundred dropped last spring.	How many sheep in every hundred have been lost by disease or other casualties?	How many lambs have died in every hundred dropped this spring?	Acreage compared with last year.	Average condition June 1.	Average amount of bloom this spring.	Average condition of the crop June 1.	Average amount of bloom this spring.	Average condition of the crop June 1.
Maine	113	114	99	103	5	13	.....	.....	65	70	.....	.....
New Hampshire	100	98	101	98	4	10	.....	.....	83	86	100	95
Vermont	106	106	100	104	6	13	.....	.....	104	100	.....	.....
Massachusetts	120	92	102	99	3	6	.....	.....	86	93	101	94
Rhode Island	.....	.....	100	100	9	12	.....	.....	80	100	100	100
Connecticut	95	95	97	97	5	10	.....	.....	50	70	103	100
New York	85	85	100	101	6	16	.....	.....	78	75	75	72
New Jersey	.....	.....	98	100	5	9	.....	.....	60	84	70	55
Pennsylvania	75	80	97	99	7	13	.....	.....	60	70	50	60
Delaware	.....	.....	97	97	5	20	.....	.....	95	55	125	100
Maryland	.....	.....	94	99	6	17	.....	.....	90	90	88	92
Virginia	87	96	95	97	10	12	95	94	81	50	83	35
North Carolina	.....	.....	101	97	10	13	102	92	98	50	98	30
South Carolina	.....	.....	98	104	9	17	106	97	90	30	90	40
Georgia	.....	.....	101	96	13	13	96	91	80	75	95	80
Florida	.....	.....	97	97	6	12	99	94	75	77	95	80
Alabama	.....	.....	99	99	12	18	104	101	95	75	103	80
Mississippi	.....	.....	97	91	11	16	102	100	109	95	105	100
Louisiana	.....	.....	99	97	12	12	101	95	100	97	105	103
Texas	.....	.....	101	102	10	9	108	96	100	108	95	98
Arkansas	.....	.....	98	98	12	19	101	90	100	90	108	90
Tennessee	85	88	94	94	12	12	92	99	95	45	105	30
West Virginia	103	99	86	99	7	16	.....	.....	60	40	50	50
Kentucky	103	102	96	97	8	17	.....	.....	75	33	85	30
Ohio	80	85	94	96	5	12	.....	.....	25	30	15	25
Michigan	61	61	95	97	5	12	.....	.....	80	85	40	45
Indiana	84	94	96	100	7	14	.....	.....	60	55	40	33
Illinois	64	69	92	97	7	14	.....	.....	65	69	45	30
Wisconsin	89	88	93	99	4	13	.....	.....	70	75	.....	.....
Minnesota	102	91	96	103	7	12	.....	.....	97	85	.....	.....
Iowa	55	64	97	101	7	10	.....	.....	81	85	40	30
Missouri	96	96	83	96	11	18	105	95	90	81	80	64
Kansas	.....	.....	103	100	6	10	.....	.....	40	60	55	72
Nebraska	.....	.....	91	102	5	9	.....	.....	65	65	25	40
California	.....	.....	102	98	6	9	.....	.....	90	51	95	50
Oregon	.....	.....	97	102	10	13	.....	.....	110	100	80	75

EXTRACTS FROM CORRESPONDENCE.

MIGRATION OF COLORED LABORERS.—*Giles, Tennessee:* There has been of late a great exodus of negroes to the promised land—Kansas. There is, in consequence, a great opening for industrious farm-hands, mechanics, and house-help. I know of no section offering so many advantages as East Tennessee.

DESTITUTION.—*Montgomery, Tennessee:* The saddest thing we ever saw among us is the gathering of people at the mills for food. Their money and their provisions are now gone. How hundreds of our people are to escape starvation till the crops come we cannot say.

GRASS-CULTURE.—*Guthrie, Iowa:* Many of our farmers, for fear of being driven to grass, have concluded to go to grass. Tame grasses are to be seen in almost every neighborhood. My Alsike clover came through the winter in good order. Rye also finds favor in some places for pasture; it has stood the winter well.

CO-OPERATIVE STOCK-SALE.—*Frederick, Maryland:* The Patrons of Husbandry of this county held a "stock-sale" April 27, which was quite a success. It is to be followed semi-annually by others. The Patrons have started a cheese-factory on the co-operative plan. It promises well.

REED-HAY.—*Edgecombe, North Carolina:* Our farmers, to a considerable extent, are using reeds for long forage. The old reeds are cut down and the young sprouts from the roots are mowed, making a very superior hay, which is well relished by horses.

DEPARTMENT SEEDS.—*Cherokee, Texas:* I can fully substantiate the remarks of your correspondent in Waller, Texas, in regard to the seed sent out from the Department. Very few failed to germinate, and the product is the best of their kind. *Giles, Tenn.:* A poor man residing near me says that the Fultz wheat which he received from the Department through me two years ago will benefit him this year to the extent of $200. It is the finest wheat in the neighborhood.

HUMANE TREATMENT OF LIVE STOCK.—*Lincoln, Kansas:* Sheep have done better the past winter than I ever knew them to do before. Stockmen of all kinds are beginning to learn that it pays to take better care of their stock through the winter than they have been doing heretofore.

CORN-CULTURE.—*Clay, Indiana:* In 1874 I raised an acre of a new variety of corn; product, 100 bushels. The ears were from 9 to 14 inches long, with 16 to 22 rows of grain on each. Some ears counted contained 1,430 grains. It was planted May 15, on a very rough sod of new ground, without manure. It ripens before the October frosts.

MORTALITY AMONG OLD PEOPLE.—*Trimble, Kentucky:* More old inhabitants of our county have died of the prevailing pneumonia than ever before. The type of disease is very severe.

ORCHARD-GRASS.—*Butler, Kansas:* I sowed some orchard-grass seed this spring, and some of the grass has already attained the height of 15 inches.

A FINE AGRICULTURAL REGION.—*Perry, Tennessee:* We have a fine county. It is situated, for the greater part, between Buffalo and Ten-

nessee rivers; the rivers through this county run almost parallel, and are about twelve miles apart. At an average distance of about one and one-half miles from Buffalo River, and about four miles apart, creeks arise, which flow westward into Tennessee River, affording inexhaustible supplies of never-failing water. We have the greatest variety and quantity of timber; a great many of our oaks and poplars measuring 21 feet in circumference, and frequently 60 feet to the lowest limb. The river and creek bottoms—one-fourth of the county—are exceedingly fertile, yielding, when properly cultivated, 50 bushels of corn or 40 bushels of wheat per acre, and grow all the grasses in luxuriance without any manure. Our climate is all that could be desired: winters mild, summers not too hot, plenty of rain about equally distributed throughout the year, and a good home-market. Still, despite all these advantages, we make a specialty of the pea-nut, which is exhausting our soil, destroying the prosperity of the land-owner, and bringing the renter to bankruptcy. That no community of farmers can prosper by the cultivation of a specialty was first taught me by the present commissioner, and experience has since verified the truth of his position. To thrive, we must diversify our crops. Acreage of pea-nuts 50 per cent. more than an average, and the crop is promising—*to bring us to the poor-house.*

CLAWSON WHEAT.—*San Joaquin, California:* When sowing my wheat in December last, I left a strip of land 10 feet wide and 150 yards long unsown. In February, when the wheat sown in December was about 8 inches high, I sowed on the land so reserved 6 pounds of Clawson wheat, received from the Department. We have only had one rain since. Some of the grains never germinated, and when it came up the stools were about 12 inches apart. I never saw any grain stool or tiller out as it did. To-day it stands higher than the wheat on both sides of it, sown in December. The heads will average 6 inches in length. It is now in the "dough," but with such large heads the probability is the grain will be more or less shrunken. The ground is very dry now, and rain is not to be expected after this. So far I think very highly of it.

"FRENCH TOBACCO."—*Gallatin County, Kentucky:* The term "French tobacco" is old, having been in use by tobacco-growers in Northern Kentucky as far back as I can recollect, which is at least forty-five years. Why this term was first applied to that particular blight I cannot state, but time and use have so sanctioned it, that its application is well understood by most tobacco-growers. The causes that produce the blighted tobacco called French are local. There are certain localities, in flat, beech-timber lands peculiarly adapted to this kind of growth under any circumstances. The best remedy or preventive is early and prompt cultivation as soon as the plant has shown any signs of growth after being set, but never working or stirring the soil when wet. A very wintry or wet season will produce more or less French tobacco on almost any kind of soil. The little attention or work that can be given under such circumstances is not sufficient to prevent this kind of growth. A lazy man, on soil not well adapted to the growth of the plant under unfavorable circumstances, will be sure to raise the worthless French tobacco.

A FLOOD IN TENNESSEE.—*Sevierville, Sevier County:* It commenced raining here on the 23d of February, and poured down all day and night. At 3 o'clock in the afternoon on the 24th, Little Pigeon River was 4 feet deep in our streets, our town being on the level river bottom between the

east and west forks. The water subsequently fell back about 2 feet, but at 9 p. m. it commenced rising again and continued to rise till 4½ a. m. on 25th, when it was 10 feet deep in the streets, and was in every house in town. All had to go up stairs, and a sad time we had. No human lives were lost, but the destruction of property was great—not less than $100,000 worth in the county. Nearly every mill and saw-mill was carried off, and not a bridge is left. River farms were swept of everything, and some of the finest were so washed that they are ruined. Nearly all the grain and hay stored along the French Broad and Little Pigeon Rivers was swept off. Cattle, sheep, hogs, some horses and cows, and nearly all the calves in Sevierville were drowned.

THE BUFFALO-GNAT.—*Fayette, Tennessee, May* 10: This section has suffered very great loss of mules and horses by the buffalo-gnat. The loss of Fayette County is estimated as high as $500,000 by some. This however, I think an exaggeration. I have been here nine years, and this is the first season in which they have done any serious damage. They appear regularly in the river swamps every year, and every planter has a remedy. The best and only sure remedy is to put the stock *at once* in a dark stable and build smokes. Various preparations for greasing the vulnerable parts are recommended; the best is a half-and-half mixture of pine-tar and lard. What is remarkable about this visitation is that those of our citizens who have lived in the swamps and thought they knew all about it applied their grease and kept on working, and yet lost heavily, while those who knew nothing about it, becoming alarmed, stabled their animals and lost nothing. The visitation lasted about three days. Death doubtless is partly caused by loss of blood, but mainly by poisoning the circulation.

AGRICULTURAL LIGHTS AND SHADES IN MISSISSIPPI.—*Hinds:* In some townships every man, woman, and child appears to have a worthless dog, very hungry, and generally mangy. One consequence is that sheep cannot be trusted out of sight by day or out of the yard by night. Crops are looking well, especially corn. People are working better and buying less from market than at any time in the last ten years. We are hopeful of better times. The only thing we have to fear now is reckless extravagance of State and county officials.

STATISTICS OF DAIRY FACTORIES.

The following averages of milk and cheese production are deduced from statements of dairy factories in the State of New York. Many factory reports have been set aside on account of omissions of necessary particulars, an omission the more to be regretted from the fact that factory men generally have not been in the habit of publishing accounts of their operations, and hence material of this description has never been abundant. In reducing pounds of milk to gallons, we take the specific gravity of milk of fair quality at 1.03, accepting this as sufficiently determined by the investigations of Dr. Voelcker, of England, and other chemists who have had large experience in examinations of milk. The weight of the standard gallon (distilled water) in this country being officially placed at 8.3389 pounds, we hence calculate the average weight of one gallon of milk at 8.589 pounds.

Reports of one hundred and seventeen cheese and butter factories in

the State of New York, for the season of 1874, show the following particulars: Aggregate of average number of cows for the season, employed by these factories, 36,429; milk received, 118,093,222 pounds; average per cow 3,241.73 pounds, or 377.42 gallons; lowest average number of cows for the season employed by a single factory, 55; highest, 800. General average 311; average length of factory season, averaged on the number of factories without regard to size, 6.24 months; regarding the average number of cows in each, 6.44 months. Of the one hundred and seventeen factories five are exhibited as devoted wholly or in large part to butter; one hundred and twelve show an average of 331 pounds of cheese per cow; average amount of milk required for one pound of cured cheese, 9.82 pounds. These one hundred and twelve factories also report 36,141 pounds of butter, averaging 1.02 pounds per cow. Four factories, averaging a season of 9.58 months, exhibit 1,388 cows as the average number for the season, and 4,356.8 pounds, equivalent to 507.25 gallons, of milk per cow; each cow averaged 451.9 pounds of cheese and 8 pounds of butter. These averages of milk and cheese must be somewhat above the true average per cow for the season, since the number of cows contributing to the factory is always largest during the largest flow of milk. The factories rarely open with their full quota, and in the fall a part of the cows are withdrawn for butter-making on the farm.

So far we have considered only the average number of cows employed by the factory for the season, but ninety-nine of these factories report for 1874 both the average for the season and the greatest number contributing at any time. They exhibit an average for the season of 31,405 cows, but a "greatest number" of 36,084, being 14.89 per cent. in excess of the average number. In the tables of the New York State census of 1865, one hundred and twenty-seven factories, reporting for the season of 1864, show 16.62 per cent. excess of "greatest number of cows" over "average number," and one hundred and thirty-three factories show an average of 307 cows per factory.

The tables presented in the reports of the American Dairymen's Association are quite imperfect as regards the average number of cows per factory for the season. It appears that the "greatest number" is often put in place of the average, and *vice versa*. The particulars in the following table have been collected from detailed statements appearing in these reports:

Year.	Number of factories.	Average number of cows.	Average length of season. *	Milk received.	Cheese made.	Average of cheese per cow.
			Months.	*Pounds.*	*Pounds.*	*Pounds.*
1863	12	4,529	For eleven factories....6.4	15,575,583	1,565,723	345
1864	19	8,161	For seven factories.....5.9	25,238,505	2,574,101	315
1865	25	14,049	For twelve factories....7.3	48,784,656	4,932,656	351
1866	21	10,056	For eleven factories....6.6	36,711,856	3,760,992	374
1867	21	7,209	For five factories 6.1	23,904,722	2,425,816	336
1868	16	6,895	For eight factories.....6.4	21,650,993	2,195,700	318
1869	9	4,310	For eight factories..... 6.1	14,127,004	1,464,824	339
1870	6	3,495	For five factories.....7.1	11,153,377	1,124,034	321
1871	4	2,015	For three factories 6.3	6,633,601	678,634	336
1872	3	1,665	For two factories 8.1	6,130,896	626,472	376
1873	3	1,660	For three factories 7.4	5,515,451	559,119	336

* Many factories did not report the length of season.

For 1864 we here give only those returns that are not presented in the State census exhibit of one hundred and thirty-three factories in 1864.

For all the reports in the above table the average of milk per cow, for the season, is 3,363.7 pounds, or 391.63 gallons; of cheese, 342 pounds; of milk for one pound of cheese, 9.833 pounds. Average length of season of seventy-five statements, 6.7 months. Some of the factories reported butter from whey or from cream of partly-skimmed milk. At many factories patrons were allowed, during a certain portion of the season, to skim night's milk.

The average product per cow for 1864 was relatively small, owing to unusually severe drought during the summer. The State census of 1865 in reporting statistics of one hundred and thirty-three factories, each employing 300 cows or more, exhibits the average of milk per cow at 2,801.9 pounds, or 326.21 gallons, for a season, averaging about 6.1 months; the cheese-product averaged 283 pounds per cow, showing 9.915 pounds of milk for one of cheese; aggregate average number of cows for the season, 67,034.

In illustration of the differences between herds contributing to factories, we present certain averages obtained by summarizing statements of fifty-seven factories for 1874, which, in each case, give statistics of best dairy and poorest dairy for the season. Average length of season, 6.5 months. Average net receipts, by patrons, for 100 pounds of milk, $1.229, or about 2.63 cents per quart. Average net receipt per cow, by patrons, $40.336, showing 382.11 gallons of milk per cow. Best dairies, average net receipts per cow, by patrons, $52.99, showing 501.99 gallons of milk per cow. Poorest dairies, average net receipts per cow, $30.63, showing 290.17 gallons per cow. Excess of average yield, per cow, of best dairies over that of poorest dairies, 211.82 gallons, or 73 per cent. The statement of the well-known Weeks factory, in Oneida County, exhibits, for a season of 7.2 months, a net receipt by patrons, per 100 pounds of milk, of $1.2825; average number of cows for the season, 750, yielding 425.94 gallons per head. Best dairy, 10 cows, average net per cow, to patrons, $77.85, showing 706.73 gallons per cow; poorest dairy, 10 cows, net per cow, $37.11, showing 336.89 gallons per cow. Excess of yield per cow, of best dairy over poorest, in 7.2 months, 369.84 gallons, or nearly 110 per cent. The factory of E. L. Stone, in Mannsville, Jefferson County, reports one cow which yielded in 7.3 months 7,937 pounds of milk, or 924.08 gallons, and one which yielded for the same season 7,690 pounds of milk, or 895.33 gallons. Net money to patrons, $91.36, and $90.82.

We return to the point of the average yield per cow, for the factory season, and for a term of years, in the New York dairy regions. We have had in review three hundred and eighty-nine factory statements, of which one hundred and fifty-two, or 39 per cent., are for the exceptionally unfavorable season of 1864, and this large proportion of low exhibits will prevent us from combining all of the statements for an average for a course of years. Omitting, now, the statements for 1864, we have two hundred and thirty-seven factory reports, representing 92,312 cows, aggregate of averages for the season, and a yield per cow of 3,339.5 pounds of milk, or 388.81 gallons, for a season of a little more than six months. From two hundred and thirty-two of these statements we obtain an average of 340 pounds of cheese per cow, for the factory season. Judging from all attainable data, these figures for milk and cheese are the highest at which the factory average for a term of years can be placed; and we have already shown that, from the manner in which the averages are made up at the factory, the true yield per cow must fall below even the factory average. But the approximate which we have attained is sufficiently close to serve a valuable purpose

as a means for comparison, and for the correction of frequent exaggerations of general dairy production.

AVERAGE YIELD OF MILK-HERDS.—Dr. E. L. Sturtevant of Massachusetts, furnishes an account of the milk-product of a herd of cows in Pennsylvania, comprising five Ayrshires, three and one-half years to nine years old; one Jersey, ten years old; two Jersey grades, six years and seven years old; and two Durham grades, four and one-half years and nineteen years old. The account is for the year April 1, 1874, to April 1, 1875, and shows 4,148.9 pounds of milk as the average yield per cow, which, at 8.589 pounds of milk per gallon, would be equivalent to 483 gallons. Average number of days in milk, 286.7.

A statement of the Messrs. Sturtevant on their herd at South Framingham, Mass., exhibits the following particulars: In the first year of the record the herd was composed entirely of "natives," but it was afterward, by gradual elimination and substitution, converted into an Ayrshire herd. In the second year the herd included one Jersey and four Ayrshires; in the third year, two Jerseys and four Ayrshires; in the fourth year, thirteen Ayrshires, the rest being natives. In the subsequent years the cows were all Ayrshires. In the table we convert pounds of milk into gallons, on the above-mentioned basis:

Year.	Number of cows.	Average number of days in milk.	Average yield per cow.	Year.	Number of cows.	Average number of days in milk.	Average yield per cow.
			Gallons.				*Gallons.*
1867	25	278	553.6	1871	14	296	585.2
1868	29	301	562.8	1872	13	300	704.0
1869	20	292	487.7	1873	13	291	636.0
1870	18	298	671.6	1874	7	316	660.7

Reducing the record of eight years to the basis of one year, we have 556.4 gallons as the average annual yield per cow of 68 natives, and 639 gallons as the average annual yield of 68 Ayrshires.

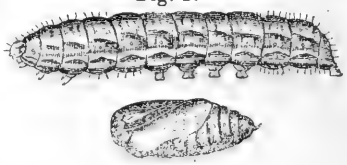
From the records of the Agricultural College of New Jersey we summarize the yield of a herd of Ayrshires, short-horns, and natives as follows: For the year November, 1870, to November, 1871, seven Ayrshires and five natives, average yield, 735.2 gallons. Average of Ayrshires, 782.6 gallons; of natives, 669 gallons. For the year November, 1871, to November, 1872, six Ayrshires, two short-horns, and seven natives, average yield, 742 gallons. Average yield of Ayrshires, 814.5 gallons; of short-horns, 557.7 gallons; of natives, 732.5 gallons. For the year November, 1872, to November, 1873, five Ayrshires, one short-horn, and six natives, average yield, 674.7 gallons. Average yield of Ayrshires, 663.9 gallons; of natives, 652.7 gallons; yield of one short-horn, 867 gallons. Two of the Ayrshires were very old; one of the short-horns never recovered from injuries received during importation, and died in 1873. In the first year of the record one of the natives was only six months in milk. The two short-horns were actually connected with the herd in 1870–'71, but are not here reckoned for that year, their yield having been greatly affected by the voyage of the previous year.

ENTOMOLOGICAL RECORD.

By Townend Glover, Entomologist.

Cut-worms.—Cut-worms or surface-grubs are the caterpillars which eventually produce dark-brown or gray moths, so plentiful in houses during the evening, flying around lights, and during the day remaining motionless on walls or hiding in corners. These insects have been very abundant and injurious during the present season in many parts of the United States, the caterpillars destroying all kinds of garden and field produce, especially vegetables, as cabbage, &c., and in the fields injuring maize or corn when young and tender. In the more southern States it has been reported as particularly attacking young cotton-plants this season, as will be shown by the following extract from a letter received from a correspondent, Mr. J. Pettigrew, of Charleston, Franklin County, Arkansas, who has given a very interesting account of the damage done by this insect in his neighborhood, and who, also, to a certain degree, has described its habits. Mr. Pettigrew writes:

Fig. 1.



I have sent you some specimens of the cut-worms which have been exceedingly destructive to many species of vegetation in this county. They appeared about the 1st of April, and have destroyed hundreds of acres of cotton, which has had to be planted over. In the vegetable-gardens, cabbages, onions, and tomatoes are the special objects of their attacks, and they have greatly damaged the potato-crop. During the night they feed, and with the appearance of the sun they seek a retreat from its rays by getting under something, or by burrowing in the ground. In the cotton-field they feed during the day. The crust of the ground, raised by the spreading of the cotton-seed, affords them a shelter from the sun. The worm has been more destructive here this spring than at any time in the history of the country, but they are now disappearing.

The moths of this insect are very inconspicuous in markings, and are almost all of a gray or brown color, with ornamentation of a dark brown or almost black in some species, but more faint and indistinct in others. When settled on walls or in crevices during the day the moths assume a triangular or rather cone-shaped attitude, with the upper wings closely folded over their backs. The cut-worms themselves (Fig. 1) are fat, greasy-looking, naked or hairless caterpillars, of a gray or brown color, marked and shaded with a darker brown or gray on each segment of their bodies, and when nearly full-grown they have a disproportionately small head. When disturbed they often assume more or less of a semicircular or circular form, and remain motionless as long as molested. (Fig. 2.) When thus rolled up they seem so fat and full of juice that their skins appear almost tight enough to burst open.

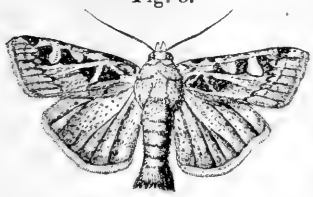
Fig. 2.

The chrysalids (Fig. 1, lower figure) are formed more or less deep in the ground, and the early brood of moths emerge from the earth in a short time after the caterpillar has buried itself, while the late brood remain as pupæ or chrysalids all winter, and are the small brown motionless bodies or cases so often plowed up and overlooked by the horticulturist or farmer; some species, however, remain as caterpillars through the winter and only assume the chrysalis form late in spring or early in summer.

There are a great many species of cut-worms or *Agrotis* in the United

States, and all of them are more or less similarly marked, and of similar habits; some feed during dull, cloudy days, while others feed only at night, or in the evening or morning; some dig holes near the plants they injure, and draw the leaves they have cut from the plants into their hole or receptacle to be eaten at leisure during the day, while others attack only young plants, eating them off close to the ground; one or more species are said to climb trees and shrubs and cut off their shoots, leaves, and buds.

Fig. 3.

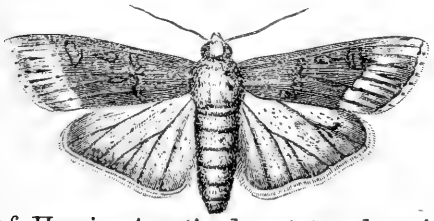


Among the most common of the cut-worms in this part of the country is the "dingy cut-worm," *Agrotis jaculifera*, (Fig. 3,) which cuts off the plants near the surface of the ground, and either eats them at night or draws them into the hole it inhabits during the day, and devours them at leisure. A species of digger-wasp *(Ammophila)* is said to destroy this cut-worm, carrying the caterpillars to its nest and storing them as food for its young.

Agrotis suffusa, (Fig. 4,) the dark sward-grass worm or moth, is of somewhat similar habits; the caterpillar of the lance rustic, *Agrotis telifera*, (Fig. 5,) or greasy cut-worm, is nocturnal, and an omnivorous feeder. This insect by some is said to be the same as *A. suffusa*. The unarmed rustic, or variegated cut-worm, in the young caterpillar state, before the first moult of the skin, is said to be somewhat gregarious, and to have a peculiar leaping gait, and to live on leaves, but after the first moult they lose the habit of leaping, and begin to show the true cut-worm habit of hiding in the day under the surface of the ground, and of cutting down vegetables, &c.

Agrotis clandestina, or the clandestine owlet moth of Harris, is said to drag its food, consisting of leaves of young plants, to places of concealment, under stones, &c., and also to have the habit of climbing trees and shrubs, to cut off their leaves and blossoms during the evening. The caterpillars of *Agrotis subgothica*, (Fig. 6,) or the western striped cut-worm, eats stems and lower leaves of plants, and the insects appear in summer, while the cabbage cut-worm of Harris, *Agrotis devastator*, deposits its eggs in the autumn at the roots of plants; these are said to hatch in May, and while in the caterpillar state (about four weeks' duration) feed upon the lower leaves of vegetables. The caterpillars of *Agrotis scandens*, or the climbing rustic, at night ascends trees and shrubs to cut off their blossoms and leaf-buds.

Fig. 4.

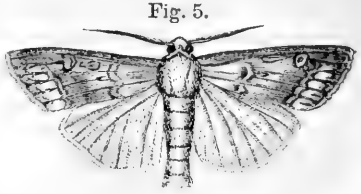


There are other species of cut-worms known to our naturalists, which we will not mention in this article, as enough has been said to give some general idea of the habits and food of the principal species of cut-worms in our own neighborhood, all of which are shared by the *agrotidæ* or cut-worms in general.

Many of these insects are destroyed when in the caterpillar state by the footless larva of a *Tachina* or two-winged fly, which lives in their bodies. Many species of ichneumon-flies also destroy them in a similar manner. Wasps carry them off to their nests as food for their young, while multitudes of the grubs are destroyed by crows, black-birds, &c., when plowed up in the spring and lying helpless on the surface of the

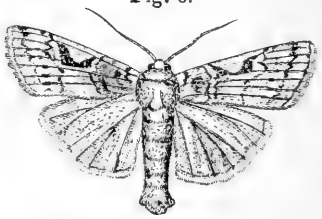
ground. Fall plowing will turn up and expose these insects to the inclemency of the winter. Manuring the field with sea-mud is said to be useful.

Fig. 5.



Searching for the worms when they come out to feed, or digging them from their holes near the plant, and killing them, is doubtless the most effectual remedy we can employ. Curtis says one-quarter ounce of salt dissolved in a quart of water will drive the grub away, and preserve the plant till washed off by rain. "Tobacco-water will kill them if it comes in contact with them. Quicklime will also destroy them if put on the plants when wet, and dry soot dug into the ground is very offensive to the grub." Suds made of one pound of soap to ten gallons of water, and applied warm, will cause them to dart out, when they can be immediately killed. Four ounces of aloes dissolved in a gallon of water and applied to the plants, is said to preserve them from the cut-worm Smooth holes made with a rake or hoe-handle near the plants will serve as traps into which the worms fall, and may there be destroyed. Coal-tar and water, a spoonful of the former to a gallon of the latter, will, it is said, drive the worm away without injuring the plant. Where a few choice plants are to be protected, this may be done by wrapping stiff paper or walnut-leaves around the stem when setting them out, leaving the paper a little above ground, and an inch or two below. Cow-dung stirred in water, and poured around the plant so that the solid part will remain and form a hard surface, through which the worm cannot penetrate, has been recommended. For a similar insect in Europe, Köllar advises lime-ashes applied to the land, or lime-water in damp weather. If the female moths are attracted by sweet liquids, many of them may be killed, and as they are also lured by lights in the evening they may be destroyed in this manner to some extent.

Fig. 6.



PHILLOXERA VASTATRIX IN AUSTRIA.—The following account of the appearance of the *Phylloxera vastatrix* in Austria is condensed from a late official publication of the Austrian minister of agriculture:

In France, in 1865, at Pujaut, near Roquemaure, department du Gard, for the first time an insect was observed injuring the roots of grape-vines so that they died. The occurrence excited chiefly the interest of scientists, and it was believed to be the same insect found in galls on grape-leaves by A. Fitch in North America, and by him called *Pemphigus vitifolia*. The newly-discovered insect, first scientifically described by Planchon, evidently belonged to the *Phylloxera** family, and on account of the extraordinary damage its increasing numbers inflicted on the vineyards, it was called *vastatrix*.

In 1868 France awoke to the necessity of adopting energetic measures for the suppression of this scourge, which almost unnoticed had assumed fearful dimensions. The question was asked, (and it is not yet an-

* The name *Phylloxera* comes from *phyllon*, a leaf, *and xerainein*, to dry, a name given by Fouscolombe in 1834 to the species found on oak trees. Four species of *Phylloxera* are now known; viz: *P. quercus* on summer oak, *Quercus robur, L.*; *P. quercus*, on white oak, *Q. alba*; *P. Lichtensteinii* on *Q. coccifera*; *P. vastatrix* on *L. vitis*. The first three are probably harmless.

swered,) is this insect of native or foreign origin? In some places, as Bordeaux, they believe in its introduction on American vines, which nevertheless withstand its attacks much better than their own. Then there is the fact that, except in a few instances in France, it is only found on the roots in Europe, which renders it possible we have two species of insects to deal with. A French scientist, Loarer, thinks the *Phylloxera* was introduced from the East Indies* by eggs brought to Marseilles in bales of merchandise. But after all there is nothing to hinder the presumption that the insect has always accompanied the vine,† though formerly unnoticed, and that favorable conditions of weather, &c., have enabled it to increase at the present time with such alarming rapidity.

The number of remedies which have been proposed and tried is enormous. The Herault commission alone experimented with 124 in the domain of Las Sorres from January to June, 1873, including the following substances: Verdigris, phenic acid, sulphuric acid, garlic, aloes, alum, ammonia, nitrate of silver, potters' clay, arsenious acid, arsenic sulphide, asafetida, gypsum, calomel, camphor, carbonate of lime, caustic lime, chloride of lime, carbonate of potash, wood-ashes, charcoal in powder, bone-meal, chlorate of potassa, corrosive sublimate, chrome, sealing-wax, decoction of poppies, leather-scraps, blue vitriol and other salts of copper, sea-water, compost, turpentine, sulphate of iron, horse-dung, wood-tar, Peruvian guano, bran, sulphur, oil of juniper, olive-oil, naphtha, petroleum, potassic permanganate, mercuric sulphate, saltpeter, bone-charcoal, nux-vomica, walnut-leaves, benzine, ground apatite, goat-hair, sulphate of potash, pine sawdust, poudrette, Peruvian bark, sea-sand, white and black soap, slate-meal, flowers of sulphur, and sulphur in various forms and combinations, soot, tobacco, oak-bark, rape-seed cake, pignuts, sesame, castor-oil, urine, vinegar, creosote, carbolic acid, suds, &c. Some of these are used in mixtures the composition of which is unknown. To these remedies must be added various modes of treatment, such as boring the trunk of the vine and impregnating the sap, the planting of certain herbs near the stock, as hoarhound, garden cress, chamomile, pyrethrum, &c.; also the introduction of natural enemies of the *Phylloxera*, as lady-bugs, pselaphus, chrysopa, ants, and spiders. None of these have proved completely successful remedies. Many of them certainly destroy the insects, but the difficulty lies in obtaining the necessary contact, which it is often impossible to accomplish.

In 1869, Louis Faucon proposed to flood the vineyards, and the remedy proved successful. It can, however, only be applied on level grounds, where the necessary supply of water can be obtained. Recently it has been said only to prove effectual on sandy soil with clay subsoil, a condition not always to be obtained. Perhaps in some cases the water destroys the insect, but not its eggs.

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* Drouyn de l'Huys, in his address before the grape-growers' congress at Montpelier, 26 Oct. 1874, appeared to agree with this opinion. In the East Indies proper there are, however, no grape-vines, these being grown only in Afghanistan and Nepaul.

† Experienced gardeners in Klosterneuburg have stated that the vineyards in which the *Phylloxera* first appeared were destroyed about a hundred years ago by some cause which was never satisfactorily explained. And it is said that in Hungary, near Szegedin and Theresienopel, between sixty and one hundred years ago, an insect appeared on the roots of the vine as destructive as the *Phylloxera* now is. It was finally extirpated by the use of ashes and lime. In the neighborhood of Gorz, fifty to sixty years ago, a vine-root louse appeared that was checked by a wet season; and it is to be observed that a special prayer in the Talmud includes the vine-louse. But these allusions may refer to something different from the *Phylloxera*.

Lichtenstein observes the insect is not found in sandy soil, and proposes dressing the vine-roots with sand by raising them as far as possible and placing a layer of sand in the hole before relaying them.

Thenard, in 1873, found that the vapor of carbon disulphide penetrated the soil to a considerable distance from the place in which the liquid was deposited, killing the insect and its eggs; but it also destroyed the vines, so that it can only be applied when necessity arises for the extermination of the pest.

In the report of Dumas to the Paris Academy of Science, June 4, 1874, the following summary remedial measures are recommended: As preventive, when the plague first appears, all infected stocks should be dug up and burned, and the soil thoroughly poisoned with carbonic disulphide or some of its alkaline salts. Heavy manuring and the application of poisons is recommended when the evil has obtained such foothold as to render its extirpation doubtful. New vineyards should only be planted on sandy ground or ground that may be flooded.

So little has been accomplished by way of remedy, that, in consideration of the frightful loss resulting in 1874 from the rapid spread of the *Phylloxera*, the French government offered a prize of 300,000 francs for a successful cure. The insect has totally destroyed 200,000 hectares of vineyards in the valley of the Rhone, and has attacked nearly a million. It was observed in the forcing-houses of England and Ireland, by Westwood, in 1863. The Austrian department of agriculture was informed of the advent of the *Phylloxera* in France by the zoölogical-botanical society of Vienna, in 1869. The managers of the crown-lands and the agricultural societies in vine-growing districts were immediately requested to carefully watch for symptoms of the scourge, and the import of vines from France to the school at Klosterneuburg was prohibited. But early in the summer of 1872 Dr. L. Rösler discovered the insect in the experimental garden of pomology at Klosterneuburg, on some unhealthy-looking Clavner stocks, whose backwardness had been attributed by the working gardeners to the want of the usual protection of snow the preceding winter. About three klafters distant were a number of American vines of the Clinton variety, partly from Baden and partly direct from North Hoboken, in New Jersey, planted before any suspicion had arisen that the *Phylloxera* was introduced from North America. But notwithstanding these and all other American varieties grew with wonderful luxuriance, an examination of their roots proved them to be completely colonized with *Phylloxera*. Baron Von Babo, director of the school, considers this fact as establishing a strong probability that the insect was introduced by the American vines, but of course it is impossible to assert it as a positive fact.

During 1873 no perceptible increase of the malady in the experimental gardens was observed. Every conceivable method of combating the pest was adopted, and Dr. Rösler reported that vines which in 1872 were evidently attacked appeared to be freed from it, and were pushing vigorous young roots, especially where manure was dug in deeply.

But in 1874 a mild winter was followed by a notable increase of the insects. Cold winters and wet summers are hence considered as detrimental to its extension. Also, this year, the appearance of the winged form gave rise to dread of its rapid extension; examination with the microscope proving that at least a part of the flying insects were females laden with eggs. Notwithstanding the persistent efforts to unveil its life-history, it is only recently we are enabled to present a detailed account.

The vine-louse, *Phylloxera vastatrix*, Planchon, belongs to the class *Insecta*, order *Hemiptera*, sub-order *Homoptera*, family of plant-lice, *Phytophthires*, tribe of leaf-lice, *Aphides*, in which are numerous genera, as *Rhizobius*, *Eriosoma*, *Chermes*, *Lachnus*, *Aphis*, &c. The vine-louse appears to belong to this last, though Cornu places it between *Aphis* and *Coccus*. It is so small as scarcely to be distinguished by the naked eye, oval, with a thick body, and blunt abdomen composed of seven rings, six slender legs with short feet, a small, beak-shaped, incurved head, with a proboscis composed of four sucking-tubes, that usually lie on its breast. Full-grown insects are somewhat warty, and are a bright yellow.

Like other leaf-lice, they increase partheno-genetically; the males first appear just before winter in small numbers in the last brood of the season, and after impregnation the females lay eggs which develop the following spring. These eggs produce only females, called nurses, who, without further commerce, lay eggs, and are also, to some extent, said to be viviparous. This last fact has rarely been observed in the *Phylloxera*, and is doubted by the French Academy. This method of propagation continues until the power of a sexual increase is exhausted, when males, usually winged, are again developed. At the same time the so-called "nurses" become nymphs, or dark-colored, winged, and perfect insects.* By this alternation of generation the increase of numbers is enormously rapid. Reaumur places it at 6,000,000,000 from one female in a summer, but this is too low; for if a nurse *Phylloxera* lays 30 eggs, which produce perfect insects, their descendants in the twelfth generation will number 17,714,700,000,000,000 individuals. The injury caused by a single puncture such as they make in the bark of the roots, or even several, is very slight, but when multiplied by such immense numbers, is ample cause for the serious damages which have been inflicted on the European vineyards.

The food of this class of insects is the sap of plants, which they usually obtain from the leaves, on which they form galls. Some of the species change their host-plant with each change of form, the perfect insect feeding on a different plant from that on which its nurse-mother fed; and this fact is said by Lichtenstein to have been observed with regard to the *Phylloxera*, but it cannot be considered as fully established.

The vine-louse differs from the rest of its kind in living under the ground, (though in America it is said to form galls on the leaves. They have only been observed in Europe by Planchon, Signoret, and Laliman, and the insects were not entirely identical with those on the roots.)†

The full-grown insect sits motionless on the roots, having inserted its sucking-tubes, of which, according to Rösler, it uses two to withdraw the sap, and the other two to pour into the wound a liquid excrement, which, perhaps, is more injurious than the wound itself. The resulting semi-transparent swellings are the most certain indication of the pres-

*According to Balbiani's latest researches, there are at least four different forms of the insect capable of reproduction, not counting the eggs or the nymphs.

† Persons unacquainted with the *Phylloxera* are liable to mistake for it the grape-mite, (*Phytophus vitis.*) This insect belongs to the *Arachnidæ*, and eats the buds and young leaves in spring. Its presence is readily perceived by the bladdery galls on the upper surface of the leaves, in which a pinkish, spore-like dust will be found, consisting of these mites laying their eggs. They may be destroyed by gathering and burning the vine-leaves in the fall, so that no eggs shall remain over winter. They are about .032—.098 millimeter in diameter, the females larger than the males. They are peculiar in their organs of respiration, which open into the intestinal canal. It is not yet certain if the application of sulphur is as destructive to this pest as it is to the Oidium. Several other mites, as *Acarus* and *Haplophora*, (Riley,) live on the vine.

ence of the *Phylloxera*, and they speedily decay. The insect first attacks the surface-roots, and, when these are exhausted, migrates to those which are larger and deeper seated. They prefer the angles formed by branching roots, and lay their eggs in curved lines by swinging round their abdomens. Planchon saw one lay 30, Rösler 42, and Signoret 200, which hatched in from two to three days. Unlike the parent, the young *Phylloxera* is very active, and runs about till it finds a suitable spot on which to begin sap-sucking. It now rapidly changes its skin; how many times is uncertain. But the oak *Phylloxera*, its nearest relation, changes four times.

They begin to lay eggs when from eight to fifteen days old, different observers not agreeing as to the exact time. The yellow color of the living insect changes when dead to a light brown, as also the eggs, and when destroyed by carbon disulphide it becomes a dark gray, almost black. By the loss of sap, perhaps also by the effect of a poisonous excretion introduced into the wound made by the trunk of the *Phylloxera*, the vine is injured. If but few are present, or if it is endowed with strong powers of resistance, like the American vines, the presence of the enemy will hardly be noticed. But if they increase, as usual, by the second year the vine will show that it is diseased. The leaves turn yellow, the stock becomes spindling, the shoots wither, the berries shrivel, and, finally, the whole plant dies. Oftentimes the insects will be found to have abandoned the exhausted roots of the dead vine for the more juicy ones of surrounding vines, which have not yet shown decided symptoms of attack. When one locality is exhausted, the insect removes to another, partly by the cracks in the ground,* and partly by running over the surface, and also in the winged form. According to observations made at Klosterneuburg, it seems possible that this change may be brought about by want of sufficient food. When winged, the wind is an efficient agent for their distribution. Of course, the wingless form may be transported in cuttings, stakes, straw, &c., and even in the clothes of vine-dressers. Most energetic measures have been taken to prevent the spread of the insect from Klosterneuburg and vicinity. All the vines have been dug up and, with the roots, carefully burned, and the ground fully impregnated with carbon disulphide by means of holes bored three feet deep and six feet apart, in which fifty-five to one hundred grams of the disinfectant was placed. It was found, on examination, that roots lying six feet deep in loamy soil were infested with the insect. The penetrating character of the carbon disulphide is shown by the fact that vines six feet from the holes in which it was applied died immediately. April is the best time for operations, as the insect is then soft and tender; but from August to October the winged form must be guarded against. Experience shows that, once cleared of the pest, ground may be again planted with vines, which grow luxuriantly without danger until it is re-introduced from a foreign source.

Since the destruction of the vines entails great loss, efforts have been made to discover some other method of getting rid of the insect.

Of all the substances hitherto employed which do not injure the vines, phosphuretted hydrogen and ammonia, liberated in the soil, have been most successful. To use the first, a hole is bored in the ground and filled with lime, on which water impregnated with phosphorus is thrown, and immediately covered with earth, all openings near being also closed in the same way as soon as steam is seen to issue from them. Among other experiments, the effect of dynamite in loosening a refractory sub-

* The absence of such cracks in sandy ground is probably the reason why the insect is not found therein.

soil was tried, and proved, unexpectedly, successful. Dynamite cartridges exploded in holes four to six feet deep loosened the soil so that it would absorb twenty large pails of water where previously half of one would stand a long time. Numerous substances have acquired some reputation in France, of which sulpho-carbonate of potassium dissolved in water is, according to Dumas, the most successful. Of the dry salt, forty to fifty grams are required for a large vine, the solution to be poured around the stalk.

Of all the weapons yet used, water is the only one completely to be relied on. It is not likely the *Phylloxera* will become entirely extinct, but it is probable we shall find means to render it comparatively harmless, and by high cultivation give our vines sufficient vigor to withstand its attacks. In sandy soil, with heavy manuring, the *Phylloxera* is even now not to be dreaded.

With regard to fruit-trees, decisive experiments have been made at Klosterneuburg that prove they are not subject to its attacks.

Conformable to analogy with similar phenomena, we may hope that possibly the scourge may vanish some time as suddenly as it has arrived. As human intelligence has triumphed over the *Oidium*, the potato-disease, the silk-worm malady, &c., it is probable that science will one day conquer the *Phylloxera*.

PHYLLOXERA VASTATRIX IN FRANCE.—Dr. Henry Erni, United States consul at Basle, Switzerland, sends the following note to the Assistant Secretary of State, under date May 5, 1875:

SIR: Upon the high authority of Professor Dumas, of the French Academy, it must be conceded that an effective remedy has been discovered against the grape-root louse, (*Phylloxera.*) It is the salt: potassic sulpho-carbonate, (K. S. C. S^2,) which in a dry form is strown upo the soil, whence a rain-fall carries it down in solution, bringing it thus in contact with diseased grape-roots. Experiments by Messrs. Milne-Edwards, Duchartre, Blanchard, Pasteur, Thenard, and Boulay have been crowned with complete success.

INSECT INJURIES.—Our statistical correspondence shows a backward campaign on the part of the farmers' insect-enemies generally. The Colorado beetle, though making more formidable demonstrations in the East, has excited comparatively little remark in the West. The chinch-bug has probably been restrained by the cold backward season. The migratory grasshopper of the West is doing much damage in Kansas and Missouri, but has not yet shown a tendency to serious injuries in the States farther north. The cut-worms have attacked cotton and tobacco. The following is an epitome of the injuries done in different parts of the country by various species of insects:

Colorado potato-beetle, (*Doryphora decem-lineata.*)—This insect is extending its ravages through the Middle States and the more northern of the Atlantic coast States, while in the Mississippi basin the complaints are less numerous and the injuries less formidable. In New York, Delaware reports the appearance of the beetles; in Chatauqua they were swarming; in Allegany they appeared before the potatoes were planted. They were numerous in Gloucester, Camden, and Burlington, New Jersey; in Northumberland, Chester, Franklin, and Lancaster, Pennsylvania; in Caroline, Washington, Wicomico, Harford, Frederick, and Cecil, Maryland; Culpeper and King George, Virginia. The use of Paris green and other poisons was effective in some localities, but others were disposed to rely upon the more laborious method of hand-picking. Our correspondent in Frederick, Maryland, adopted a very ingenious and successful expedient. He reported that a little corn was thinly sown among his potatoes and the chickens turned into the patch.

While scratching up the corn they waked up the beetles and devoured them greedily. He states that his fowls showed no injurious influence from their new diet.

In West Virginia, Jefferson and Harrison report the presence of this pest. They were also more or less destructive in Shelby, Harrison, and Spencer, Kentucky. In Harrison their eggs were destroyed in great numbers by a long, reddish worm. The beetles were numerous and active in Fairfield and Perry, Ohio. In Orange, Indiana, they are resisted by shaking into pans; they are also reported in Clay. They had just appeared in Carroll, Illinois, and were plentiful in Marion, but less numerous than usual in Montgomery, Jasper, Tazewell, and Hancock. They are reported in Crawford, Lafayette and Milwaukee, Wisconsin. In Tama, Iowa, they were as numerous as ever.

Potato-bugs (*Cantharis*, *Epicauta* sp.) were very numerous and destructive in Orange, Indiana. They seemed to defy Paris green and other poisons. Our correspondent will find the remedy he asks for indicated on page 64 of the Annual Report of this Department for 1867.

Caterpillars (*Clisiocampa*) injured forest and fruit trees in Oxford and York, Maine. They appeared in countless numbers in Carroll, New Hampshire. They were also noted among late apples in Saint Francis, Arkansas, and Wood, Texas.

Grasshoppers or locusts.—The species designated as *Caloptenus femur-rubrum* is reported at isolated points east of the Mississippi, but not as being very injurious. They were noted in Carroll, New Hampshire; in Conecuh and Madison, Alabama; in Knox, Tennessee; in Grant, West Virginia; in Livingston, Kentucky, and in Cass and Dodge, Wisconsin.

The far more destructive species, *C. spretus*, has recommenced its depredations west of the line of the Missouri, and in some counties to the east of that river. It was reported that they were hatching in immense numbers in Blue Earth, Wright, Sibley, Renville, and Todd, Minnesota. In some cases they were burned in great numbers in piles of straw. In Missouri they were very destructive in the northwestern part of Vernon County; in Platte they swept all the grain and grass crops; they were also a terrible scourge in Lafayette, Bates, Henry, Clay, and the northwestern part of Daviess. In Kansas they had eaten all the stacked tame-grass hay and all the old meadows, 25 per cent. of the wheat, and most of the growing corn-plants; in Marshall they destroyed wheat, oats, and gardens; Leavenworth records the most terrible visitation yet known; the popular dismay is indescribable. Similar reports come from Miami, Anderson, Franklin, Jefferson, Lincoln, Jackson, Republic, Allen, Doniphan, Nemaha, Brown, Cherokee, Crawford, Atchison, Labette, Neosho, and Johnson. In some villages the streets are covered with these insects. Fruit-trees have in many cases failed to bear from the fact that they were last year deprived of all their foliage and young-wood growth by these pests. From some counties come bitter complaints of the falsehoods of newspaper writers and others, palliating or denying the real extent of the disasters. These false representations are made in the interest of speculative property-holders who fear a depreciation of their investments. In a few counties, such as Howard, Lyon, and Montgomery, the injuries have as yet been small, but all such places are yet liable to destructive visitation. The cotton-plant was especially relished by these insects. In Nebraska they had destroyed 20 per cent. of the small grain and were still at work. In Merrick and Otoe they were preparing for extensive destruction. In Colorado they were numerous and destructive in Park, El Paso, and Douglas.

Chinch-bugs (Micropus (Rhyparochromus) leucopterus.)—These insects have as yet made but feeble demonstrations in the Eastern States. A few were noted in Dinwiddie, Virginia. They are reported in De Soto, Mississippi, Ashley and Benton, Arkansas, Livingston, Kentucky, and Warren, Indiana. They were threatening the wheat in Schuyler and Pope, Illinois, and were more or less destructive in Jersey, Marion, Grundy, Hancock, Ford, Perry, Jasper, Crawford, Edwards, and Cumberland. Plentiful rains stayed their development and devastation in many places; in others it was noted that they were less numerous than formerly, but the cool, wet weather may account for that. In Wisconsin they were destructive, especially to small grain in Fond du Lac, Sauk, Dodge, Iowa, Jefferson, Milwaukee, Lafayette, and Crawford. In some cases the roots of winter-wheat were found covered with chinch-eggs. In Missouri they had begun a formidable demonstration in Vernon, Caldwell, Polk, Iron, Lafayette, Daviess, Montgomery, Calaway, Crawford, Hickory, and Henry. Kansas reports them in Butler, Lyon, and Labette, more destructive in some localities than the grasshoppers.

Army-worms (Leucania unipuncta) are reported in Knox, Tennessee, and in Logan, Kentucky, where they were specially destructive on wheat and grass. In Pike, Perry, and Jersey, Illinois, and in Perry and Boone, Missouri, they were more or less troublesome.

Cut-worms (Agrotis sp.) were plentiful and injurious in Gloucester, New Jersey. They are also noted in Jackson, Florida; in Richland, Louisiana; in Bandera and Bosque, Texas; in Boone, Sharp, Scott, Izard, Montgomery, Saint Francis, and Van Buren, Arkansas. In many cases they materially damaged the growing cotton. They were also numerous in Grainger and Grundy, Tennessee; in Marion and Grant, West Virginia; in Monroe, Ohio; in Clay, Indiana; in Iroquois and Pike, Illinois; in Boone and Taney, Missouri. In the last named they have taken to chewing tobacco, and promise to furnish an unwelcome and abundant home-consumption for that crop.

Miscellaneous.—A species of grub-worm *(Lachnosterna* sp.) is doubtfully mentioned by our correspondent in Gloucester, New Jersey. Joint-worms *(Isosoma (Eurytoma) hordei)* are reported in Orange, Virginia. The Hessian fly *(Cecidomyia destructor)* is noted in Grainger, Tennessee, and in Greene, Dallas, and Lawrence, Missouri; in the last named county the Fultz wheat has been found "fly-proof." The fly was especially noticeable in early-sown wheat. In Harrison, Kentucky, a long, reddish-brown "worm" (?) was observed destroying the eggs of the Colorado beetle. Our correspondents would especially oblige us by sending specimens of such new insects for examination. Wire-worms *(Elater* sp.) were troublesome in Clay, Indiana, in Pike, Illinois, and in Henry, Iowa. Coddling-moths *(Carpocapsa pomonella)* threatened the apple-crop in Weber, Utah. In Piatt, Illinois, a small dark-colored worm destroyed the foliage of the elm and forest trees. A small black bug was very injurious to several crops in Pike, Illinois. Rose-bugs *(Macrodactylus subspinosus)* injured grapes and small fruits in Labette, Kansas. Cotton-lice *(Aphis* sp.) were troublesome in Leon and Suwannee, Florida, in Holmes, Mississippi, and in Madison, Louisiana. In Stevens, Washington, crickets (?) destroyed much grain.

PLATE I.

CHEMICAL MEMORANDA.

By Wm. McMurtrie, Chemist.

In a previous monthly report I took occasion to publish the results of some preliminary experiments, made principally to determine whether arsenic, when applied to plants in the form of Paris-green for the destruction of the Colorado potato-beetle, could, when transmitted to the soil, be absorbed and assimilated during growth, and at the same time I gave the results of other experiments in the same direction. My own experiments having been of a somewhat unsatisfactory character, and those of others having furnished such extremely discordant results, I finally determined to follow out the investigation about to be described, to endeavor to settle this question, together with others which subsequently arose. These subsequent questions were suggested by the fears entertained by some of our correspondents that, when Paris-green was applied to crops year after year, sufficient quantity might accumulate in the soil to poison it sufficiently to destroy its fertility and render it incapable of producing vegetation.

My investigation was therefore made to determine—

1st. If applied to the soil, can arsenic or arsenious acid be absorbed and assimilated in the economy of plant growth?

2d. If absorbed and assimilated, can it be taken up in sufficient quantity to become prejudicial or injurious to the health of consumers?

3d. If not taken up by the plant during growth, does it by its presence in the soil exert a poisonous influence upon the plant itself?

4th. If it exerts a poisonous influence upon the plant, to what extent may it exist in the soil before it becomes injurious?

The experiments were conducted as follows:

Fifteen common flower-pots, of as nearly uniform size as possible, were selected, and each one filled with a measured quantity of good garden-soil. With the soil of each pot were then thoroughly intermixed quantities of Paris-green, ranging from 100 milligrams to 1 gram. Thus one pot contained 100 milligrams; that next to it contained 200 milligrams; the next 300; and this quantity was increased until it finally reached 1 gram. In the other pots the increase was made more rapid, and the other pots contained 2, 3, 4, and 5 grams, respectively. After the soil had thus been carefully prepared, a given number of peas, all of which were carefully selected, so as to secure as nearly as possible those of the same size and appearance, were planted in each pot. This experiment proved unsatisfactory, from the fact that on one night that portion of the green-house in which the pots had been placed became too cold, and a large number of the seeds failed to germinate on this account. I therefore considered it of some importance to duplicate the experiments, and, without disturbing these further than to remove them to a warmer portion of the green-house, prepared in a similar manner and with the same care another series of pots. At this time the question also arose, what would be the effect of arsenic in combination, as arsenite of potassa and arseniate of potassa? For the purpose of determining this, I prepared two other series of pots in the same manner as before, and placed them alongside the former. With these experiments my results were extremely satisfactory, and when those plants which had grown well had reached the period of bloom, the three series of pots finally prepared were each placed by themselves in a convenient position and photographed, and from the

photographs thus obtained the accompanying illustrations were made. In these experiments, for the sake of comparison, one pot of soil was prepared without addition of any poisonous compound. Now, it is quite evident from these plates that the arsenical compounds in the soil did produce an injurious effect, and in some instances, in fact in the majority of them, it was decidedly marked. In case of the Paris-green, as shown in Plate 1, it is not noticed until the quantity present in the soil reaches 500 milligrams, and that in the other pots the size of the plants decreases regularly as the quantity of arsenical compound present increases. The numbers on the pots in the different plates represent the quantities present in grams and tenths of grams.

In case of the arsenite of potassa, (Plate 2,) the effect seems to be more immediate. This may be due either to the greater solubility of the compound or to a possibly larger quantity of arsenious acid. The potash compound seemed nearly pure, being crystallized, and the purity of the copper compound was not estimated. Yet in this case the effect does not seem decidedly marked until the quantity present reached 300 milligrams.

To the influence of arseniate of potassa the plants seemed to be more sensitive still, for those in the pot containing but 100 milligrams seem to be affected. Yet even when 200 milligrams are present, the plants seem to thrive tolerably well.

What, then, are the quantities of these compounds which may be applied to the soil for the various purposes in practical agriculture before effecting any injurious results? The amount of soil in each of the pots employed in these experiments was 91.5 cubic inches. In case of the Paris-green, the limit is 500 milligrams for this quantity of soil, which is equivalent to 145.6 grams per cubic foot, or 906.4 pounds per acre, calculating for a depth of one foot. The limit for arsenite of potassa, being 300 milligrams per 91.5 cubic inches, is about 540 pounds per acre. Though the plants seem to be affected by even a small quantity of arseniate of potash in the soil, I am nevertheless inclined to the opinion that this compound may be applied at the rate of 150 pounds per acre without any great injury to the crop. For practical purposes, however, it is never necessary to apply in any case so large an amount.

These results are confirmed by the water-culture experiments of Professor Freytag * in his investigations upon the influence of the sulphurous and metallic fumes of the Freiberg Metallurgical Works upon the vegetation of the surrounding fields. He found that plants were killed when placed in solutions containing $\frac{1}{80}$ per cent. arsenious acid, $\frac{1}{50}$ per cent. sulphate of zinc, $\frac{1}{40}$ per cent. sulphate of copper, $\frac{1}{25}$ per cent. sulphate of cobalt, $\frac{1}{15}$ per cent. sulphate of nickel, and $\frac{1}{5}$ per cent. sulphate of iron.

Mons. E. Heckel † states that 25 milligrams of arsenious acid or the soluble arseniates in 90 grams of water prevents germination and destroys the embryos of seeds.

I cannot, however, agree with Professor Freytag in the statement that the arsenious acid and the oxides of zinc and lead cannot be injurious to vegetation on account of their property of forming insoluble compounds in the soil, since in some of my preliminary experiments presence of such insoluble compounds as the arseniates of barium, strontium, and magnesium was sufficient to prevent germination. Again, in reports upon the composition of certain mineral-waters of Germany, we

* Jahrbuch für Berg- und Hüttenwesen, 1873.
† Comptes rendus, t. LXXX, 1172.

PLATE II.

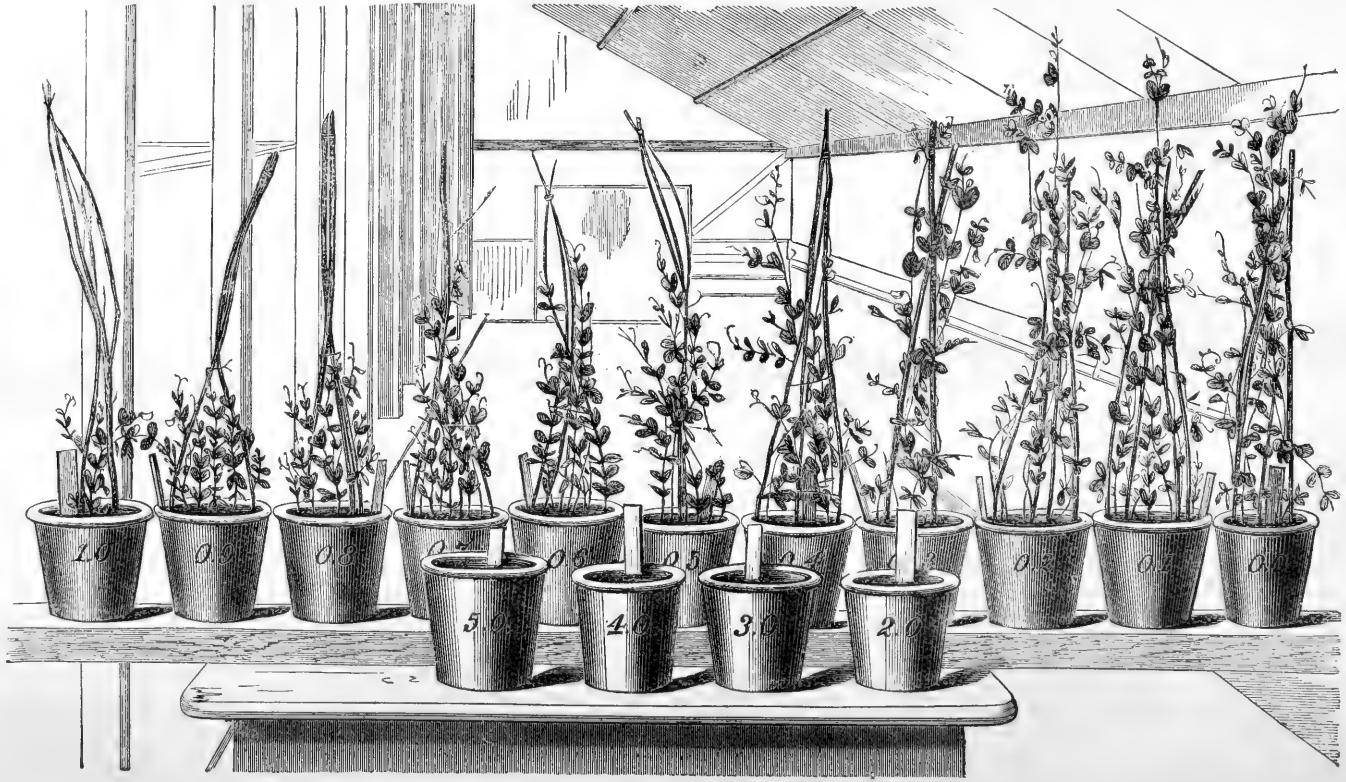
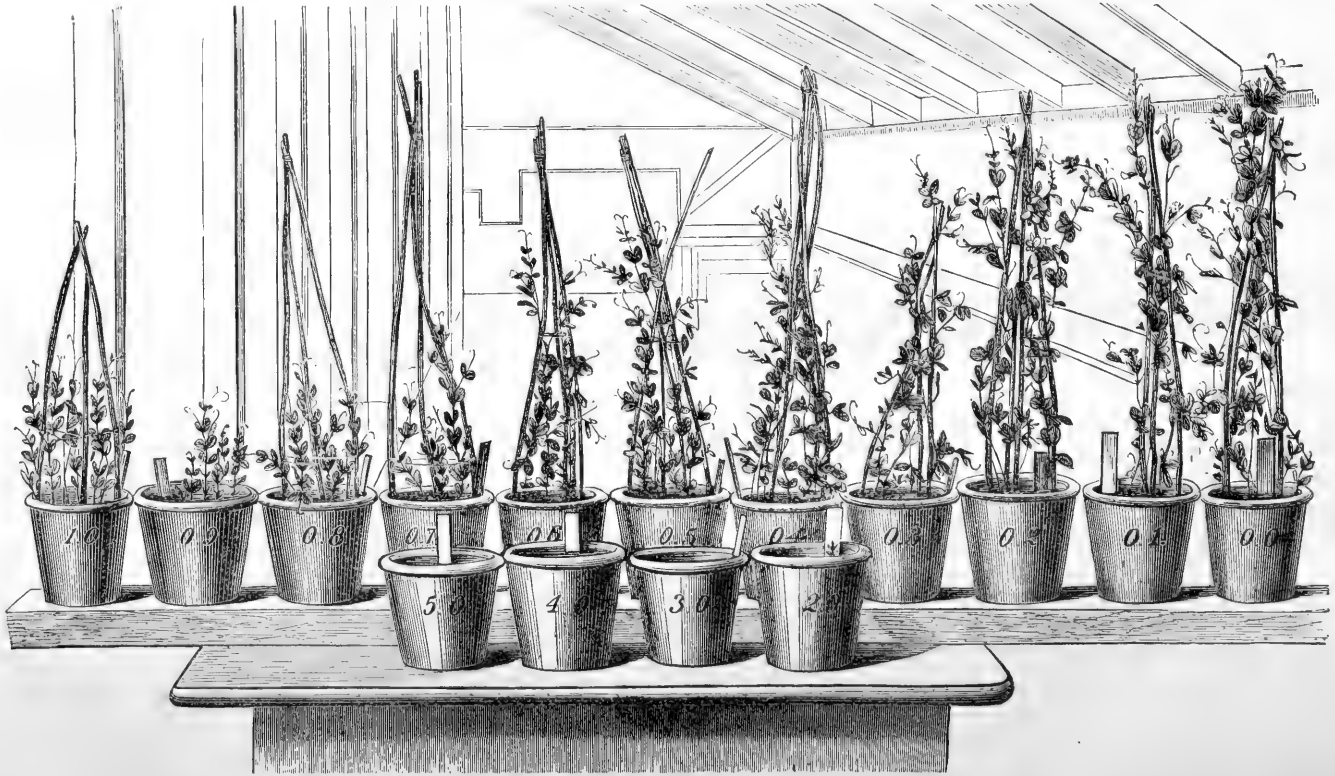


PLATE III.



notice statements of the presence of such insoluble compounds as arsenite of iron in solution. These facts argue against the possibility of accumulation of sufficient arsenic in the soil by regular applications of Paris-green in the quantities recommended for the destruction of the Colorado potato-beetle. When rotation of crops is observed and application of the poison cannot therefore take place upon the same plot more than once in three or four years, it is probable that each application, being acted upon by the natural solvents in the soil, will be removed by drainage before another is made. And yet, even when annual applications are made, so much time must elapse before the limit could be attained that no injury need be feared from this cause.

Now, can arsenic be absorbed and assimilated by the plant in the economy of growth? My investigations give a negative reply. All of the plants grown, from the largest to the smallest, were examined by careful application of Marsh's test; yet I failed in any case to detect the presence of arsenic.

Before making the test the organic matter of the plant was destroyed by boiling it in hydrochloric acid with addition of potassic chlorate, and the solution filtered.

I also carefully examined potatoes which had been subjected to applications of Paris green, and which were furnished by Mr. George W. Campbell, Delaware, Ohio, Mr. D. C. Richmond, Sandusky, Ohio, and Mr. J. S. Nixon, of Chambersburgh, Pa., and failed in any case to detect the presence of arsenic.

With these facts before us, and without considering what might be the result of a series of experiments continued through a number of years, we must conclude that plants have not the power to absorb and assimilate from the soil compounds of arsenic, and that though arsenical compounds exert an injurious influence upon vegetation, yet this is without effect until the quantity present reaches: for Paris green about 900 pounds per acre; for arsenite of potassa, about 400 pounds per acre; for arseniate of potassa, about 150 pounds per acre.

HASTENING GERMINATION.—M. Heckel has made some experiments in the germination of seeds, in order to notice the effect of different chemical compounds. He placed the seeds between sheets of blotting-pad, and treated them with the several compounds, as follows:

1. He sprinkled one-half grain of finely-pulverized camphor between the sheets.
2. Bromide of camphor one-half grain, in the same condition and a similar manner.
3. One-half grain bromine water, and an equal quantity of pulverized camphor.
4. Bromine water alone.
5. Bromide of potassium, finely pulverized.
6. Chlorine water.
7. Solution of iodine.

Under normal conditions, seven to eight days were required for germination. With the application of the different substances named, the time of germination was as follows: Bromide of camphor, 36 hours; camphor, 4 to 5 days; camphor and bromine water, first time, 30 hours; second time, 26 hours; third time, 36 hours; bromide of potassium, no effect; iodine, 5 days; bromine, 3 days; chlorine, 2 days.

Since the effect of bromide of camphor is so much more marked than that of either of its constituents acting singly, it is evident that in its action it suffers no decomposition. It should further be remembered

that it acts without being dissolved, and the author therefore considers that the influence is due to the volatilization of the compounds. He further experimented upon the influence of the alkaline borates and silicates in small quantities, and found that such slight application as 250 milligrams in 20 grams water retarded germination from one to three days, and that when the application was made somewhat stronger, 600 milligrams in 20 grams water, the phenomenon was suspended. He also found that arsenious acid and the soluble arseniates arrest germination, and destroy germination when applied in so small a quantity as 250 milligrams in 90 grams water.

FACTS FROM VARIOUS SOURCES.

STATISTICS OF CORN-GROWING.—The low rate of yield for all kinds of grain in the South, and the small amount of hay gathered in that region, have led to an impression, general as it is false, that the farms of the Southern Atlantic coast are not susceptible of high culture and large production of general farm-crops. The following communication has been received from a gentleman thoroughly acquainted with this section:

Indian corn is the great American cereal, and it should be the pride, as it is the interest, of the farmers of the nation to make the most of it by making all reasonable efforts to produce the very largest yield and finest quality of which the soil and climate are capable; it is for the honor as well as the profit of every producer to aim at obtaining the highest yield per acre that can be made, and not allow the general average to fall below the achievements of careful cultivators.

Yet a reference to the carefully-collected statistics of the Agricultural Department, for different years between 1865 and 1873, will show that the average yield is very low, being only about one-fourth that obtained by the best cultivators. This lesson forcibly illustrates the utility and value of the annual statistics collected and published by the Department.

The annual report on Indian corn for 1865 shows the average yield per acre to be, in Maryland, 23 bushels, value 68 cents per bushel; Virginia, 22 bushels, value 59 cents per bushel; Pennsylvania, 32 bushels, value 60 cents per bushel; Ohio, 37 bushels, value 42 cents per bushel; United States, 24 bushels, value 48 cents per bushel.

The entire crop of the United States was reported to be about 932¼ millions of bushels, worth about $466,000,000. The entire crop of Maryland was reported to be 10½ millions of bushels; and of Virginia, 19¼ millions of bushels, for that year.

And these reports show that the yield in those two States is below that of their nearest neighboring States, north and west, and even below that of the cold, rigorous States of Maine, New Hampshire, and Vermont, their average being 31 bushels the acre, while the highest average yield in any State east of the Pacific slope was in Kansas, being 39 bushels; the next New Jersey, 36 bushels.

Now, in connection with this showing, if we look at the large achievements of careful, thorough cultivators, it may thoughtfully be asked, is this meager average in Maryland and Virginia, and some other States, creditable or profitable to the operators? It is believed there are no natural conditions in these localities to hinder them from doing as well as the best.

The above report also shows that, notwithstanding the low yield, the aggregate value of the corn-crop in Maryland in 1873 was $7,106,680; and in Virginia, $11,372,250. And, in view of all the facts, it is safe and reasonable to say that this amount may easily be doubled, and without more than half that amount of increased cost for cultivation. I have known over 100 bushels of good corn to be raised from an acre two years in succession at one-fourth less cost per bushel for the grain than the cost where only 50 bushels per acre was obtained, or even 60.

There are numerous well-attested instances in which yields of from 70 to 170 bushels of good shelled corn have been obtained from one acre of land.

The Carroll County (Maryland) Agricultural Society, in 1873, gave the premium of $100 to Mr. J. Brown, of Baltimore County, for producing on one acre of ground 120¼ bushels of good, sound corn, and 9,880 pounds of good fodder. It was a timothy meadow, and was mowed two years, then plowed deep, subsoiled, and sown to wheat one year; then spread over lightly with stable-manure, which was plowed under; then 500 pounds of bone-dust spread broadcast, well harrowed and rolled; then marked off with furrows 3½ feet apart

then a compost of ashes, hog-manure, salt, and gypsum spread along in the furrows: then the corn was dropped in the furrow, kernels about six inches apart, and covered two inches deep; it was planted 10th of May, but from too much wet and rain it did not come up well; again he ran furrows in the same way between the first ones, putting one sack of guano in the furrows to hasten germination and growth, and planted in same manner as first time, which came up well about the 1st of June; harrowed several times, until the corn was too high; then plowed twice with shovel-plow; the deep plowing and subsoiling prevented evil effects of the drought. After careful measuring and weighing of the ground and corn by the proper persons the product was found to be as above.

In March, 1873, I was at Amherst Court-House, Va., and, in company with Hon. Mr. Whitehead, member of Congress for that district, and Mr. Mead, the postmaster of the place, visited one of the store-houses, where we were shown specimens in the ear of a large white dent corn which that season yielded 170 bushels of shelled corn on one acre of ground grown by Mr. Hudson, on the farm of W. P. Miles, known as the "Oakridge estate;" and the facts were attested by Mr. Fortune, a notary public of the county.

In looking over a bound volume of the old Farmers' Register, printed thirty-five years ago, by Edward Ruffin, at Petersburgh, Va., I find the following statement properly vouched for: "Mr. Meggison, of Albemarle County, Virginia, was reported by the county society to have raised 110 bushels of sound shelled corn on one measured acre of ground, being 'river-bottom' and thoroughly cultivated; a large, white sort of corn." The same paper says, "a yield of 60 to 80 bushels the acre was quite common;" it states also that 35 to 40 bushels of wheat to the acre was often obtained in those days.

In the annual report of the Department of Agriculture for 1868 there is an authenticated statement that at Worcester, Mass., Joseph Goodrich and Luther Page each raised 111 bushels of shelled corn on an acre of land; certainly not a bad achievement for a region where they have snow one-third or more of the year. The same report gives instances in Ohio where 99 and 101 bushels to the acre were obtained.

The Rockbridge County (Va.) Society, at its meeting in 1871, gives the following official statement of the results of competitors for the premium on the largest yield of corn:

"Farm of J. D. H. Ross, clay loam, upland; an old timothy and white clover sod, plowed in December with three horses, harrowed four times with three horses; hills marked 3 feet by 3½ feet apart, and manured with home-made compost, a handful to three or four hills; plowed three times in the course of the season. One acre yielded 76$\frac{9}{10}$ bushels of shelled corn, 56 pounds to the bushel; and five acres gave 253¾ bushels. Farm of A. L. Nelson, loam, with clay subsoil; in grass for four years; plowed in February to a depth of 12 or 14 inches, and harrowed well just before planting, April 26 and 27. The hills received plaster and ashes at the rate of two-thirds of a bushel of plaster and one and one-third bushels of ashes per acre. One acre yielded, by measure, 91⅛ bushels; by weight, 86 bushels, 37 pounds each; five acres yielded 317 bushels by weight. Farm of G. W. Pettigrew, on a sandy loam, having a northeastern exposure, and overlaid by one to three inches of soil deposited by the flood of 1870; plowed in April to the depth of 10 inches, planted April 12. One acre yielded 89¼ bushels by measure, or 97 bushels 47 pounds by weight, and five acres gave 400 bushels and 40 pounds by weight."

A meeting of the South Carolina Agricultural and Mechanical Society in 1869 reports the experiments of John W. Parker, which resulted in producing from 147 to 200⅜ bushels of corn per acre, and gives the mode of doing it as follows:

"Selection was made of a quagmire, grown over with rushes, willows, and sour grass, abounding with snakes and malaria, and traversed by a winding, sluggish stream. Thorough drainage was attained by the construction of a canal and underdrains, and during the summer the land was cleared, leveled, and broken up with a two-horse plow. In November a heavy coat of co[illegible]ouse manure was applied and plowed under, and the process was repeated in January and again in March, with subsoiling. In April, the weeds having obtained a luxuriant growth, were limed and turned under. In May another coat of manure was plowed under, and the ground was harrowed perfectly level and laid off in rows 3 feet apart. In the furrows were applied Peruvian guano, salt, and plaster at the rate of 200 pounds to the acre. The corn-seed having been soaked in a solution of niter and rolled in plaster, was dropped, 10 inches apart, in the rows, and covered with rakes, after which the land was rolled. The corn was up in five days from planting, and as soon as it was sufficiently large a long, narrow plow was run around it, followed by the hoe, the crop being kept clean by shallow, level culture until it began to shoot and tassel. The field was then irrigated by conveying from a reservoir a gentle flow of water through every alternate row. The yield on two acres was 147 bushels per acre. The following year the experiment was repeated in like manner, except that the rows were laid off 2½ feet apart, one acre yielding 200⅜ bushels, as attested by a viewing committee. He attributes much to irrigation in these instances of extraordinary products, and concludes from these and former experiments that success in corn-growing depends greatly on thorough preparation of the soil during the fall and winter by deep plowing, with underdraining of moist lands; this preparation to be followed by judicious manuring. While the early working of the field should be deep, the

later culture should be shallow, and the roots of the corn should not be disturbed after it begins to tassel."

If we can stimulate farmers generally to put forth the requisite effort to largely increase the average yield of corn, a benefit will be secured to themselves and the nation at large, and where many do obtain such creditably large crops, many more can do the same by reasonable care and work. And it may be safely said that, next to deep plowing and subsoiling, no one thing enters more efficiently and largely into the elements of success in corn-growing than the liberal application of alkalies, such as wood-ashes, lime, salt, and the like, in connection with plentiful supplies of stable and hog manures.

Care in the selection of seed is of prime importance, and this should be done, before the crop is harvested, by going through the field and selecting the largest, earliest ears from such stalks as have two or more ears on them, for such prolific seed is quite sure to repeat itself in producing its like. In obtaining over 100 bushels per acre myself, I pursued this course, and no stalk had less than two ears.

D. S. CURTISS.

CALIFORNIA PROSPECTS.—Col. W. W. Hollister, of California, one of the foremost farmers of his country and time, writes as follows, under date of Santa Barbara, May 24, 1875:

As to California, generally, there will be no great trouble from drought. The rains were copious enough, but did not come opportunely. Unusual cold weather prevailed over the State, excepting here at Santa Barbara, where there was not enough frost to kill my potatoes. The crops will not be a failure by any means, though in places short and in places none at all. The greatest hardship will be in grazing. Men will have to resort to expedients to get stock through. Some will go to the mountains, some will get grazing from the grain-fields and straw from the thrashing-machine; all will be utilized, and I guess there will not be serious loss. Some herds of sheep have already gone to Arizona, and more will follow. I wish there was only a chance for our boys to go to New Mexico and be sure of protection. * * * Lompoc [one of the new settlements] is getting on well; there will be some fine crops, mostly of late kinds—beans, potatoes, and corn. The grass, as everybody knew it would be, is fine. While other flock-masters will find some hardships, our fine old Lompoc and San Julian ranchos are glorious in abundant pasture. We will carry all of our stock [about 50,000 head of sheep] as easy as usual.

My crops here are better than I have ever had since I came to the place. I think I will get four or five thousand centals of barley and a good fair crop of wheat, all of which is volunteer. My corn and potatoes look fine. I have cured and housed three hundred tons of hay, and the almonds are bearing as much as I want to see on trees at their age. [Almonds number 25,000 trees.] My little lemon-trees are some of them full of fruit. That is quick work—two and three years from the bud—better than I expected. When you come to see me I will make you lemonade from the trees, and talk you to sleep under the shadow of their foliage. * * *

There ought to be a grand effort to help Scott with the Atlantic and Pacific Railroad in the next Congress. * * * We are suffering more from high-priced labor than from drought or any other cause. The cost of production must be lessened, so that living will be less expensive. The reduction of price for labor must first be made on the farm; that is the beginning place; then all other labor can come down in proportion. * * No farm can survive $25 per month here, or $15 in the East. If the farm goes, here or there, all goes. Many immigrants come here and, instead of going to work at what business justifies, demand $30 and $40 per month. If they don't get that, they scold the country and go back—if they can. We have got to go back to old prices and all men go to work. Work! work! work! there is no other way to live.

In a previous letter Colonel Hollister thus sums up his ideas on the labor question:

Labor, intelligently applied, is sure to add to the wealth of the State. The great thing to be feared is idleness. If people do not work they must be poor. If they consent to be poor they become demoralized. Poverty and crime go together. If you want a country moral make it prosperous. Stimulate enterprise by just laws, and there is no such thing as failure. * * It is not railroads that are doing the harm; it is general idleness—*laziness*—a desire to live by our wits and not by work. Labor is the problem for our solution now. God send that we solve it soon and all go to work with a will!

THE ECONOMY OF FEEDING MEAL TO DAIRY-COWS.—Mr. Linus W. Miller, of Stockton, N.Y., has for some years past been experimenting with corn-meal as feed for his dairy-cows, and his success has been so satisfactory that he gave the result of his experiments in an address delivered before the American Dairymen's Association on the 14th day of

March last. In the opening portion of his address, Mr. M. states that sixteen years ago he happened to mention to an acquaintance that he was short of hay for wintering his stock, and was advised to use scalded corn-meal as a substitute, at the rate of three pints per day, keeping in stall during winter and watering by hand. Profiting by this hint, he dried off his herd of twenty cows, and placed them upon an exclusive meal-diet, feeding an average of three pints, dry, morning and evening; giving the large cows a little more, and the small ones a little less. He kept them in warm, clean, and properly-ventilated stables, only turning them out for a half hour each day for water. The first three or four days they exhibited symptoms of uneasiness on this new diet, but soon regained their usual quiet and content. As this experiment was commenced as a necessity, and with no probability of its being continued through several years, Mr. M. did not weigh his cows either at the commencement or end of meal-feeding. In the spring, when the cows began to drop their calves, he fed them all the hay they would eat in the morning, with two quarts of meal at night, but in every instance they showed a decided preference for meal. When upon exclusive meal-diet that season—a period of nine weeks—rumination ceased when they had no longer any food to remasticate. During this time the cows drank a remarkably small quantity of water, varying from one to eight or ten quarts per day. Although accustomed to eating a daily ration of salt during the summer, the herd showed but little inclination to eat it upon meal; but when fed upon hay they at once resumed the consumption of the usual amount of salt and water. Mr. M. says that he made more than the usual quantity of butter that season, and when turned out to grass the cows did better than they had ever done before. After this brief experience, whenever short of hay, Mr. M. resorted to meal, feeding, in as many winters, five, seven, and eight weeks, and always with the most satisfactory results. The cows thus fed invariably did better, when turned out to grass, than those fed on hay, the quality of the milk being better, and the tendency to lay on flesh being greater.

Mr. Miller has not only experimented with meal, but has also experimented with meal made from different varieties of corn. Meal made from white western Indian corn is not so nutritious as that of the yellow native corn of Western New York. It contains only a fraction of 1 per cent. of oil, while yellow corn contains nearly 4 per cent. He states that there was a marked difference in its effects upon his cattle. Feeding of meal from the white corn soon caused the hair to look and feel stiff and harsh; then the skin became dry, with the appearance of scurvy; finally, some of the herd broke out with blotches along the back and sides. While a mixture of oil-cake will prevent this difficulty, Mr. M. prefers to use yellow meal, and avoid the necessity and expense of using oil-cake with meal made from white corn.

As to the result of his experiments during the winter of 1873–'74, Mr. Miller says:

> At the close of the season, having fed no bran or extra feed since the 20th of August, I find, by factory returns, that my cows averaged a fraction less than 20 pounds per diem for the season of five months—May 19 to October 19—being 1 pound and 3 ounces each per diem more than the average of 531 cows whose milk was sent to the same factory, and an average of 4¼ pounds each per diem more than my cows gave for the corresponding season the previous year, when wintered on hay. I had also two cases of abortion in my herd, the result of accidents—having had but one the previous year. The conditions were more than ordinarily unfavorable; but the results were, to say the least, a demonstration of the adaptation of an exclusive meal diet to meet the wants of my animals under the conditions enumerated. Another result of meal-feeding I find to be a tendency to lay on flesh more readily than when wintered in the usual manner. I am also satisfied that my herd hold their age better, and that their teeth last longer; the reasons for which are apparent. What the effect

would be if wintered continuously for consecutive years on condensed food I am not able to say, never having tested it. But looking to my own profit, as a dairyman, I propose hereafter to feed my cows when dry upon an exclusive meal diet, and also to feed more freely on this article during the spring months. My practice has been to make the change from hay to meal and *vice versa* suddenly, without gradation, and thus far it has been with safety; yet prudence might dictate a gradual change when returning to hay; and also care in supplying the animal with the necessary quantity of water for moistening the coarse food. If cows could be watered in their stalls, whether fed on meal or hay, in cold weather, and their stalls kept warm and clean, taking care to curry daily, there would be a great saving of food. I would not wish to be understood as laying down the rule that a daily ration of three quarts of meal is sufficient in all cases. Large cattle would require more and small ones less. He who feeds meal exclusively should watch his animals closely, and variations should be made according to circumstances. In very cold weather the animal requires more food, no matter what its nature may be, than in warm, pleasant days. The practice of turning out animals in the cold and storms to become chilly, is neither humane nor economical. Regularity in the hour of feeding is also of great importance, whatever the food. It is a law of animal life that the appetite conforms to habit, and that the digestion of food will be more perfect if taken at stated intervals. Where food of any kind is kept constantly within reach of an animal, it is tempted to eat more than nature requires, and much more than can be properly digested. In feeding meal, whether alone or diluted with coarser food, it is absolutely imperative that it should be ground as fine as for family use; and if from white corn, on an exclusive meal diet, a small quantity of oil-meal or cotton-seed meal should be mixed with it.

DEPARTMENT *vs.* SEEDSMEN.—Notwithstanding the falsehoods of unprincipled seedsmen as to Department seeds, we must insist that the closing remark of our correspondent does not properly apply to the majority of American seedsmen:

They have all come up most satisfactorily. Having planted them under similar circumstances and same soil as those received from seedsmen, and so far as I can judge are infinitely truer to name than those bought by me of ——— ———, of ———; or of ——— ———, or of ——— ———; the latter, scarcely ten plants from a packet of cabbage (large flat Dutch) germinating, though all were planted at the same time, condition, and alongside of each other, both in hot-bed and on open ground, the soil being well enriched with fine old manure. I regret to say that so little dependence can be placed in our seedsmen generally.

GERMAN WINE PRODUCERS' ASSOCIATION.—The following is a letter from the president of the German Wine Producers' Association, soliciting this Department to send delegates to the convention of this association, to be held in the autumn of the present year at Colmar, Germany:

CARLSRUHE, *April* 1, 1875.

UNITED STATES DEPARTMENT OF AGRICULTURE,
Washington, D. C.:

We take pleasure in inviting the honorable Department of Agriculture to send delegates from the United States to the congress of German Wine Producers, to be held in the latter part of September or the beginning of October of this year, inasmuch as subjects of international rather than strictly local character will here be discussed.

The Oenological congresses at Munich, in 1872, (Annals of Oenology, vol. III, pp. 263 and 376,) at Vienna, in 1873, (Annals Oen. vol. V, p. 1,) and at Trier, in 1874, (Annals Oen., vol. V, p. 135,) have proven that the joint labors of the representatives of different nations thus assembled were likewise of greatest importance in our department of science.

We hope the more confidently to see your country represented, since the second congress of the International Ampelographical Commission will be in session, either immediately before or after our convention, in connection with which we shall institute an exhibition of all things appertaining to the culture of wine.

Accompanying this you will please find a list of questions, which, with others that may be hereafter offered, will be submitted for discussion in our convention; the programme of the exhibition will soon be sent you. As we desire to present to visitors a complete exposition of the scientifically practical attainments in our department, we would gladly receive any suggestions, information, or contribution of implements used in wine-culture that you may deem proper to make.

DR. A. BLANKENHORN,
First President G. W. P. Association.

The object of these associations is certainly an important one, and it is to be regretted that this Department has not the means at its disposal to send representatives from this country. No doubt many interesting facts and much valuable information will be brought to light.

Among the questions to be answered and discussed, a few of the more important are as follows:

What results are arrived at in the use of fertilizers in vineyards?

What is the relation between the condition of the soil and the quality of the wines?

What cause do the latest observations assign to the favorable results of "ringing" vines?

When grape-cuttings have grown vigorously during the first year, ought they to be shortened in the following spring or not?

What are the results of American seed-culture?

Is it safe to conclude that the plant raised from a hardy grape-variety will also prove hardy?

Can a hardier and more vigorous variety be obtained by grafting European cuttings upon American vines?

Does smoking the vines prove effectual against injuries caused by frost?

What are the latest observations regarding *phylloxera vastatrix*?

Might they not be successfully opposed by their natural enemies?

A SUPPLY OF WATER.—Mr. D. S. Curtiss, who has had experience in utilizing the rain-water supply in Wisconsin, thus writes:

In your monthly report for January, 1875, I find the following:

"FAILURE OF WATER.—*Columbia, Wis.:* Water in the earth during the last five or six years has been constantly, steadily settling, so that most of our wells have had to be deepened in order to have water. What are we coming to? A barren waste? Or can we do something to moisten our climate?"

Now, with your permission I will show that the people of Columbia County, and all others in the same belt of country, may have a reliable supply of the very best water, and at very low cost.

The results of rain-gauges, kept at different points throughout the Middle and middle Western States, show that the average depth of rain-fall annually is 48 to 54 inches, over four feet, on the entire surface of that range of country; an immense quantity of water, which would be totally destructive did it not speedily and regularly pass off in deep streams, and by absorption and evaporation.

About 7½ gallons of water make one cubic foot; and about 8½ cubic feet are contained in one hogshead; one cubic foot contains something over four pailfuls of water.

A hole in the ground 8 feet square and the same depth will hold 62 hogsheads of water. A round cistern 4 feet in diameter and 6 feet deep will hold over 46 hogsheads of water; and one 12 feet deep will hold 93 hogsheads of water.

A more definite idea of the quantity of water that falls, annually, will be formed by considering that the quantity which falls on the roof of a building 30 by 40 feet in size, is about 400 hogsheads, and nearly 25,000 pailfuls.

Many places in the State of Wisconsin the wells cost from $50 to $150, the greater price in sections on the prairies where they have to dig through lime rock with drills. But good cisterns can be made for from $20 to $50; while less than one-fourth the labor and trouble will be required to raise the water when wanted, than is required by those deep-drilled wells.

The cistern at the barn, to water the stock, need not be very deep, but broader, to afford the needed supply of water for the animals.

But for purposes of the house and family the cistern should be deeper, in order to retain the water at a colder temperature to be palatable for drinking; 12 or 15 feet depth will keep the rain sufficiently cool. A good way, and perhaps the best, is to make the house cistern about 6 feet in diameter, and 12 to 15 feet deep; then put in a partition-wall across the middle, of soft, porous brick; and allow the water from the eaves to run into one-half, and with the pump draw out from the other half, a filtering crib or space being made in the partition-wall near the bottom through which the water can pass from the portion into which it first falls to the other.

Let this course be pursued and there will be no water famine, as there has been no year in the past two decades when there was not over three feet depth of rain and snow fall in all of the region above named.

THE INTERNATIONAL EXHIBITION AT COLOGNE.—In reference to the international horticultural exhibition to be held at Cologne, in Germany, in August next, the general programme of which was published in the Monthly Report of this Department for April, the Department has received a communication from Baron Von Oppenheim, chairman of the

general committee, which states that the Hamburg-American Steamship Company has definitely granted a reduction of 50 per cent. on the ordinary rates of freight for goods going to, as well as coming from, the exhibition. Such goods are to be addressed to Messrs. Ollendorf & Co., Hamburg, who have undertaken to forward them to Cologne by the Minden Railway Company, which will also make a reduction of 50 per cent. on the tariff of freight. The general committee express the hope that American machinists will be induced to participate in the exhibition on a large scale with their unrivaled productions.

CHANGES IN THE ENGLISH AGRICULTURAL POPULATION.—The number of persons in England and Wales engaged in agriculture, according to the census of 1871, was 1,634,192, against 1,833,295 in 1861, and 1,928,796 in 1851. The later decade shows a decrease of 10.86 per cent., while in the previous one the number declined but 5.46 per cent. During the last decade the towns and cities enlarged their jurisdiction, absorbing 299,476 acres previously in farms; yet the cultivated surface increased from 24,905,758 acres, in 1861, to 26,322,477, an increment of 1,417,719, or 5.67 per cent. The number of agricultural landed-proprietors fell from 30,766, in 1861, to 22,964 in 1871, showing a decrease of 7,802, of whom 6,862 were females. This fact is accounted for by statistical writers on the ground that landed property yields a much smaller rate of interest than the multitude of limited-liability, companies that have lately grown up in England. Hence, small landed proprietors, especially women, who have not the capital or skill to render the soil productive, have shown a disposition to part with their freeholds.

The class styling themselves farmers or graziers have remained stationary during twenty years—249,431 in 1851, 249,735 in 1861, and 249,907 in 1871—but the numbers of farmers' or graziers' wives shows a remarkable increase, being 164,618 in 1851, 163,765 in 1861, and 187,029 in 1871. That a larger number of this class of tenant-farmers find it prudent to engage in matrimony, argues a general improvement of condition. That the marriages of this class are neither imprudent nor premature, is argued from the fact that only 5,373 of these farmers' wives are under twenty-five years of age. The number of farmers' female relatives residing on the farm, including children, is stated at 92,187 in 1871, against 83,830 in 1861, and 105,147 in 1851. On the other hand, the female indoor farm-servants have fallen off from 99,156 in 1851, to 46,561 in 1861, and 24,599 in 1871. The rapid reduction of this class of female laborers shows that the proportion of farm-work performed indoors is annually decreasing. This fact is further evident from the marked decline in the number of indoor male laborers, which was 134,157 in 1871, against 158,401 in 1861, and 189,116 in 1851. But this is not all. The numbers of agricultural outdoor laborers, both male and female, have also declined. In 1851 the aggregate of this class was 952,997, of whom 908,678 were males and 44,319 were females; in 1861 the whole number was 958,265, 914,301 being males and 43,964 females. In 1871 the total was 798,087—764,574 males and 33,513 females. The rapid introduction of machinery, during the last decade, will account for this reduction in the amount of hand-labor on farms.

Another class of outdoor laborers is distinguishad from the foregoing. The shepherds numbered 12,517 in 1851, 25,559 in 1861, and 23,335 in 1871. Female shepherds appear for the first time in the last census, numbering 12. The class of farm-bailiffs, always males, rose from 10,561 in 1851, to 15,698 in 1861, and 16,476 in 1871. The land-agents or surveyors numbered 3,064 in 1851, 4,702 in 1861, and 4,810 in 1871; of the latter number 3 were females. Agricultural students, from 104 in

1851 to 490 in 1861, and 760 in 1871. Workers and proprietors of agricultural implements numbered 55 in 1851, 1,441 in 1861, and 2,160 (including 8 females) in 1871. The increase in this class marks not only the greater use of machinery, but also the investment of independent capital in an auxiliary branch of agricultural enterprise. In the land-drainage service there were only 11 returned in the census of 1851, against 1,761 in 1861, and 1,255 in 1871.

The census-commissioners notice "a noiseless but rapid increase in the number and proportion of women engaged in specific productive work." This increase is outside of the increased number of wives of the industrious classes. About 10 per cent. of the tenant-farmers are women, who are found in largest numbers in dairy and grazing counties, such as Derbyshire and Cheshire, where they are about one in seven.

The increase in the number of farm-bailiffs, land-agents and surveyors, and workers or proprietors of agricultural machinery, taken in connection with the decline of hand-laborers, shows an increase in the labor of direction and in skilled labor. Thus mind is relieving muscle of its heavier tasks, and elevating practical agriculture from the mechanical, abject thing it has been in the past to a dignified and intellectual calling.

Conscription of horses in France.—The French government is now enforcing in all the departments the stringent law of August 1, 1874, in regard to the conscription of horses. All owners of horses and mules over six years of age are required to bring them before an itinerant board of examination on the first day of its session within their commune. Penalties for neglect of this requirement range from 50 to 1,000 francs. Those who knowingly make false declarations are fined from 200 to 2,000 francs. There is noticeable a general promptness in meeting this requirement on the part of horse-proprietors in France.

Phosphates in France.—The Academy of Sciences has awarded to M. de Molon the "Morogues" prize for his labors in regard to phosphates. After a summary of the rôle of phosphates in vegetation, and their influence upon the fertility of arable land, the learned statistician estimates at from 150,000 tons to 200,000 tons the weight of powdered mineral phosphates annually applied to the French farming-lands. The average price on delivery is 50 francs, or $10 per ton. It is only since 1848 that efforts had been made in England to substitute mineral phosphates for bone as a fertilizer. M. de Molon has for many years been persistently urging the same agricultural improvement in France. In a paper read before the Academy in 1856, he pointed out the leading deposits, regularly stratified, abundant, and capable of easy working, in the departments of Ardennes, Meuse, Marne, Upper Marne, and Yonne. These deposits have since become the grand centers of French exploitation. These operations are now to be extended to other fields. Among the labors of M. de Molon was a map of the country, showing the location of the beds of mineral phosphates, the mills for pulverizing the material, together with the deposits of other valuable minerals. M. de Molon has also presented at each of the great expositions within twenty years collections of maps and specimens showing the location and character of these fossil phosphates. He has also been indefatigable in his efforts to induce French agriculturists to adopt this material as their chief reliance in fertilization. The great public benefit resulting from his labors was gracefully recognized by the Academy in awarding the prize founded by M. Morogues.

FOREST PRESERVATION IN EUROPE.—Responses to a circular from the foreign office to British diplomatic officials in various countries of Europe have been published recently, embracing an immense mass of information, showing the effect of the denudation of forest lands upon the climate and rain-deposit of the continent. The inundations which of late years have had such destructive sweep in Switzerland have roused both people and government to the necessity of saving the timber upon their mountain-slopes. A commission of experts, appointed by the federal government in 1858, showed up in a trenchant report the reckless prodigality with which the forests were destroyed. This awakened public attention to a growing evil, and efforts have been made, both by legal enactment and otherwise, to restrict the cutting of timber as well as to re-afforest the denuded areas. Austro-Hungary has about 19,000,000 acres capable of producing valuable timber, but it is gradually decreasing. About 31 per cent. of the country has remained under tree-culture, and in some provinces 50 per cent. But in other portions the destruction of forests has been so complete, that it is doubtful whether the land has not lost its tree-bearing qualities. The soil is generally unfit for the purposes of agriculture, and hence the destruction of the trees has condemned it to utter sterility, unless they can again be made to grow. The diminution of forest areas has already produced serious effects upon the climate, inducing long and destructive droughts, and exposing the lowlands to the blasts of the Carpathians. The towns and cities are made uncomfortable, if not intolerable, during large portions of the year, while pulmonary symptoms have alarmingly increased. The government, and many enlightened citizens, are making every effort to avert the further destruction of timber, and to encourage its replacement.

In Prussia, especially in the eastern provinces, all forest land is more or less under government control, and greater care of forest lands is exercised than perhaps in any other country. Strict precautions are taken to secure an annual replant fully equal to the area felled. Most of the large forests are mapped out, according to size, quality, and age of the trees. Sweden has 30,000,000 acres, or 42 per cent. of her area, in forest trees, mostly conifers. Of this surface, 5,000,000 acres are under governmental supervision, and the remainder in the hands of individuals or corporations, either by freehold or by lease from the crown. In this country, as also in Norway, the indiscriminate felling of timber has had an unfavorable effect upon the climate. The government finds great difficulty in treating the case by legislation, but its efforts in this direction have been warmly supported by intelligent and public-spirited individuals and corporations. Planting-schools and nurseries have been established, and many denuded districts have been re-afforested. The steady decline in the exports of timber show the necessity of such efforts, by revealing the extent of the evil they are attempting to relieve.

BRITISH TARIFF ON FRENCH WINES.—In reply to a request of the French government, the British Board of Trade sent special commissioners to the different wine-producing regions of France, in order to determine, by actual experiment, the alcoholic strength of each kind of wine, so as to discriminate in favor of the milder brands in the imposition of import duties. Of fifty-five different wines examined in 1862, eight contained of alcohol less than 10°.34 centesimals; forty-one, over 10.34, and less than 10°.94; six contained over 14°.94 and less than 22°.99. Wine-producers in Portugal and Spain, jealous of French producers, were pressing the British government to reconstruct its tariff-schedule so as to

make 12° centesimal the line of demarkation between weak and strong wines, instead of 14°, the standard now recognized. This would bring a larger number of the French brands within the denomination of strong-wines. The former are charged with a duty of 27.51 francs per hectoliter; the latter, 68.76 francs. The proposed change would then bring a larger number within the range of high-tariff charges, and render their competition with the Peninsular wines difficult, if not impossible.

HORTICULTURAL PRIZES.—The Massachusetts Horticultural Society offers a prize of $25 for the best essay upon the culture and varieties of roses, to be read at the rose exhibition, June 17. Also similar prizes on grape-culture in gardens, &c., to be read October 9; on the culture of the cauliflower, &c., to be read November 6; on the principles of landscape gardening, &c., November 27. The essay on rose-culture must be submitted by the first Saturday in June; the others a month before the time of reading; essays unsigned, but accompanied by the name of the writer, must be sent to the committee on publication, Horticultural Hall, Boston. General competition invited.

WINE PRODUCTION AND CONSUMPTION IN FRANCE.—The Moniteur Agricole, from a study of official statistics, estimates the average annual yield of wine, in France, at 55,000,000 hectoliters, about equal to 1,453,000,000 gallons, wine measure. Of this amount, nearly 80,000,000 gallons are exported. The import from foreign countries amounts to about two-thirds of the export, making the amount of wine available for consumption in the country about 1,427,000,000 gallons. The average annual consumption of wine as a beverage was estimated at one hectoliter, or nearly 26½ gallons per capita, in 1860, when the Anglo-French treaty of commerce was signed. It is supposed to have increased 10 per cent. since that time, and now amounts to over 29 gallons per capita, making an aggregate total consumption of nearly 86,000,000 gallons. Leakage is estimated at 80,000,000 gallons, or about equal to the amount exported. About 265,000,000 of gallons are devoted to the distillation of brandy, and a considerable quantity used for miscellaneous purposes in the arts. Production and consumption are seen to balance each other with remarkable regularity upon a comparison of periods of twenty or thirty years, as these periods are generally sufficient to embrace the extreme vicissitudes of production, and to furnish a closely approximate annual medium. The outlook for the future seems to indicate no marked differences from the past.

FRENCH AGRICULTURE IN 1875.—A leading French agricultural writer demands greater progress during the coming year in the agricultural production of France, in order to secure an increased population and an enlargement of the stock of effective labor, of home consumption, and of foreign commerce; in fine, an increase of power all around. Leaving out the fruit and wine cultures of the center and south of France for future consideration, he directs special attention to the production of cereals and of foreign and industrial plants, occupying about 75,000,000 acres of the 125,000,000 within the French territorial dominion.

In the north are found the model agricultural regions of France. Here lands worth from 5,000 to 6,000 francs per hectare ($400 to $480 per acre) yield from 25 to 30 hectoliters of wheat per hectare, (28 to 34½ bushels per acre.) These lands are never fallowed, but subjected to a continuous rotation. The sugar-beet is the pivotal point in this system of culture, and some apprehension is expressed in regard to its excessive production. The increase of the sugar product of Germany and other countries is preoccupying foreign markets, and narrowing the scope of profitable expor-

tation by French producers. Its economic value to the industrial interest of France is incalculable, furnishing, as it does, not only the basis of a large manufacturing interest, but also a wide scope of employment for agricultural labor, and a large amount of nutriment for farm-animals. Those departments in which the sugar-beet has not yet become an essential point in the systems of rotation are expected to introduce it cautiously, with due regard to the economic reasons which have rendered it so effective in the north.

The model intensive culture of the north may be impracticable in other regions, at least under existing circumstances. Land worth only $80 per acre will not remunerate the investment of working-capital that would be appropriate to land worth $400 per acre. High-priced land near the market might easily be made to return from 10 to 15 per cent. upon a working-capital of $80 per acre, while lands not so advantageously situated might return the same rate per cent. on $8 per acre, with a cultivation embracing pasturage and fallow. A practical adaptation of methods to circumstances will regulate this matter. The extension of railways is enlarging the area that may be profitably subjected to high culture. If these new lands can be brought up to the standard of the north, the writer thinks that France will be able to sustain a population of 50,000,000.

An abundance of fodder-plants is an essential element in this increased production. In those departments in which this sugar-beet cannot be successfully grown, some adequate substitute must be found. In many localities the sugar-beet has failed merely from lack of knowledge and skill in its cultivation. Strong local preferences, often mere prejudices, are urged in behalf of different plants, such as the cabbage, the Jerusalem-artichoke, the potato, the carrot, the rutabaga, the turnip, the radish, &c. What is wanted is a predominant plant, assuring a regular abundance of stable-feed and of stable-manure; a plant capable of withstanding drought, and requiring only a moderate amount of hand-labor. The writer thinks that such a plant has been found in the maize, which promises especially to meet the necessities of those parts of the country which suffered most from the frosts of last May and the drought of the following summer. It will take the place of the sugar-beet in rotation, and will require from four to six tons of stable-manure per acre in the spring, besides a complementary fertilization of sulphate of ammonia and superphosphate of chalk at planting-time. The maize will have this advantage over the sugar-beet, that it will allow the substitution of horse-implements for hand-labor. Irrigation in summer will increase the yield, but it can withstand the baleful influence of drought better than most other plants.

It is true that only some classes of lands are suited to maize, but well-chosen and well-treated land may be made to produce 35 tons of green fodder per acre, equivalent to 6 or 8 tons of dry hay, or three or four times the yield of meadow of average quality. It is doubtful whether the sugar-beet itself can rival such a yield of maize, which has also the advantage in cost, in resistance to drought, in adaptation to local circumstances, and in regularity of production. There are regions in which this crop with a high yield may be depended upon in a system of rotation, affording masses of fodder that could be obtained from no other plant. Profitable results from its cultivation have been realized by intelligent agriculturists. The writer insists that, in connection with cabbages, turnips, rag-grass, &c., it may be made profitably to occupy a large area of waste heather-land. In the South of France it will be of especial advantage, augmenting its live-stock production and its domes-

tic manures. If this plant is successfully introduced it will cause the productive power of the South to approximate, if not to equal, that of the North, and thus tend to equalize the economic advantages of the two sections.

An important problem, pressing for solution during 1875, is the increase of wages by the enlargement of forage-crops, requiring but little hand-labor and yielding grand returns of manure. Maize-fodder gives, per hectare, more than the sugar-beet. If the latter, by first yielding juice for sugar or alcohol, gives its residuum at less cost for cattle-feeding, it is no less true that the maize, less exacting of hand-labor, and more reliable in its productions, offers special inducements to the southern and central cultivators.

But other points in the productive question demand attention during 1875. Fertilizers, implements, enlarged machinery, live stock, irrigation, management of waters, and other themes, not only of discussion but also of practical experiment, will occupy the public mind.

PISCICULTURE IN FRANCE.—The fish-hatching establishment at Hunningue, in the department of Upper Rhine, during the incubating season of 1873–'74 hatched out 7,883,000 eggs, of which 38 per cent. perished; 42 per cent. were sent abroad, and the remainder were retained at the establishment. The number of fish sent out to restock the rivers were as follows: to Germany, 2,359,000; Austria, 60,000; Holland, 600,000; Luxembourg, 90,000; France, 180,000; Switzerland, 100,000; Italy, 30,000; Brazil, 35,000. About 500,000 salmon and bastard salmon were placed in the Rhine, the Ill, and the Moselle. Very satisfactory experiments have been made in the lakes of Pomerania, Silesia, and Brandenburg.

INTERNATIONAL SERICULTURAL CONGRESS.—The committee on organization of this body has published a circular indicating points desirable to illustrate by experiment prior to its fifth session at Milan, Italy, in 1876. The experiments reported at previous sessions have generally been too fragmentary and disconnected, and not capable of being coordinated in general results. In order to render such experiments capable of effective comparison it is necessary that the conditions and circumstances be, as nearly as possible, identical. To aid in securing this uniformity the circular sets forth several points of guidance for the experiments to be carried on by parties interested during the period intervening before the session of the Milan congress. These points embrace, first, circumstances influencing the health of the silk-worm in the course of rearing, and in the confection and preservation of eggs. Rearing includes breeding, type, and its modification by heat, moisture, light, aeration, and other influences affecting the health of worms normally incubated from well-preserved eggs. Special attention is directed to the effects of mulberry-leaves gathered fresh, but wet with copious rains, especially during the fifth age and at the time when the worms are about to spin their cocoons. It is especially desirable to experiment upon the character and prevention of the disease known as *flacherie*. Where worms are infected with this malady they should be separated from the healthy ones and divided into classes according to the degree of development of the symptoms, and each class studied separately. In regard to the confection of eggs, it is desirable to ascertain how far parentage is a good criterion of selection, and how far some breeds excel others in their capacity to resist *flacherie* or other diseases. These experiments should all be made upon old breeds producing yellow cocoons.

The second branch of inquiry refers to the influences which cause the hatching of the eggs before the regular time, such as artificial hibernation, rubbing with brushes or other bodies, solid or fluid; exposure to thunder-storms or currents of electricity. The extent and intensity of these influences should be carefully determined.

The third general inquiry refers to the terminology of diseases affecting the silk-worm. An effort will be made to settle upon a system of synonyms of the names of diseases in different languages.

Persons desiring further information should address "Comité d'organization du V Congrès Bacologique, Musée Civique, Milano, Italy."

CAUSE AND CURE OF HARD TIMES.—Our correspondent in Howard County, Arkansas, reports that destitution, bordering on starvation, prevails in that section. The immediate cause stated is the severe drought of last season, but the want of ability to bridge over such emergencies, without great suffering, is ascribed to two causes more under human control. The first is a prevalent habit of lazy loafing, in place of industry and consequent thrift, among the farming population. The time which ought to be devoted to vigorous work in improving the soil and cultivating good crops is spent, the greater part, in hanging around public houses and other places of common resort, and the less part in farming in the most superficial, slip-shod, and slovenly manner. Second, cotton and corn are almost the only crops cultivated. One consequence is that not only the community at large, but the farmers themselves, are dependent for meat, bread, and other agricultural supplies for home consumption on *purchase* from abroad; so that when the cotton and corn crops fail they have no supplies of their own production, and nothing to buy with. Diversified agriculture and industry in pursuing it are the very obvious remedies suggested.

RYE FROM THE DEPARTMENT.—Our correspondent in Washington County, Vermont, reports that six quarts of winter-rye, received from this Department, and sown on sandy soil, produced six bushels of excellent grain.

YIELD OF BUTTER BY A JERSEY COW.—Our correspondent in Washington County, Vermont, reports that, in the ten months following April 4, 1874, a Jersey cow, owned by Mr. Nathan Skinner, of Plainfield, yielded 503½ pounds of butter, besides milk and cream for two persons. Two quarts of meal per day were fed to her, and, after the 1st of September, two quarts of bran in addition.

WHEAT IN TEXAS IN 1875.—A correspondent in Dallas County reports that, in that and the adjoining counties, the acreage in wheat has been largely increased, and that the prospect of a good crop is very favorable. He estimates the acreage in Dallas at 50,000, and that "a fair yield" would be 750,000 bushels. This, at his estimate of population, 40,000, would furnish 18¾ bushels for each individual. He states that there are, in Dallas City, milling capacities for working about 340,000 bushels per annum into flour. After reserving sufficient flour for home consumption, and wheat for seed, there would be about 40,000 barrels of the former and a large surplus of the latter for outside markets.

OATS FROM THE DEPARTMENT.—Our correspondent in Benton County, Oregon, reports that Mr. John Burnett received from this Department two pounds of "Early Fallow" oats, which were sowed, about the 10th of May, on a plat of new-prairie soil (70 feet by 12) thoroughly prepared but not manured. They ripened as soon as common varieties

sown a month earlier. The yield was over 150 pounds—more than 75 fold—of sound, clean oats. The berry is plump, but not extra large; the hull transparent and thin; and in bulk the oats weigh little less than wheat.

AGRICULTURE AMONG THE CHOCTAWS.—Our correspondent in the Choctaw Nation, Indian Territory, reports that there is great suffering in that tribe for want of food. The Indians "worked pretty faithfully" last year, but the extremely wet spring necessitated late planting, and this, followed by an early drought, made very short crops inevitable. In many localities there is no breadstuff attainable, and many hundreds are living on meat alone. They began to prepare their grounds and put in their seed as early as practicable this season, and are doing what they can to guard against a repetition of the famine they are now suffering. Our correspondent, who has been a missionary among them for eighteen years, says:

I have ever taught the Christian Indians that *they* should be models to all the others; that the Christian religion should cause them to become more industrious, intelligent, and refined, with better houses, larger farms, and more stock, than when they were in their wild state. I often go into their fields with them, encourage and advise them as to work, and exemplify the manner of doing it. Have often begged seeds from the States to distribute among them, have helped cultivate them in their gardens, and even showed them how to cook the vegetables raised from them.

EXCESSIVE RAIN-FALL.—A correspondent at Baton Rouge, La., sends to this Department a record of the rain-fall at that point, covering March and April. In March the aggregate depth of rain, falling in ten distinct storms, was 8.7 inches; in April, 6.6 inches, falling in six storms; total for the two months, 15.3 inches.

A HARD FREEZE.—Our correspondent in Russell County, Kentucky, reports that "the cold snap" on the 16th and 17th of April was so unprecedentedly severe as to do great damage, not only to the crops, but to forest-trees. He states:

The very heavy bloom on our white-oak and beech trees is all killed and the timber greatly injured. The tops of most of the ash, white-oak, beech, and hickory trees, and many branches three inches in diameter, are killed. In the tops of three-fourths of them there are no signs of vitality.

AVERAGE WEIGHT OF FLEECES.—The following statements are from our correspondent in Sangamon County, Illinois: From a flock of 87 merinos, the greater part pure bred, were clipped 841 pounds of unwashed wool; average per head, 9.67 pounds. Ten or twelve of the sheep were bucks, some of which yielded 17 to 19 pounds. Another farmer clipped from 3 pure-bred Cotswold ewes 34 pounds; and another from 4 high-grade merino ewes, 21 pounds. The fleeces from the 94 sheep averaged 9.52 pounds of unwashed wool per head.

FRUITFUL IN CLOVER AND CHERRIES.—A correspondent in Augusta County, Virginia, reports that the section between Staunton and Lexington, embracing parts of Augusta and Rockbridge Counties, is remarkably adapted to the production of clover and cherries. Within an area not exceeding ten miles square, over 500 bushels of clover-seed were produced last year. Ox-heart cherry-trees, some of which are found 2 feet in diameter, are so abundant that, when loaded with ripe fruit, they are often cut down as a convenient way of gathering it.

COMMERCE IN RICE.—The records of commerce and navigation show a marked decrease in the exports of rice, which have been about one-fifth as large in the past four years as in a similar period prior to 1870—

the recent average being less than a half-million pounds per annum. In 1861 the export exceeded 81,000,000 pounds. The average import of the past four years has been 74,000,000 pounds; of the four years preceding, 50,000,000 pounds. The records are as follows:

Years.	Domestic exports.		Foreign exports.		Imports.	
	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.
1871	445,842	$22,502	10,212,920	$220,463	64,655,827	$1,876,786
1872	403,835	28,768	12,651,959	378,996	74,642,631	2,317,172
1873	276,637	19,740	20,202,774	591,417	83,755,225	2,304,696
1874	558,922	27,075	25,840,877	763,497	73,257,716	2,083,248

A PROMISING GRASS.—Our correspondent in Jefferson, Ala., sends a description of a grass which made its appearance in that county, on the Little Capuba River, and "is new to all who have seen it." It was discovered two years ago. It spreads rapidly on bottom-lands, but not on upland. Last year, T. K. Truss sowed one acre in wheat on rich bottom-land in the Cahaba Valley. After the wheat was gathered, the land not being plowed, this grass came up spontaneously. In the autumn he cut and baled it, and sent it to a commission-merchant in Birmingham. The bill of sale was as follows: 20 bales of hay, 5,466 pounds, $104.76; expenses, $12.55; net profit, $92.21. "As to the quality of the hay, it is pronounced by livery-stable men equal to timothy." Our correspondent stated that with this report he forwarded a specimen of the seed and a stalk of the grass, measuring 9 feet in length; but these have not been received.

ORANGE-BLIGHT.—A lady in the parish of Terre Bonne, Louisiana, reports a remedy for orange-blight, which she supposes to be identical with that described on page 200 of the Annual Report of this Department for 1873. It had been her former practice to have the earth raised up around her orange-trees. For years they have been dying by slow degrees, and many were quite dead. The leaves would first turn yellow, and then the limbs would gradually wither and die. Various remedies were tried in vain, until a faithful servant heard certain creoles describing their process of preventing the blight, and reported the same. He was commissioned to carry it into effect, and did, as follows: In January he cleared away all the grass within 2 or 3 feet of the trees, and dug among the roots, leaving some of them exposed to the air and sun. The result is that all the trees have improved. The living parts have leaved out in full, have bloomed freely, and appear to be in vigorous health. On one tree, which bore only two oranges last year, and which was so nearly dead as to be thought beyond recovery, each live branch has put out the richest green leaves and is in full bloom.

WOOL-GROWING IN CALIFORNIA.—The following table, prepared by E. Grozer, represents the shipments of wool from San Francisco for the last two years. It indicates the rapid increase of wool-growing in California, and the large dimensions it has already reached. That industry

s at present making healthy progress, not only in extent of production but in improved grades of sheep, qualities of wool, and yield per head.

Years.	Pounds.	Value.	Years.	Pounds.	Value.
1854	175, 000	$14, 000	1865	6, 549, 931	$1, 334, 425
1855	360, 000	36, 000	1866	4, 662, 129	897, 938
1856	600, 000	80, 000	1867	7, 057, 631	1, 143, 571
1857	1, 100, 000	165, 000	1868	13, 225, 181	2, 436, 594
1858	1, 428, 551	190, 969	1869	13, 747, 791	2, 370, 165
1859	2, 378, 250	356, 738	1870	19, 238, 600	3, 655, 000
1860	3, 055, 325	397, 198	1871	22, 064, 638	6, 067, 772
1861	3, 721, 998	507, 297	1872	24, 578, 980	7, 450, 000
1862	5, 090, 300	1, 668, 087	1873	29, 238, 376	6, 450, 300
1863	5, 268, 480	1, 225, 151	1874	36, 088, 701	8, 182, 009
1864	5, 935, 670	1, 254, 778			

AMERICAN COTTON IN INDIA.—The Bombay Chamber of Commerce reported, concerning New Orleans seed, grown in the Dharwar district, a staple of good color and fair length, fine and silky, but deficient in strength as compared with the Hingunghat and the better kinds of Oomrastee. Later experiments in other districts are adverse to the further use of American seed. Ryots are no longer urged to cultivate it, and there is less disposition to experiment with it.

Cotton experiments have been conducted for several years on the government farms in Berar with New Orleans, Sea Island, Egyptian, Peruvian, and Pernambuco seed, with unpromising results in all cases, the "Dharwar acclimatized New Orleans" succeeding better than the others. The natives took a fancy to this sort, and in 1872 the cultivation had extended to 3,534 acres. But the result of this extension was not favorable; while thriving on the hills south of Berar and at the foot of the Souptura range on the north, on the low-lying black soils the crop generally proved a failure, dampening the ardor of the natives for its further cultivation.

A BETTER SYSTEM WANTED.—The secretary of a farmers' club in Benton County, Arkansas, writes as follows:

Horses are thin, owing to shortness of last year's corn-crop, with no grass, clover, hay, or anything else to fall back upon, except corn in shock half rotted. This system of farming is our leading one, and is slowly but certainly leading us to ruin. But it is beginning to take a new turn. The Department has done much for us in disseminating practical information on a better system of agriculture, through the annual and monthly reports, though thousands fail to appreciate or even to read them.

GREAT RUIN OF GRAIN-CROPS.—The secretary of the Loami Farmers' Club, Sangamon County, Illinois, reports that in that county the rye has been about all killed, and the winter-wheat to a very wide extent, by late unpropitious spring-weather. He states that thousands of acres will be plowed up and put in corn, spring-wheat, and oats. "The early-sown was killed the worst, the late broadcast-sown the least."

THE WINTER IN WISCONSIN.—Our correspondent in Douglas County reports that between the first of November and the last of March, at Superior, the mercury fell below zero on eighty different days. The like has not occurred there before within the last nineteen years. The snow was not excessive until the 15th of March, when a depth of 18 to 24 inches on a level fell.

INDIGENOUS PLUMS.—Our correspondent in Martin County, Minnesota, writes:

Wild plums of many varieties are cultivated with success here. If they are not better than the eastern tame plums, they constitute an excellent substitute for them. They are used

for pies, puddings, sauce, and preserves. Farmers' wives often scald and put down from one to three barrels for common table-use, and so far as I know, they keep good until they are used up. I have known them to be good in the spring after they were put up. From the time they are nearly ripe, children are allowed to eat them at will, at least after the first few days. They are considered a very sure cure for summer-complaints.

RAIN-FALL EXTRAORDINARY.—A correspondent in Juab County, Utah, reports that the prospect for all kinds of crops is very bright in that county, and that with less than usual labor. Writing May 26, he says:

For the last five or six weeks we have had rain about every seven or eight days, which is something wonderful in this part of the world. The farmers are looking cheerful, and well they may, as it relieves them of a great amount of labor in irrigating, and thus gives them time for other important work. The season is all of a month in advance of that of last year.

FIELD-PEASE AS A FERTILIZER.—A planter in Montgomery County, Alabama, reports that last year he sowed cow-pease freely between the rows in a field of corn. A drought came on before the pease matured and so dried the vines that they died. These he covered by turning two furrows between the rows. This spring, cotton planted on that field is far superior to that on other parts of his plantation. From the results, thus far apparent, he judges the pea-vines equal to a coat of guano in fertilizing value.

MARKET PRICES OF FARM-PRODUCTS.

May and June, 1875.

The following quotations represent the state of the market, as nearly as practicable, at the beginning of the month.

Articles.	May.	June.
NEW YORK.	*Price.*	*Price.*
Flour, superfine State and western ..... per barrel.	$4 60 to $4 90	$4 70 to $5 00
extra State ..... do...	5 05 to 5 50	4 95 to 5 50
extra to choice western ..... do...	5 05 to 8 25	4 95 to 8 25
common to fair southern extras ..... do..	5 10 to 5 75	5 00 to 5 90
good to choice southern extras ..... do...	5 20 to 8 25	5 95 to 8 25
Wheat, No. 1 spring ..... per bushel.	1 27 to 1 31	1 12½ to 1 16
No. 2 spring ..... do...	1 19 to 1 23	1 07 to 1 12¼
winter, red, western ..... do...	1 33 to 1 42	1 22 to 1 32
winter, amber, western ..... do...	1 33 to 1 42	1 22 to 1 32
winter, white, western ..... do...	1 40 to 1 45	1 25 to 1 33
Rye ..... do...	95 to — —	1 10 to — —
Barley ..... do...	1 28 to 1 45	nominal.
Corn ..... do...	91 to 93½	73 to 81
Oats ..... do...	73½ to 78½	69 to 75
Hay, first quality ..... per ton.	17 00 to 20 00	16 00 to 21 00
second quality ..... do...	12 00 to 13 00	13 00 to 14 00
Beef, mess ..... per barrel.	9 50 to 10 50	18 00 to 19 00
extra mess ..... do...	10 50 to 12 00	— — to — —
Pork, mess ..... do...	22 25 to — —	20 70 to 20 75
extra prime ..... do...	16 50 to 17 50	15 37½ to 15 75
prime mess ..... do...	19 75 to 20 00	18 75 to — —
Lard ..... per pound.	15⅝ to — —	13⅝ to 14⅝
Butter, western ..... do...	12 to 17	14 to 24
State dairy ..... do...	15 to 28	16 to 28
Cheese, State factory ..... do...	14 to 16½	10 to 12½

Market-prices of farm products—Continued.

Articles.	May.	June.
NEW YORK—Continued.		
Cheese, western factory ..... per pound.	$0 12 to $0 15½	$0 10 to $0 12
Cotton, ordinary to good ordinary ..... do	13⅜ to 15⅜	13½ to 15¼
low middling to good middling ..... do	15⅞ to 17½	15¾ to 17
Sugar, fair to prime refining ..... do	8¼ to 8⅝	8 1/16 to 8½
Tobacco, lugs ..... do	9½ to 13	9½ to 13¼
low leaf to medium leaf ..... do	12¼ to 17	12¼ to 17
Wool, American XXX and pick-lock ..... do	57 to 62	57 to 62
American XX and X ..... do	48 to 55	50 to 55
American combing ..... do	54 to 63	54 to 65
pulled ..... do	30 to 50	30 to 48
California spring clip ..... do	24 to 34	22 to 35
California fall clip ..... do	16 to 24	16 to 24
BOSTON.		
Flour, western superfine ..... per barrel.	4 50 to 4 75	4 25 to 4 75
common western extras ..... do	5 25 to 5 75	5 00 to 5 50
red wheat, good to fancy northwestern ..... do	5 50 to 8 50	5 50 to 8 50
white wheat, good to fancy western ..... do	6 00 to 8 00	6 25 to 8 25
southern family ..... do	6 50 to 8 00	7 00 to 8 50
Corn ..... per bushel.	92 to 95	82 to 85
Oats ..... do	72 to 77	73 to 78
Rye ..... do	1 20 to 1 25	1 15 to — —
Barley ..... do	1 00 to 1 40	nominal.
Hay, eastern and northern ..... per ton.	16 00 to 22 00	16 00 to 23 00
choice western ..... do	— — — —	— — — —
Beef, mess ..... per barrel.	— — to 10 50	— — to 10 50
extra mess ..... do	— — to 13 00	— — to 13 00
Pork, prime ..... do	17 50 to 18 00	17 00 to 17 50
mess ..... do	22 50 to 23 00	21 50 to 22 00
Lard ..... per pound.	16 to 16½	15½ to 16
Butter, New York and Vermont ..... per pound.	16 to 23	15 to 26
western ..... do	15 to 22	14 to 18
Cheese, New York and Vermont factory ..... do	14½ to 16½	10 to 12½
western factory ..... do	14 to 16½	9 to 12⅓
Sugar, fair to good refining ..... do	8¼ to 8½	8 to 8¼
Cotton, ordinary to good ordinary ..... do	14 to 15¾	13¼ to 15¼
low middling to good middling ..... do	16½ to 17⅜	15¾ to 17
Wool, Ohio and Pennsylvania ..... do	52 to 56½	50 to 57
Michigan ..... do	48½ to 52½	45 to 52
other western ..... do	44 to 49	45 to 50
pulled ..... do	24 to 57½	25 to 55
combing-fleece ..... do	39 to 70	60 to 70
California ..... do	16 to 22	14 to 36
PHILADELPHIA.		
Flour, superfine ..... per barrel.	3 75 to 4 25	4 25 to 4 50
Pennsylvania, extra to choice ..... do	4 25 to 6 00	5 00 to 6 25
western, extra to choice ..... do	5 50 to 6 25	5 50 to 6 25
Wheat, white ..... per bushel.	1 40 to 1 50	1 35 to 1 42
amber ..... do	1 32 to 1 36	1 32 to 1 36
red ..... do	1 30 to 1 34	1 30 to 1 34
Rye ..... do	1 05 to 1 08	1 10 to 1 12
Barley ..... do	Nominal.	Nominal.
Corn ..... do	88 to 90	81 to 84
Oats ..... do	69 to 77	67 to 71
Hay, prime baled ..... per ton.	22 00 to 24 00	24 00 to 25 00
baled, common to fair shipping ..... do	20 00 to 22 00	22 00 to 23 00
Beef, western mess ..... per barrel.	7 00 to 9 00	7 00 to 8 00
extra mess ..... do	8 00 to 9 00	8 00 to 9 00

Market-prices of farm products—Continued.

Articles.		May.	June.
PHILADELPHIA—Continued.			
Beef, Warthman's city family	per barrel	$16 00 to — —	$16 00 to — —
Pork, mess	do	22 50 to $23 00	20 50 to $21 00
prime mess	do	20 00 to — —	17 50 to — —
prime	do	16 50 to 17 00	15 00 to 15 25
Lard	per pound	16⅛ to 19½	15 to 18½
Butter, choice Middle State	do	27 to 30	25 to 29
choice western	do	27 to 28	22 to 28
Cheese, New York factory	do	16 to 17	10 to 12½
Ohio factory	do	15 to 16½	11 to 12½
Sugar, fair to good refining	do	8½ to 8¾	8⅛ to 8⅝
Cotton, ordinary to good ordinary	do	13⅜ to 15½	13⅜ to 15½
low middling to good middling	do	16 to 17¾	16 to 17¾
Wool, Ohio X and XX	do	51 to 55	50 to 55
other western	do	45 to 53	45 to —
tub-washed	do	54 to 70	55 to 57
pulled	do	27 to 47	38 to 52
combing	do	46 to 71	42 to —
BALTIMORE.			
Flour, superfine	per barrel	4 25 to 4 75	4 50 to 4 75
extra	do	5 00 to 5 50	5 00 to 5 75
family and fancy	do	6 00 to 8 50	5 75 to 8 25
Wheat, red	per bushel	1 30 to 1 40	1 20 to 1 32
amber	do	1 42 to 1 44	1 34 to 1 37
white	do	1 44 to 1 50	1 30 to 1 38
Rye	per bushel	1 15 to 1 17	1 14 to 1 22
Oats	do	68 to 78	69 to 75
Corn	do	86½ to 92	73 to 89
Hay, Maryland and Pennsylvania	per ton	16 00 to 24 00	21 00 to 24 00
Pork, mess	per barrel	23 00 to — —	21 50 to — —
extra prime	do	17 00 to — —	17 00 to — —
Lard	per pound	16¼ to 17	15½ to 17
Butter, western	do	11 to 26	13 to 27
eastern	do	15 to 28	18 to 28
Cheese, western factory	do	14½ to 16	11 to 12
eastern factory	do	15 to 17	13 to 14
Sugar, fair to good refining	do	8⅛ to 8⅝	8 1/16 to 8 5/16
New Orleans and grocery grades	do	— — to — —	— — to — —
Tobacco, lugs	per cental	9 50 to 14 00	8 00 to 12 00
leaf, common to medium	do	11 00 to 14 50	12 00 to 14 50
Cotton, ordinary to good ordinary	per pound	14 to 15	— — to 14¾
low middling to good middling	do	15½ to —	15¼ to 15⅝
CINCINNATI.			
Flour, superfine	per barrel	5 25 to 5 50	4 80 to 5 05
extra	do	5 75 to 6 00	5 15 to 5 30
family and fancy	do	6 00 to 7 00	5 50 to 7 00
Wheat, winter red	per bushel	1 32 to 1 35	1 20 to 1 25
hill (amber)	do	1 35 to 1 38	1 25 to 1 30
white	do	1 35 to 1 40	1 28 to 1 35
Rye	do	1 20 to 1 22	1 15 to — —
Barley	do	1 35 to 1 60	1 45 to 1 55
Corn	do	73 to 77	71½ to 74
Oats	do	66 to 69	63 to 67
Hay, baled, No. 1	per ton	20 00 to 22 00	18 00 to 20 00
lower grades	do	15 18 to 18 00	15 00 to 17 00
Beef, plate	per barrel	— — to — —	— — to — —
Pork, mess	do	22 00 to 22 50	20 00 to 20 50
Lard	per pound	15½ to 17	13¼ to 16½

Market-prices of farm products—Continued.

Articles.	May.	June.
CINCINNATI—Continued.		
Butter, choice, per pound	$0 27 to $0 30	$0 22 to $0 25
prime, do	18 to 22	18 to 22
Cheese, prime to choice factory, do	13 to 14	10½ to 11
Sugar, New Orleans, fair to good, do	8¼ to 8⅞	8¼ to 8⅞
prime to choice, do	9⅛ to 9½	9⅛ to 9½
Tobacco, lugs, do	10 to 12½	10½ to 12½
leaf, do	15 to 20	15 to 20
Cotton, ordinary to good ordinary, do	13½ to 14⅜	12⅞ to 14
low middling to good middling, do	15⅛ to 16⅛	14¾ to 15¾
Wool, fleece, common to fine, do	43 to 45	43 to 45
tub-washed, do	43 to 46	— — to — —
unwashed clothing, do	30 to 32	30 to 31
unwashed combing, do	36 to 38	38 to 40
pulled, do	35 to 36	35 to 38
CHICAGO.		
Flour, choice winter extra, per barrel	5 50 to 7 00	7 00 to 8 00
common to good, ditto, do	5 00 to 5 25	6 00 to 6 75
choice spring, ditto, do	5 00 to 5 25	5 50 to 5 25
patent spring, do	6 00 to 9 00	6 75 to 8 00
spring superfine, do	3 75 to 4 25	3 50 to 4 00
Wheat, No. 1 spring, per bushel	1 09 to — —	94½ to 98½
No. 2 spring, do	1 04 to 1 05½	91 to 93
No. 3 spring, do	98 to 99¼	88 to — —
Rye, No. 2, per bushel	1 09 to — —	1 02 to 1 03
Barley, No. 2, do	1 30 to 1 32	1 20 to 1 23
Oats, No. 2, do	62 to 62¾	57½ to 58¼
Corn, No. 2, do	76 to 76½	62½ to 64
Hay, timothy, per ton	16 00 to 19 00	18 50 to 21 00
prairie, do	8 50 to 15 00	12 00 to 18 00
Beef, mess, per barrel	8 25 to — —	8 50 to — —
extra mess, do	9 25 to — —	9 50 to — —
Pork, mess, do	21 95 to 22 05	19 95 to 20 00
prime mess, do	19 90 to — —	— — to — —
extra mess, do	15 75 to — —	15 00 to 15 25
Lard, per pound	— — to 15¾	— — to 14⅛
Butter, choice to fancy, do	25 to 31	24 to 30
medium to good, do	17 to 20	18 to 22
Cheese, good to prime factory, do	16½ to 17	11 to 12
Sugar, New Orleans, common to choice, do	7½ to 9	— — to — —
Wool, tub-washed, do	45 to 58	— .. to — —
fleece-washed, do	40 to 50	43 to 45
unwashed, do	27 to 37	25 to 34
pulled, do	42 to 47	— — to — —
country, do	— — to — —	35 to 36
SAINT LOUIS.		
Flour, winter, common to choice, per barrel	5 75 to 6 75	4 75 to 7 75
spring, common to choice, do	5 40 to 6 00	4 50 to 5 50
Wheat, winter, white, per bushel	1 30 to 1 32	1 30 to 1 32
red, do	1 20 to 1 40	1 14 to 1 38
spring, do	1 00 to 1 12	95 to 1 07
Corn, do	70 to 84	64 to 78
Rye, do	1 03 to 1 10	1 03 to 1 10
Barley, do	1 32½ to 1 37½	1 25 to 1 50
Oats, do	60 to 68	60 to 68
Hay, timothy, per ton	19 00 to 23 00	19 00 to 23 00
prairie, do	13 00 to 15 00	13 00 to 15 00
Beef, mess, per barrel	14 00 to 15 00	14 00 to 15 00
Pork, mess, do	21 00 to 22 00	21 00 to 22 00
Lard, per pound	12 to 14	12 to 14
Butter, prime to choice dairy, do	27 to 28	27 to 28

Market-prices of farm products—Continued.

Articles.	May.	June.
SAINT LOUIS—Continued.		
Butter, country packed ..... per pound.	$0 15 to $0 20	$0 15 to $0 20
Cheese, Ohio factory ..... do...	13 to 13½	13 to 13½
New York factory ..... do...	13 to 13½	13 to 13½
Cotton, ordinary to good ordinary ..... do...	12½ to 14½	12½ to 14½
low middling to good middling ..... do...	15 to 16¼	16 to 16¼
Tobacco, lugs ..... do...	10 to 12	10 to 12
case to medium leaf ..... do...	11 to 13	11 to 15
Wool, tub-washed ..... do...	53 to 55	53 to 55
fleece-washed ..... do...	32 to 52	32 to 52
unwashed ..... do...	28 to 36	28 to 38
NEW ORLEANS.		
Flour, superfine ..... per barrel.	5 25 to 5 50	5 25 to — —
extra ..... do...	5 75 to 6 37½	5 37½ to 6 25
family and fancy ..... do...	6 50 to 7 25	6 50 to 7 50
Corn, yellow ..... per bushel.	86 to 87	— — to 88
white ..... do...	86 to 88	86 to 88
Oats ..... do...	73½ to 75	72 to 73
Hay, choice ..... per ton..	26 00 to 28 00	— — to — —
prime ..... do...	24 00 to 24 50	25 to 26 50
Beef, Texas ..... per barrel..	10 00 to 11 50	10 00 to 11 50
western ..... do...	14 00 to 16 00	16 00 to — —
Fulton Market ..... per half barrel..	11 40 to 11 50	11 50 to 12 50
Pork, mess ..... per barrel..	23 00 to 23 25	21 00 to 21 50
Lard ..... per pound..	15 to 16½	15 to 16
Butter, choice Goshen ..... do...	30 to 33	33 to — —
western ..... do...	15 to 20	30 to 33
Cheese, choice western factory ..... do...	— — to 16	8 to 14
New York cream ..... do...	18 to 18½	18 to — —
Sugar, fair to fully fair ..... do...	8¼ to 8¾	8 to 9
prime to strictly prime ..... do...	9 to — —	9¼ to 9½
clarified, white and yellow ..... do...	9⅝ to 9¾	9¾ to 10½
Tobacco, lugs ..... do...	9 to 12	9 to 12
low leaf to medium leaf ..... do...	12 to 14½	12 to 14½
Cotton, ordinary to good ordinary ..... do...	13½ to 14⅜	13 to 13½
low middling to good middling ..... do...	14⅞ to 16⅓	14⅝ to 15⅝
Wool, clear lake ..... do...	30 to 33	— — to — —
SAN FRANCISCO.		
Flour, superfine ..... per barrel..	4 00 to 4 35	4 00 to 4 25
extra ..... do...	4 50 to 4 80	4 50 to 4 75
family and fancy ..... do...	5 00 to 5 50	5 00 to 5 50
Wheat, California ..... per cental..	1 60 to 1 85	1 60 to 1 75
Oregon ..... do...	1 60 to 1 80	1 60 to 1 75
Barley ..... do...	1 00 to 1 75	1 35 to 1 60
Oats ..... do...	2 10 to 2 25	1 90 to 2 25
Corn, white ..... do...	1 55 to 1 60	1 55 to 1 60
yellow ..... do...	1 50 to 1 55	1 50 to 1 52½
Hay, State ..... per ton..	12 00 to 18 00	10 00 to 16 00
Beef, mess ..... per barrel..	8 50 to 9 50	8 50 to 9 50
family mess ..... per half barrel..	6 50 to 8 00	6 50 to 8 00
Pork, mess ..... per barrel..	22 00 to 23 00	22 00 to 23 00
prime mess ..... do...	16 50 to 18 00	16 50 to 18 00
Lard ..... per pound..	14 to 16½	14 to 16½
Butter, overland ..... do...	20 to 25	20 to 25
California ..... do...	25 to 32½	25 to 32½
Oregon ..... do...	20 to 22½	20 to 22½
Cheese ..... do...	12½ to 16	12½ to 15
Wool, native ..... do...	10 to 20	10 to 15
California ..... do...	15 to 25	15 to 26
Oregon ..... do...	18 to 25	18 to 26

LIVE-STOCK MARKETS.

Articles.	May.	June.
NEW YORK.		
Cattle, extra beeves ..... per cental..	$13 25 to $13 75	$13 25 to $13 50
good to prime ..... do....	11 75 to 13 00	12 00 to 13 00
common to fair ..... do....	10 75 to 11 50	10 25 to 11 75
average of the market ..... do....	11 25 to — —	11 75 to — —
Texans ..... do....	Nominal	9 00 to 12 25
milch-cows ..... per head..	40 00 to 70 00	50 00 to 90 00
	5 50 to 7 00	4 50 to 8 25
Sheep ..... per cental..	5 00 to 8 00	5 25 to 7 00
Swine ..... do....	None on sale.	None on sale.
PHILADELPHIA.		
Cattle, prime beeves ..... per cental..	8 00 to 8 12¼	8 00 to 8 50
fair to good ..... do....	6 50 to 7 75	6 25 to 8 00
common ..... do....	4 50 to 6 00	5 00 to 6 00
Sheep ..... do....	5 00 to 8 00	4 50 to 5 75
Swine, corn-fed ..... do....	11 00 to 13 50	11 50 to 12 50
BALTIMORE.		
Cattle, best beeves ..... per cental..	6 75 to 7 50	6 25 to 7 50
first quality ..... do....	5 50 to 6 75	5 25 to 6 25
medium or good quality ..... do....	5 00 to 5 50	4 75 to 5 50
ordinary ..... do....	4 00 to 5 00	4 50 to 4 75
general average ..... do....	6 37 to — —	6 37 to — —
most of the sales ..... do....	6 00 to 7 00	5 75 to 7 00
milch-cows, fair to good ..... per head..	30 00 to 48 00	30 00 to 45 00
Sheep ..... per cental..	4 50 to 7 50	4 00 to 5 50
Swine ..... do....	10 00 to 11 50	10 00 to 10 75
CINCINNATI.		
Cattle, good to prime butchers' steers ..... per cental..	6 00 to 6 50	5 75 to 6 50
fair to medium ..... do....	5 00 to 5 75	4 50 to 5 50
common ..... do....	3 75 to 4 75	3 50 to 4 00
milch-cows ..... per head..	30 00 to 55 00	25 00 to 55 00
calves ..... per cental..	5 50 to 7 00	4 00 to 6 00
Sheep ..... do....	5 50 to 6 75	3 25 to 5 00
Swine, good to choice ..... do....	8 00 to — —	7 30 to 7 50
common to medium ..... do....	7 00 to 7 60	6 90 to 7 20
CHICAGO.		
Cattle, extra graded steers, 1,400 to 1,600 pounds, per cental	6 30 to 6 75	6 40 to 6 60
choice beeves, 1,250 to 1,450 pounds, per cental	6 00 to 6 20	6 00 to 6 25
good beeves, 1,150 to 1,350 pounds, per cental	5 80 to 6 00	5 75 to 5 90
medium, 1,100 to 1,250 pounds, per cental..	5 50 to 5 75	5 25 to 5 60
inferior ..... do....	3 50 to 5 50	2 50 to 3 25
Texans ..... do....	3 00 to 5 75	3 00 to 4 50
milch-cows ..... per head..	25 00 to 45 00	— — to — —
Sheep ..... do....	3 00 to 6 50	3 50 to 5 75
Swine ..... do....	7 00 to 8 75	6 25 to 7 35
SAINT LOUIS.		
Cattle, fair to choice native steers ..... per cental..	4 50 to 6 75	4 50 to 6 75
common to fair natives ..... do....	3 25 to 4 75	3 25 to 4 75
inferior to common ..... do....	1 50 to 2 87½	1 50 to 2 87½

Live-stock Markets—Continued.

Articles.	May.	June.
SAINT LOUIS—Continued.		
Cattle, Texans, common to choice ....per cental..	$2 00 to $4 25	$2 50 to $4 25
Sheep ....do....	3 75 to 6 25	3 75 to 6 25
Swine ....do....	..... to 8 00	6 60 to 8 00
Horses, plug....per head..	40 00 to 75 00	40 00 to 75 00
plain ....do....	80 00 to 110 00	80 00 to 110 00
street-car....do....	75 00 to 125 00	75 00 to 125 00
heavy draught....do....	130 00 to 170 00	130 00 to 170 00
good drivers....do....	100 00 to 150 00	100 00 to 150 00
extra ....do....	175 00 to 180 00	175 00 to 180 00
Mules, 14 to 15 hands high....do....	75 00 to 120 00	75 00 to 120 00
15 to 16 hands high ....do....	120 00 to 180 00	120 00 to 180 00
extra....do....	175 00 to 180 00	175 00 to 200 00
NEW ORLEANS.		
Cattle, Texas beeves, choice....per head..	40 00 to 46 00	40 00 to 46 00
first quality....do....	30 00 to 35 00	30 00 to 35 00
second quality....do....	20 00 to 25 00	20 00 to 25 00
Western beeves....per cental..	3 00 to 7 50	— — to — —
milch-cows....per head..	35 00 to 100 00	35 00 to 100 00
calves....do....	7 00 to 9 00	7 00 to 9 00
Sheep, first quality....do....	6 00 to 7 00	6 00 to 7 00
second quality ....do....	3 00 to 4 00	3 00 to 4 00
Swine ....per cental..	5 00 to 8 50	5 00 to 10 00

FOREIGN MARKETS.

WHEAT.—The season, in the United Kingdom, has shown great variation of temperature. About the middle of May, in some parts of England, the thermometer in the sunshine indicated 110 degrees, but this was followed by cutting breezes and a furious hail-storm. Several portions of France complained of drought, though of late rains have become more abundant. In northern Europe the rain-fall has been plentiful. Markets in Belgium and Holland show a disposition to weaken, but Germany and Russia show no change. Commercial authorities in Europe were puzzled at the apparently inconsistent advices from America. The ravages of grasshoppers in the wheat-producing regions of the West did not raise the price above 46*s.* 6*d.* per quarter, including cost and insurance, while California promised to outdo even her previous export. Sellers in London markets had become indifferent about accepting current rates, and a general impression was felt that prices would not fall any further. British wheat was offered in Mark Lane in but moderate supplies. The sales of English wheat in the kingdom, during the last week in May, amounted to 51,278 quarters at 42*s.*, against 42,822 quarters at 62*s.* 4*d.* during the corresponding week of 1874. The London averages were 44*s.* or 1,749 quarters. The imports into the kingdom during the third week in May were 968,260 cwts. Fair arrivals of foreign were noted during the following week. The show of fresh samples from the neighboring counties of England was meager, but showed a good condition of the grain. The demand for "English qualities" was very small, and foreign was also very inactive.

Holders in French provincial markets had demanded an advance, but there was a determined resistance on the part of buyers. During

the last week in May, 21 French markets showed a tendency to advance, 66 were calm or firm, and 27 showed a declining tendency. In Paris holders asked full prices. The trade was quite animated at Marseilles, one day sales amounting to 19,000 quarters. Most of the European markets showed a calm state of the trade.

In Mark Lane, London, Essex and Kent, white brought 43*s.* to 47*s.* per quarter; ditto, red, 41*s.* to 43*s.*; Norfolk, Lincolnshire, and Yorkshire red, 41*s.* to 43*s.*; of foreign wheats, Dantzic mixed was quoted at 49*s.* to 53*s.*; Königsberg, 45*s.* to 52*s.*; Rostock, 44*s.* to 47*s.*; Silesian red, 42*s.* to 44*s.*; ditto, white, 45*s.* to 48*s.*; Pomerania, Mecklenberg, and Uckermark, 43*s.* to 45*s.*; Ghirka, 41*s.* to 42*s.*; Russian hard, 39*s.* to 42*s.*; Saxonska, 42*s.* to 44*s.*; Danish and Holstein red, 40*s.* to 45*s.*; American red, 40*s.* to 42*s.*; Californian, 46*s.*; Chilian white, 45*s.*; Australian, 47*s.* to 48*s.*

In Liverpool, American white wheat brought 9*s.* 2*d.* to 9*s.* 6d. per cental; ditto, No. 1 spring, 8*s.* 9*d.* to 9*s.* 1*d.*; ditto, No. 2 spring, 8*s.* 4*d.* to 8*s.* 7*d.*; Canadian white, 9*s.* 2*d.* to 9*s.* 6*d.*; ditto, red Club, 9*s.* to 9*s.* 2*d.*; Egyptian, extra Saidi, 8*s.* to 8*s.* 3*d.*; Californian, average, 8*s.* 11*d.* to 9*s.* 1*d.*; ditto, Club, 9*s.* 3*d.* to 1*s.* 5*d.*; Oregon, 9*s.* 4*d.* to 9*s.* 6*d.*; Chilian, 8*s.* 9*d.* to 8*s.* 11*d.*

At Paris white sorts were quoted at 40*s.* to 45*s.*; red, 36*s.* to 43*s.* 4*d.* At Marseilles Danube wheat brought 38*s.* 8*d.*; Berdianski, 31*s.* 75*d.*; Ghirha, 43*s.* 6*d.*; Marianopoli, 46*s.* 5*d.* At Bordeaux the best white wheat still commanded 44*s.* At Brussels, native wheat, 47*s.*; foreign, 46*s.*; Hambro, wheat firm at 40*s.*; Berlin, 40*s.*; St. Petersburg, 42*s.* 6*d.*

Flour.—The last week of May, in Mark Lane, London, opened upon moderate supplies of English flour, with small foreign stocks, yet the trade in Norfolk brands was quite heavy, with a downward scale of prices. Foreign was sold only in small lots to retail buyers. The Paris market was firm, with an upward tendency. In Liverpool, flour was considerably neglected, though quotations remained unchanged. In Mark Lane the best town households brought 36*s.* to 40*s.* per sack of 280 pounds; best county households, 30*s.* to 31*s.*; Norfolk and Suffolk, 28*s.* to 29*s.*; American flour, 21*s.* to 24*s.* per barrel. At Liverpool, English and Irish superfines brought 35*s.* to 32*s.* per 280 pounds; ditto, extra, 32*s.* 6*d.* to 34*s.*; French, 35*s.* to 43*s.*; Trieste, 48*s.* to 60*s.*; Spanish, 38*s.* to 39*s.*; Chilian, 30*s.* 6*d.* to 32*s.* 6*d.*; Californian, 33*s.* 6*d.* to 34*s.* 6*d.*; American Western and extra State, 21*s.* to 22*s.* per barrel; Baltimore and Philadelphia, 21*s.* to 23*s.*; Ohio and extra, 22*s.* to 26*s.*; Canadian and extra, 21*s.* to 23*s.* 6*d.* At Paris, prices for consumption ranged from 31*s.* 6*d.* to 34*s.* 7*d.* per 280 pounds.

Maize.—In Mark Lane, white brought 32*s.* to 34*s.* per quarter. In Liverpool, American, 30*s.* to 34*s.* per 480 pounds; Galatz, 32*s.* 6*d.* In Paris it sold in small lots at 40*s.* to 41*s.* per quarter.

MONTHLY REPORT

OF THE

DEPARTMENT OF AGRICULTURE

FOR

JULY, 1875.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1875.

CONTENTS.

MONTHLY REPORT.

DEPARTMENT OF AGRICULTURE,
STATISTICAL DIVISION,
Washington, D. C., July, 1875.

SIR: An investigation of the rate of wages of farm-laborers in the United States, for the purpose of instituting a comparison between the wages of the present time and the rates reported in the returns of 1866 and 1869, has been undertaken, and its results are herewith communicated. There is also presented a statement of the condition of the principal crops on the 1st of July, with minor statistics of rural industry, and results of the labors of other divisions of this Department.

J. R. DODGE,
Statistician.

Hon. FREDERICK WATTS,
Commissioner.

THE RATE OF WAGES OF FARM-LABORERS IN THE UNITED STATES.

In December, 1866, and in the same month in 1869, an investigation was undertaken to show the prevailing rates paid for agricultural labor in the several States. It was known that rural wages had felt the inflatory impulse which had affected in different degrees all values, whether of actual labor or the accumulation of past labor in a thousand tangible forms. There had never been a systematic and general effort to obtain these statistics previously, but Mr. H. C. Carey, some thirty years previously, had made a careful estimate, from the best information obtainable, and had placed the average wages of the country at $9 per month with board. In the investigation of 1866, which included 1,510 statements, most of them representing counties, the average rate was $15.50 with board, showing an increase in one generation, and mainly in the last five years of the period, of 72 per cent. At the same time the average rate without board was about $26, and the average for the States employing white labor $28, or $336 per annum. At this date, according to the best authorities, the English farm-laborer was earning, including the value of all extras and allowances, $182. It was also noted, as illustrating the extent of our demand for labor, that this increased rate had been attained in the face of the immense immigration of the previous years.

The next three years witnessed a material decline in the value of farm-products, but farm-labor held its position better, as in the second investigation the average rate had only declined to $25.13 for farm-laborers

employed by the year without board, while the rate with board, $15.88, was a little in advance of the previous average, the difference representing board being $9.25 against $10.50 in 1866. Prices in the South had increased in these three years, had been well sustained in the Eastern States, but had slightly receded in the Western.

The present investigation gives evidence of a decline in the rate of wages of laborers employed by the year, far greater than that reported in 1869. The average rates for the three periods, for the several geographical divisions, are as follows:

	May, 1875.	December, 1869.	December, 1866.
Eastern States	$29 00	$32 03	$33 30
Middle States	26 98	29 15	30 07
Western States	23 25	27 01	28 91
Southern States	15 27	16 81	16 00
California	44 50	46 38	45 71

The central belt of States, on the parallel of 40°, fairly represent the most prosperous agricultural regions, and illustrate the decline in price of farm-labor during the past eight years:

	1875.	1869.	1866.
Pennsylvania	$25 89	$28 68	$29 91
Ohio	24 45	26 35	28 46
Indiana	24 20	25 42	27 71
Illinois	25 20	27 32	28 54
Iowa	24 35	28 39	28 34

Up to 1869 the demand for labor in Iowa for the opening of new farms and extension of the producing area of those already opened kept prices up to the point of 1866, while all the States eastward exhibited a decline. During the past five years, an era of overproduction and low prices in Iowa, the depreciation has been greater than any others of this list.

Perhaps a better understanding of the actual status of labor in these States may be obtained by a comparison of the average prices per month of farm-labor with board, much the larger number of farm-laborers being employed under such a contract. The prices in these States are as follows:

	1875.	1869.	1866.
Pennsylvania	$16 10	$18 05	$18 84
Ohio	16 33	16 74	18 96
Indiana	16 14	17 03	18 72
Illinois	16 87	17 69	18 72
Iowa	16 11	17 87	18 87

The uniformity of the rates of 1866 is somewhat remarkable, yet a careful examination of circumstances affecting prices will prove the consistency of the statement. If the various prosperous industries of Pennsylvania and Ohio stimulated the wages of agricultural industry, the great demand in States farther west for increasing numbers of farm-animals to make good the depletion caused by the war, and a similar cause for enlarging food-supplies, upheld the rates in the more purely agricultural States. In 1869 prices had receded, quite equally in the

grain-producing States, but much more in Ohio than in Pennsylvania, where prices were sustained by the prosperity of the iron interest and other manufacturing enterprises.

Table showing the average rate of wages of agricultural labor per month, when employed either by the year or season.

States and Territories.	1875.				1869.				1866.			
	By the year.		By the season.		By the year.		By the season.		By the year.		By the season.	
	Without board.	With board.	Without board.	With board.	Without board.	With board.	Without board.	With board.	Without board.	With board.	Without board.	With board.
Maine	$25 40	$15 94	$29 28	$20 56	$26 25	$16 50	$31 00	$21 44	$27 00	$17 44	$31 76	$23 07
New Hampshire	28 57	18 25	34 75	23 50	32 66	22 16	39 83	29 13	32 74	22 48	39 12	28 43
Vermont	29 67	19 37	32 71	21 94	32 40	21 40	39 00	27 28	32 84	21 00	37 44	25 72
Massachusetts	31 87	20 25	38 50	23 25	35 95	22 16	41 00	27 75	38 94	22 36	41 61	27 83
Rhode Island	30 00	19 00	35 00	22 50	32 25	20 00	38 00	25 50	34 40	20 50	40 00	26 33
Connecticut	28 25	18 50	36 00	23 25	33 00	20 75	38 50	25 50	34 25	21 54	29 66	28 30
New York	27 14	17 80	31 41	21 48	29 28	18 64	34 29	23 05	29 57	19 32	34 88	24 26
New Jersey	30 71	16 78	37 75	20 37	32 11	19 02	34 38	22 47	32 27	18 98	33 13	23 78
Pennsylvania	25 89	16 10	30 00	18 50	28 63	18 05	33 00	22 21	29 91	18 84	34 10	22 87
Delaware	20 33	11 67	24 50	15 33	22 00	13 00	25 00	17 50	24 93	13 25	26 25	15 25
Maryland	20 02	11 42	22 27	13 47	21 55	12 00	24 70	15 29	20 36	12 76	23 83	15 58
Virginia	14 84	9 21	16 31	11 20	15 28	9 65	17 83	12 55	14 82	9 36	17 21	12 09
North Carolina	13 46	8 82	15 17	10 67	12 76	7 91	14 98	10 05	13 46	8 15	15 18	10 00
South Carolina	12 84	8 19	14 57	10 50	11 54	7 34	13 47	9 81	12 00	7 66	14 00	9 46
Georgia	14 40	8 79	16 47	11 67	14 70	9 70	17 66	12 75	15 51	9 67	18 45	12 07
Florida	15 50	10 75	19 50	10 60	16 10	10 91	21 25	14 00	18 00	12 12	20 55	14 46
Alabama	13 60	9 40	16 75	12 05	15 19	10 52	17 57	12 70	13 40	9 80	16 38	11 00
Mississippi	16 40	11 25	19 00	13 50	17 11	11 21	20 08	16 86	16 72	11 58	22 58	16 80
Louisiana	18 40	12 20	18 75	12 53	21 37	12 62	27 08	18 46	20 50	12 42	22 25	18 34
Texas	19 50	13 37	23 17	16 57	18 83	13 21	21 16	16 97	19 00	12 72	23 73	16 76
Arkansas	20 50	13 00	23 30	18 00	25 25	16 60	27 14	18 66	24 21	15 80	29 61	19 46
Tennessee	15 20	10 00	18 40	12 53	16 81	11 00	19 52	13 95	19 00	12 58	22 00	16 61
West Virginia	20 75	13 10	23 40	16 12	21 39	13 87	25 83	17 62	25 35	16 47	29 34	21 20
Kentucky	18 12	12 00	21 31	14 85	18 84	12 57	21 34	14 89	20 23	13 65	23 80	17 06
Ohio	24 05	16 33	26 47	19 45	26 35	16 74	31 78	21 72	28 46	18 96	32 45	23 15
Michigan	28 92	18 46	32 10	22 00	31 01	20 03	34 01	24 35	31 26	20 48	34 95	24 15
Indiana	24 20	16 14	28 44	19 50	25 42	17 03	30 47	20 81	27 71	18 72	31 50	22 50
Illinois	25 20	16 87	28 70	19 45	27 32	17 69	31 04	21 28	28 54	18 72	33 09	23 30
Wisconsin	25 50	16 45	29 37	20 05	30 08	18 47	34 00	22 83	30 84	19 87	35 65	24 60
Minnesota	26 16	16 36	30 65	20 80	28 61	17 94	34 84	23 54	31 65	21 10	38 40	27 17
Iowa	24 35	16 11	27 75	19 50	28 39	17 87	33 64	22 44	28 34	18 87	33 24	23 82
Missouri	19 40	13 15	22 88	16 33	24 47	16 38	29 75	21 31	26 75	18 08	30 84	21 66
Kansas	23 20	14 65	25 80	17 15	28 96	18 38	33 46	22 75	31 03	19 81	36 40	25 46
Nebraska	24 00	14 75	28 25	18 35	33 25	19 18	38 33	25 70	38 37	24 64	46 42	31 36
California	44 50	28 60	52 20	36 00	46 38	28 69	57 08	36 25	45 71	30 35	50 00	34 39
Oregon	38 25	25 67	40 25	29 20	.....	.....	.....	.....	35 75	22 53	41 60	29 00
Nevada	.....	.....	.....	.....	.....	.....	.....	.....	75 00	60 00	85 00	70 00
Colorado	38 50	21 14	41 87	24 64	.....	.....	.....	.....	67 50	42 12	79 16	50 00
Utah	35 50	25 33	43 00	33 00	.....	.....	.....	.....	44 71	26 32	58 22	38 41
Washington	35 00	24 83	41 66	32 50	.....	.....	.....	.....	52 25	36 25	60 50	44 50
Dakota	32 50	20 50	37 33	24 50	.....	.....	.....	.....	30 20	20 00	32 00	22 00
New Mexico	22 75	14 25	23 75	15 00	.....	.....	.....	.....	25 00	16 50	30 00	25 00
Montana	45 00	30 00	56 50	41 00	.....	.....	.....	.....	.....	.....	.....	.....
Wyoming	47 50	32 50	60 50	44 75	.....	.....	.....	.....	.....	.....	.....	.....

The average price of "farm-labor, with board," in the United States, according to these tables, is $12.40 at the present time. This would make a decline of nearly 22 per cent. since 1869. A part of this difference, however, is found in the disproportion in numbers of laborers of the higher and lower classes in efficiency and money-value. The calculations are based on the numbers given respectively in the censuses of 1860 and 1870; and in the latter the slaves of the former period, who had no place in that enumeration, are included as farm-laborers, increasing the proportion of low-priced labor and consequently

reducing the average. The average price of labor, with board, in the Southern States, is $10.17; in the Western, $13.66; in the Middle, $16.81; in the Eastern, $18.58; on the Pacific coast, $28.12; in the Territories, $18.25.

Table showing the rate of wages of agricultural labor per day in transient service.

States and Territories.	1875.				1869.				1866.			
	In harvest, (without board.)	In harvest, (with board.)	Other than in harvest, (without board.)	Other than in harvest, (with board.)	In harvest, (without board.)	In harvest, (with board.)	Other than in harvest, (without board.)	Other than in harvest, (with board.)	In harvest, (without board.)	In harvest, (with board.)	Other than in harvest, (without board.)	Other than in harvest, (with board.)
Maine	$1 99	$1 49	$1 46	$1 05	$2 17	$1 65	$1 48	$1 05	$2 02	$1 56	$1 49	$1 13
New Hampshire	2 06	1 64	1 50	1 12	2 37	1 95	1 79	1 41	1 98	1 52	1 67	1 26
Vermont	2 28	1 85	1 51	1 11	2 46	2 00	1 76	1 28	2 32	1 85	1 76	1 32
Massachusetts	1 90	1 50	1 44	1 12	2 37	1 95	1 92	1 37	2 41	1 92	1 83	1 38
Rhode Island	2 00	1 50	1 62	1 18	2 37	1 75	1 73	1 18	2 23	1 71	1 83	1 33
Connecticut	2 06	1 53	1 50	1 16	3 00	2 37	1 87	1 37	2 43	1 90	1 75	1 29
New York	2 25	1 75	1 48	1 06	2 53	1 99	1 64	1 19	2 41	1 92	1 75	1 23
New Jersey	2 56	2 03	1 45	1 00	2 63	2 09	1 63	1 15	2 68	2 38	1 68	1 20
Pennsylvania	2 01	1 51	1 37	95	2 23	1 73	1 43	1 04	2 32	1 80	1 59	1 10
Delaware	1 83	1 41	1 04	70	1 87	1 50	1 30	95	2 09	1 62	1 31	94
Maryland	1 81	1 34	1 06	71	2 16	1 67	1 20	77	2 00	1 68	1 31	96
Virginia	1 48	1 21	78	51	1 48	1 13	80	55	1 46	1 21	82	57
North Carolina	1 17	1 00	72	51	1 37	1 04	74	49	1 53	1 17	72	50
South Carolina	1 17	1 01	71	55	1 15	90	70	50	1 25	93	69	45
Georgia	1 29	99	83	60	1 24	90	83	60	1 48	1 06	99	70
Florida	1 00	72	93	70	1 25	87	96	72	1 12	83	1 00	74
Alabama	1 40	1 15	75	53	1 24	95	86	61	1 27	1 04	78	55
Mississippi	1 40	1 00	1 07	80	1 56	1 27	1 10	90	1 65	1 14	1 34	89
Louisiana	1 30	1 05	1 00	74	1 54	1 13	1 04	83	1 66	1 20	1 08	70
Texas	1 52	1 20	1 14	84	1 58	1 26	1 16	84	1 65	1 32	1 31	98
Arkansas	1 50	1 25	1 10	80	1 67	1 40	1 36	1 02	2 07	1 52	1 34	88
Tennessee	1 62	1 20	95	60	2 10	1 59	1 05	68	2 01	1 54	1 15	83
West Virginia	1 55	1 20	1 05	75	1 78	1 29	1 14	79	1 78	1 31	1 31	92
Kentucky	1 79	1 46	1 03	72	1 83	1 38	1 10	77	2 10	1 70	1 21	86
Ohio	2 05	1 60	1 35	1 00	2 15	1 72	1 44	1 05	2 20	1 73	1 54	1 13
Michigan	2 50	2 00	1 55	1 10	2 76	2 25	1 66	1 17	2 62	2 14	1 78	1 30
Indiana	2 20	1 75	1 30	95	2 16	1 77	1 36	1 01	2 23	1 76	1 45	1 06
Illinois	2 20	1 83	1 37	1 01	2 34	1 94	1 50	1 13	2 41	1 91	1 62	1 21
Wisconsin	2 40	1 92	1 42	1 00	2 45	1 96	1 56	1 15	2 68	2 15	1 78	1 28
Minnesota	2 82	2 30	1 50	1 07	2 90	2 36	1 64	1 18	2 68	2 27	1 75	1 35
Iowa	2 57	2 10	1 38	1 01	2 85	2 24	1 52	1 13	2 38	1 88	1 62	1 19
Missouri	1 75	1 43	1 07	73	2 30	1 84	1 44	1 02	2 15	1 72	1 44	1 07
Kansas	1 86	1 46	1 30	90	2 08	1 63	1 56	1 12	2 31	1 82	1 65	1 19
Nebraska	2 40	1 98	1 43	1 00	2 41	2 00	1 62	1 26	2 65	2 15	1 93	1 43
California	2 50	2 00	1 84	1 30	2 82	2 04	2 13	1 50	2 56	2 06	2 26	1 72
Oregon	2 11	1 72	1 47	1 15	.....	.....	.....	.....	2 40	1 80	1 75	1 40
Nevada	.....	.....	.....	.....	.....	.....	.....	.....	3 50	3 00	3 00	2 50
Colorado	2 33	1 50	1 75	1 16	.....	.....	.....	.....	4 17	2 87	3 29	1 93
Utah	2 20	1 75	1 80	1 40	.....	.....	.....	.....	3 42	2 49	2 27	1 63
Washington	2 40	2 00	1 66	1 31	.....	.....	.....	.....	3 00	2 25	2 25	1 75
Dakota	2 37	1 90	1 62	1 08	.....	.....	.....	.....	2 50	2 00	2 00	1 50
New Mexico	1 35	90	85	50	.....	.....	.....	.....	1 50	1 12	1 00	90
Montana	3 00	2 20	2 16	1 75	.....	.....	.....	.....	.....	.....	.....	.....
Wyoming	.....	3 62	3 08	2 36	.....	.....	.....	.....	.....	.....	.....	.....

The difference between the prices paid, with and without board, represents the cost of boarding, yet many correspondents say that the usage of employment with board is so uniformly the rule that few farmers are willing to pay any material addition to the wages of those who propose to board themselves. Notwithstanding this element of irregularity, the figures of the table below are in the main quite consistent with the local circumstances affecting prices of boarding.

Table showing the average price of board per month of agricultural laborers hired by the year.

States.	1875.	1869.	1866.	States.	1875.	1869.	1866.
Maine	$9 46	$9 75	$9 56	Kentucky	$6 12	$6 21	$6 58
New Hampshire	10 32	10 50	10 76	Ohio	7 72	9 61	9 50
Vermont	10 30	11 00	11 84	Michigan	9 76	10 98	10 78
Massachusetts	11 62	13 79	16 58	Indiana	8 06	8 39	8 99
Rhode Island	11 00	12 25	13 90	Illinois	8 13	9 63	9 82
Connecticut	9 75	12 25	12 71	Wisconsin	9 05	11 61	10 97
New York	9 34	10 64	10 25	Minnesota	9 80	10 67	10 55
New Jersey	13 93	13 09	13 29	Iowa	8 24	10 52	9 47
Pennsylvania	10 39	10 63	11 07	Missouri	6 25	8 09	8 67
Delaware	8 66	9 00	11 68	Kansas	8 55	10 58	11 22
Maryland	8 60	9 55	7 60	Nebraska	9 25	14 07	13 73
Virginia	5 63	5 63	5 46	California	15 90	17 69	15 36
North Carolina	4 64	4 76	5 31	Oregon	12 58	.....	.....
South Carolina	4 05	4 20	4 34	TERRITORIES.			
Georgia	4 79	5 00	5 84				
Florida	4 75	5 19	5 88				
Alabama	4 20	4 67	3 60	Colorado	17 36	.....	.....
Mississippi	5 15	5 90	5 14	Utah	10 17	.....	.....
Louisiana	6 20	8 75	8 08	Washington	10 17	.....	.....
Texas	6 13	5 62	6 28	Dakota	12 00	.....	.....
Arkansas	7 50	8 65	8 41	New Mexico	8 50	.....	.....
Tennessee	5 20	5 81	6 42	Montana	15 00	.....	.....
West Virginia	7 65	7 52	8 88	Wyoming	15 00	.....	.....

HARVESTING AND GARNERING.

The following summary from our reports shows the leading points in the local usages in different parts of the country in harvesting and garnering grain. It will be seen that thrashing is, in most cases, done by a class of men who devote their time and capital to this business, at least during a portion of the year. Boarding the hands is a custom almost universal in all the States. The points of widest variation are found in the respective amounts of labor and motive-power furnished by the thrasher or the farmer.

In New England, according to universal custom, the thrashing-machinery is owned by professional thrashers, who itinerate from farm to farm, and thrash out the grain either for a specified sum per day or per bushel, or for a toll of the thrashed grain, ranging from a fifteenth to a tenth of the whole. The thrasher furnishes from two to four horses and two men; the farmer furnishes the other teams and labor. In several counties in Northern New England the thrasher gets from $5 to $6 per day, besides board for man and horse. The machines used in such cases usually thrash 100 bushels of wheat or 200 bushels of oats per day; hence, where the job is paid for by the bushel, wheat is charged at twice the price of oats; wheat costs from 5 to 12 cents per bushel, and oats from 4 to 7 cents. The highest cash-rates noted in New England counties is in Sagadahoc, Maine, where the thrasher receives 7 cents per bushel for oats, 8 cents for barley, and 12 cents for wheat. In some cases, the farmer hires the machine and runs it himself. Occasionally the two-horse tread-machine is used, but in general the apparatus employed embraces the latest improvements, and requires from eight to ten horses to drive it. No reports of steam-machinery in this region. In many counties the grass-crop and dairy-farming have restricted grain-raising to a very narrow area, rendering the thrashing operation so unimportant that the use of machinery would not be profitable. In Norfolk, Massachusetts, thrashing is done almost entirely with the flail. In the three southern New England States, machinery, in both thrashing and harvesting, is used to only a limited extent, on account of the small amount of grain-farming.

In the Middle States steam-power is, in many places, superseding horse-power, a circumstance which necessarily modifies the arrangements for thrashing. In such cases the thrasher sends one or two hands, an engineer, and a machine-feeder, while the farmer finds coal and water and boards the men, besides furnishing labor sufficient to take the straw from the machine and arrange it in stacks. Steam-thrashing on such terms generally costs about 5 cents per bushel for wheat, 4 cents for barley, and 3 cents for oats, besides the extra labor hired by the farmer. In Camden, New Jersey, wheat is thrashed by steam at 10 cents per bushel or by horse-power at 8 cents; in such cases, however, the thrasher furnishes a larger proportion of the labor. In Lancaster, Pennsylvania, steam-machinery thrashes 400 bushels per day at 6 cents, while in Juniata, the steam-separator delivers the grain ready for market at 5 cents per bushel. Steam-machinery is also used extensively in other counties in Pennsylvania, and in New Castle, Delaware. In a few counties the small two-horse tread-machines are used. This is generally the case where farmers use their own machinery and employ wet or winter weather in thrashing grain in their own barns. Such farmers often thrash the grain of their neighbors, tolling every tenth or twelfth bushel for their services. Where men engage as professional thrashers, they find it more profitable to invest their capital in machines of greater power and capacity. These machines require from two to six horses for their transportation from farm to farm. This horse-power is utilized in driving the machinery, the farmer supplying horses enough to make a team of six to twelve animals. The thrasher either feeds the machine himself or hires a man for this service, and another to drive the team; the farmer hires men enough to make up a gang of twelve or fifteen. The efficiency of these machines is attested by the prices charged for their use, amounting, in some counties, to $10 per day, with board for two men and two horses. Machines of inferior capacity realize about $6 per day. In some cases these machines thrash wheat at 4 cents per bushel; barley, 3 cents; oats or buckwheat, 2 cents. Where the thrasher furnishes the entire horse-power the cost is greater, rising to 10 cents for wheat and 4 cents for oats. In some counties the thrasher tolls the thrashed grain, receiving from 4½ to 8 per cent. of wheat, and nearly double of oats. Occasionally the thrasher receives from 35 to 50 cents per hundred sheaves, wheat sheaves averaging about 6 bushels of thrashed grain per hundred. There is considerable variation in the minor details, but the general usages are mostly the same. The tendency is toward the use of the latest improvements in labor-saving machinery.

Maryland is usually classed with the South Atlantic Coast States, but its agricultural character is more assimilated to the Middle States. Thrashing arrangements especially indicate the more progressive tendencies of States to the north. Steam-machinery is in growing use, and the terms of its employment are about the same as in the Middle States. Labor for thrashing is cheaper than farther north. The owner of the machine generally finds an engineer, feeder, and bagger, and receives 5 cents a bushel for thrashing wheat, or 8 cents for thrashing, separating, and delivering ready for market; the farmer pays for the coal. There is a greater variety of usage than in the Middle States in regard to the proportion of labor and motive-power furnished by the farmer and the thrasher, which occasions a different rate of cost. In Frederick County, for instance, where the farmer usually furnishes the teams and all the hands but two, the thrasher gets but three and a half cents per bushel for wheat. Where the thrasher furnishes a large proportion of the teams, he gets a larger price for thrashing. Some machines also deliver the grain more completely prepared for market,

which of course enhances the cost. In Virginia the custom of farmers owning the machines is still prevalent in many counties. In some cases a number of farmers club together for the purchase of machinery and thrash their own grain and that of neighbors not members of the association. Such machines are not apt to be of a very costly construction, or to be capable of very rapid execution. The work in such cases is postponed to rainy days or to the winter, after farm-operations are generally closed. Such a system does not favor the rapid marketing of the grain. In several counties where the class of large farmers is more numerous, each proprietor owns a machine. Such a county is Essex, where, including wear and tear of machinery, the average cost of thrashing wheat is estimated at 10 cents per bushel. In Buchanan and a few other counties the flail is still used, the thrasher getting every twelfth bushel. But the use of more effective machinery is gaining ground. In some cases thrashers contract to thrash crops by the field or acre. In others machines are hired by the day or by the bushel. Thrashing by contract would come into more general use if large farmers could afford to await their turn with the smaller ones. Occasional mention is made of steam-power, as in Clarke County, but this is unknown in the greatest portion of the grain-raising area of the State. Usages greatly vary as to the proportion of labor and motive-power furnished by the farmer and the thrasher. The latter generally uses the teams necessary to transport his machinery, and receives from 3 to 10 cents per bushel, or tolls from 5 to 10 per cent. of the thrashed grain. In some cases he gets $5 for setting up his machine, and a certain price per bushel or percentage of the grain for his share. The farmer furnishes all the help needed to take the straw from the machine and to stack it. Passing down the coast grain-raising becomes a less prominent industry. In many counties of North Carolina the wheat raised is so inconsiderable in quantity that no mention is made of thrashing. The amount of grain raised is also too small to render it profitable for farmers to run separate machines, while the principle of association in the ownership of this class of machinery is nowhere developed. Itinerant thrashers transport their machinery from farm to farm and perform this service in many counties on terms very similar to those noted in Virginia. The cost of thrashing wheat ranges from 3 to 10 cents per bushel, or from 5 to 8 per cent. of the grain thrashed. There is also the same variety of usage in regard to the amount of labor and motive-power furnished by the farmer and thrasher. From the amount of motive-power required in some counties, it is inferred that machines of a higher order are gaining ground. No case of steam-machinery is reported. Grain-raising is of still less importance in South Carolina, and the process of thrashing is comparatively rude and incomplete. In some cases large planters own the machinery and thrash at leisure. Itinerant thrashers are becoming more common. The latter generally toll every tenth or twelfth bushel. In Greenville, machines of 8 horse-power are used; the motive-power is mostly furnished by the thrasher. In Georgia the arrangements for thrashing are more progressive, and approximate the usages in Virginia and Maryland. Itinerant thrashers often furnish most of the labor and motive-power, and toll one-tenth of the thrashed grain. In some cases a party contracts to harvest and thrash the crop for one-third of its proceeds. In Dooly County the thrasher charges 20 cents per bushel, he furnishing three hands and two horses. In several counties, machines of large motive-power are used.

In the Gulf States grain-raising is too limited to give rise to any well-defined usages of thrashing. No statements of usage on this question

have been received from Florida or Louisiana, and very few from Alabama or Mississippi. In Texas a somewhat uniform custom allows one-tenth of the grain thrashed to the itinerant thrasher. In many counties in the Gulf region what little grain is raised is thrashed with the flail. In some cases the grain is thrashed by means of the driving machinery of the cotton-gin attached to the thrashing-machine.

In the southern inland States thrashing usages become more definite toward the northern sections. In Arkansas the toll of 10 per cent. of the thrashed grain is almost universal. The thrasher in all cases finds the motive-power, no steam-machinery being reported. In Tennessee, no steam-machines are reported, but the motive horse-power is always large. The toll varies from one-fifteenth to one-tenth, the grain being generally cleaned and ready for the sack. Occasionally the thrasher is paid in cash at from 6 to 10 cents per bushel. The thrasher furnishes most of the motive-power. In West Virginia and Kentucky, steam-machinery is frequently noted. Tolling the grain is less common than farther south. The cash price of thrashing ranges from 5 cents to 12½ cents per bushel, according to the completeness of the work, the number of hands hired by the thrasher, &c. In Berkeley, West Virginia, if horse-power is used, the thrasher finds one hand and all the horses but two; in the case of steam-power he hires four hands. Steam-machinery requires generally from 14 to 16 hands in addition to those managing the machine. The farmer always boards the horses and men brought by the thrasher.

North of the Ohio the usages are quite uniform, and not greatly different from those of West Virginia and Kentucky. Steam-machinery is very common in large portions of this section. In some cases these machines require a working force of seventeen to twenty men, and thrash from 400 to 800 bushels per day. The thrasher usually furnishes an engineer and feeder, with one or two other hands, and receives from 3 to 8 cents per bushel. The toll system is scarcely mentioned in all this region. The horse-machines are generally of very great power, requiring from eight to twelve horses and a large gang of men to work. The prices do not greatly differ from those of steam-machinery. In some counties it is estimated that the amount paid the thrasher is about half the total cost of the operation to the farmer. The proportion, however, varies with the amount of motive-power and labor furnished by the thrasher or the farmer. In some cases the farmer, and in others the thrasher, furnishes all the teams.

West of the Mississippi the ten-horse machine is in most general use, 6 horses being furnished by the thrasher and 4 by the farmer, though these proportions are sometimes varied. In some counties these will average 300 bushels of wheat per day, and steam-machines will turn out 700 per day. In the latter case the total cost does not exceed 11 cents per bushel; in the case of horse-machines the thrasher receives from 4 to 6 cents per bushel for wheat, while the other expenses bring the entire cost to 10 or 11 cents. The thrasher brings generally about two men with him and the farmer from seven to nine, making the average number of the gang about ten or twelve. Some large steam-machines require twenty men to supply the sheaves and take away the straw, besides three men to run the machine. In Nebraska and in some parts of Missouri and Kansas the usage is for the thrasher and farmer to furnish an equal number of horses. In only one case is there mentioned anything like a tendency to toll the thrashed grain. The smallest total cost is in Nebraska.

Passing to the Pacific coast, the increased size of machines and en-

hanced motive-power are especially noticeable. In some cases the daily task of these machines is stated at from 1,000 to 2,000 bushels of wheat per day. Steam is the motive-power in most of these cases, though eighteen or twenty horses are often used, accompanied by gangs of twenty or twenty-five men. The motive-power is generally furnished entirely by the owner of the machine, with men enough to operate it. Thrashing hands are paid higher wages than in the Eastern States; engineers receive $4 per day and other hands from $1.50 to $3; feeders and sack sewers, in Tuolumne County, get about $5. The farmer in most cases boards the hands. The price per bushel for thrashing and separating wheat ranges from 4 to 10 cents per bushel. No reports of steam-thrashing have been received from Oregon, but the machines generally require a large amount of horse-power. The price paid the thrasher is from 4 to 6 cents per bushel, but the total cost of the operation is often 10 cents, including the labor and motive-power furnished by the farmer, the boarding of hands, &c.

RECAPITULATION.—Wheat is the great money-crop of the Middle, Western, and Pacific States, and here its early marketing is often one of the pressing necessities of the farmer. This requires that the grain be thrashed and cleaned as speedily as possible; hence machinery of great efficiency and motive-power, especially steam-power, are found most economical. It will be seen, by consulting the accompanying tables, that the smallest total cost of thrashing wheat—5.8 cents per bushel—is found in California, where the most extensive machinery is used. The greatest cost—19.2 cents—is in South Carolina, where steam-machinery is unknown, and where the planters, to a great extent, thrash their own crops. In northern New England it ranges from 10 to 13 cents per bushel. In the Middle States it runs from 7.7 cents in Pennsylvania to 10.5 in New Jersey. Maryland averages 6.8 cents. The average increases to the southward, varying from 9.7 cents in Virginia to 19.2 in South Carolina. The Gulf States range from 14.1 cents in Texas to 16 cents in Mississippi. The inland Southern States from 8.7 cents in West Virginia to 12 cents in Arkansas. North of the Ohio River and west of the Mississippi no State averages more than $7\frac{1}{2}$ cents, while in Nebraska the cost averages as low as 5.8 cents. On the Pacific coast, California averages 5.8 cents and Oregon 6.4 cents. The cost of thrashing oats is generally about half the cost of wheat, ranging from 3.4 cents per bushel in Nebraska to 13.3 cents in Massachusetts. In the Middle and Western States the general average is between 4 and 5 cents.

Table showing the average prices per acre of harvesting and stacking wheat and hay, and per bushel of harvesting wheat and oats, and of husking and cribbing, and of shelling corn.

States and Territories.	1875.						
	Price per acre of harvesting and stacking wheat, including all the labor of men and horses.	Price per bushel of thrashing and separating wheat.	Price per bushel of thrashing and separating oats.	Price per bushel of husking and cribbing corn.	Price per bushel of shelling corn.	Price per acre of cutting, curing, and stacking hay.	Price per acre of cutting hay only.
Maine	$4 00	$0 12.8	$0 05.4	$0 07	$0 08.6	$3 36	$1 02
New Hampshire	5 12	10.5	07.5	07.3	03.3	4 57	1 62
Vermont	.....	13.2	04.1	04.7	04.5	2 69	83
Massachusetts	.....	.....	13.3	11	05	3 50	1 25
Rhode Island	.....	.....	.....	08	08	8 00	2 00
Connecticut	.....	.....	05.5	.....	.....	3 75	1 62
New York	3 28	08	04.4	07.1	03.2	2 66	95
New Jersey	3 90	10.5	06.1	04.6	02.6	2 75	93
Pennsylvania	3 53	07.7	04.6	07.4	03.2	3 15	96
Delaware	2 60	10	06.6	05.3	02.6	2 16	1 25
Maryland	3 05	06.8	04	05.5	02.8	2 72	1 12
Virginia	2 04	09.7	06.7	05	03.5	2 25	97
North Carolina	1 36	11.6	07.1	04.4	04.3	2 29	1 16
South Carolina	1 58	19.2	13.2	05	05	1 75	92
Georgia	2 01	14	09.3	08.5	04.2	3 21	1 64
Florida	.....	.....	07	05	04	3 00	87
Alabama	1 25	15	10	.....	.....	2 50	1 00
Mississippi	2 00	16	13.1	12.6	07	3 15	1 25
Louisiana	.....	.....	.....	09	.....	6 50	1 62
Texas	3 17	14.1	10.6	07.7	06.1	3 43	1 43
Arkansas	2 18	12	08	09	03.4	3 18	1 54
Tennessee	1 73	08.8	06.6	04.6	03.9	2 49	1 15
West Virginia	2 19	08.7	05.7	05.2	05.3	2 14	81
Kentucky	2 50	09.8	05.7	05.8	03.6	2 78	1 14
Ohio	3 02	06.8	03.9	06	03.5	2 35	75
Michigan	2 88	06.1	03.9	05.9	04.3	2 68	94
Indiana	2 61	07.2	04.4	04.9	02.7	2 30	82
Illinois	2 97	07.5	04.1	04.6	03	2 18	78
Wisconsin	3 08	06.6	04.1	05.2	03.3	2 56	81
Minnesota	3 33	07.6	04.7	07.7	04	3 12	1 00
Iowa	2 80	06.5	03.9	04.7	02.8	2 00	68
Missouri	2 51	06.1	04.8	04.9	04	2 20	81
Kansas	2 49	06.6	04.1	04.2	03	2 05	69
Nebraska	3 33	05.8	03.4	04.1	02.6	2 35	72
California	1 94	05.8	05.1	.....	.....	2 40	94
Oregon	2 14	06.4	04.4	.....	.....	2 56	90
Nevada	.....	.....	.....	.....	.....	.....	.....
Colorado	3 66	09.1	06.7	06	08	4 00	1 65
Utah	3 94	11.7	10.4	11.2	06.1	4 87	1 45
Washington	2 75	08.2	06.6	.....	.....	2 23	1 25
Dakota	2 81	08.2	03.5	06	04.4	1 45	62
New Mexico	.....	.....	.....	.....	05	6 75	4 50
Montana	4 93	07.5	06	.....	.....	4 00	1 20

In comparison with these prices those of former periods are somewhat higher. In the grain States the decline is quite uniform with that of other labor. In those States where the area in cereals is small the averages are less uniform, and perhaps less reliable, from the smaller number of returns and the greater difficulty in fixing precisely county averages.

In the West, the cost of harvesting and stacking wheat varies little in most of the States from $3 per acre, the highest being in Nebraska and Minnesota, where wheat-growing may be said to be a specialty, and where the area is practically all spring-wheat, and the period of harvesting short and competition for harvest-labor strong. Wisconsin, also a spring-wheat State, stands next in order.

The price per acre for cutting and curing hay is proportionately lower in most of the States. In the States in which machines are not in general use, as in the South, and even in New England, it is far more diffi-

cult to give the local averages, as the work is rarely contracted for at a given price per acre, but is usually done by the farmer at a cost which he may be unable to state definitely.

Table showing the average prices per acre of harvesting and stacking wheat and hay, and per bushel of husking and cribbing and of shelling corn.

States and Territories.	1869.					1866.		
	Price per acre of harvesting and stacking wheat, including all the labor of men and horses.	Price per bushel of husking and cribbing corn.	Price per bushel of shelling corn.	Price per acre of cutting, curing, and stacking hay.	Price per acre of cutting hay only.	Price per acre of harvesting and stacking wheat, including all the labor of men and horses.	Price per acre of cutting, curing, and stacking hay.	Price per acre of cutting hay only.
Maine	.....	$0 05	$0 03	$3 35	$1 22	$4 37	$3 54	$1 16
New Hampshire	.....	06. 2	04. 3	4 00	1 29	5 75	3 77	1 33
Vermont	.....	09. 6	04	2 25	87	4 33	3 48	1 19
Massachusetts	.....	.....	.....	5 81	2 04	4 72	5 19	1 75
Rhode Island	.....	10. 2	.....	6 12	1 48	6 00	6 12	1 71
Connecticut	.....	.....	.....	5 50	1 50	3 70	4 75	1 81
New York	$3 70	08. 6	04. 1	3 13	1 01	3 88	3 28	1 11
New Jersey	3 69	06. 2	03. 3	3 66	1 28	4 36	4 04	1 52
Pennsylvania	3 96	07. 5	03. 5	4 03	1 20	4 36	4 10	1 38
Delaware	.....	04	05	5 00	4 00	3 25	3 87	1 50
Maryland	3 04	11. 4	04. 6	2 97	1 13	4 21	4 83	1 57
Virginia	2 15	07, 3	05	2 28	1 09	2 07	1 98	1 05
North Carolina	1 71	05. 1	03. 1	2 46	1 16	1 84	2 67	1 59
South Carolina	1 50	03. 5	04	.....	.....	1 56	3 37	1 50
Georgia	1 72	07 1	05. 9	5 50	2 55	2 41	2 82	1 81
Florida	.....	.....	.....	.....	.....	.....	.....	.....
Alabama	1 43	06. 3	05. 9	4 33	2 09	2 17	3 66	1 75
Mississippi	.....	05. 6	06	.....	.....	2 66	3 31	1 50
Louisiana	.....	.....	.....	.....	.....	.....	.....	.....
Texas	3 04	07. 1	07. 2	4 12	1 77	2 65	4 06	1 70
Arkansas	1 70	08	03	2 75	1 70	3 00	4 37	1 96
Tennessee	2 10	05	04. 5	3 10	1 51	2 36	3 49	1 86
West Virginia	2 58	06. 3	03. 8	2 46	1 05	2 75	2 74	1 07
Kentucky	2 53	06. 6	04. 7	2 61	1 32	3 03	3 51	1 60
Ohio	3 68	06. 3	04. 1	3 23	94	3 18	3 10	1 00
Michigan	3 15	05. 2	04	3 60	1 10	3 41	3 14	1 09
Indiana	3 03	06. 5	04	2 46	94	3 33	3 09	1 07
Illinois	3 46	06	03	2 86	91	3 32	2 69	90
Wisconsin	3 16	06. 8	04. 8	2 91	94	3 28	2 73	1 05
Minnesota	3 66	08. 7	05. 4	3 33	1 10	3 33	3 34	1 26
Iowa	3 18	06. 2	03. 7	2 55	84	2 95	2 58	81
Missouri	3 74	08. 3	04. 8	2 63	93	3 59	3 25	1 12
Kansas	3 08	07. 1	03. 4	3 20	92	3 73	3 90	1 03
Nebraska	4 05	06. 9	03. 6	3 02	1 02	4 28	3 53	98
California	2 91	09	09. 5	3 29	1 50	2 76	3 00	1 25
Oregon	.....	.....	.....	.....	.....	3 75	3 00	94
Nevada	.....	.....	.....	.....	.....	.....	8 00	3 00
Colorado	.....	.....	.....	.....	.....	9 56	7 79	3 85
Utah	.....	.....	.....	.....	.....	9 32	8 91	3 37
Washington	.....	.....	.....	.....	.....	3 00	5 50	2 00
Dakota	.....	.....	.....	.....	.....	2 50	4 00	1 50
New Mexico	.....	.....	.....	.....	.....	6 50	.....	.....
Montana	.....	.....	.....	.....	.....	.....	.....	.....

USAGES IN SHARE-FARMING.

The following is a brief abstract from the notes of our correspondents in regard to the usages prevalent in different States on the subject of working land on shares:

In the New England States the element of taxation is of special importance, and landlords, as far as possible, secure this as one of the points in the contract. The tenant in most cases pays half the taxes, seed, and repairs, and receives half the crops. In some cases he furnishes half the working-stock. In other cases he is entitled to half the growth of young stock, which is sometimes commuted in cash, as when

he is allowed $20 per cow. Different usages prevail among the dairy districts, the owner in some cases furnishing the cows as well as the land. In some neighborhoods the land is rented for cash at the rate of 6 per cent. ad valorem. On hay-farms in New Hampshire the owner of the land often receives two-thirds of the crop, on account of the smaller amount of labor required by grass-crops. In some parts of Connecticut the tenant receives the value of his share of the crop in money, but generally he is left to market his own produce.

In the Middle States the same usages prevail in large sections. The tendency to share equally in the proceeds and expenses of agriculture is more generally coupled with the requirement to furnish, in whole or part, the working-stock, tools, seed, and sometimes the fertilizers used. In some cases distinction is made between plowed crops and hay and fruit; the landlord gets one third of the former and half the latter. Tenants are generally allowed to keep their own cattle and sheep, feeding them from their own share of the crops. When the tenant is unable to stock the farm or to furnish implements, he gets but a third of the produce in some counties. The stipulation in regard to taxes is seldom noted in this section. On the fruit-farms of Delaware fruit is sometimes reserved entirely for the landlord. In this State express stipulations sometimes require the landlord to furnish lime or other fertilizers, which, however, the tenant must apply to the land.

In passing down the Atlantic coast, a tendency is observable to arrange the share problem into three distinct elements, allowing a third of the product as the rental of the bare land, a third to pay for the use of stock, tools, fertilizers, &c., and the remaining third to compensate the labor of production. The party furnishing all the machinery, stock, &c., thus enjoys two-thirds of the proceeds. Yet this usage is subject to local variation. In dividing the corn-crop, for instance, the tenant gets half the grain and only a third of the fodder. A correspondent in Maryland objects to the whole share-system, as deteriorating the land, as the landlords are often compelled to employ incompetent tenant-farmers. In some places in Virginia the bare land is first allowed one-fourth of the proceeds as rent, and the remainder is divided between the landlord and tenant in the proportion in which they have each contributed to stock and furnish the farm. Some landlords demand from one-third to two-fifths of the grain-crops and one-half the hay, even though the tenant may have stocked the farm. In other cases the landlord exacts half the profits of cattle. Different classes of land also receive different amounts of rent. For instance, in North Carolina, valley-land rents for one-half, while hill-sides bring only a third of the crop. Again, a distinction is made in regard to different crops; land in corn yields a third of the produce to the landlord, while in cotton he obtains but one-fourth. Where the landlord furnishes the whole or part of the stock, tools, &c., his share is proportionally enlarged. In some parts of South Carolina cotton-lands are rented for a specific amount of cotton, varying from 60 to 150 pounds per acre. In renting on shares to freedmen, sometimes the landlord furnishes rations for the tenant himself and one mule, as well as stock and tools, in which case he is entitled to two-thirds of the crop; without the rations, he gets but half. In the rice districts of Georgia land is sometimes rented for 7 pounds of rice per acre.

Passing to the Gulf States we find share-farming comparatively little practiced in Florida, but where it is recognized, it is generally on terms very similar to what are stated for the Carolinas and Georgia. The same distinction between corn and cotton, with occasional leases, payable in specific amounts of cotton per acre—from 80 to 100 pounds.

In renting to freedmen the idea is to make him assume, as far as possible, the obligation of providing his own rations. In Alabama, some counties discourage the share-system, and seek to bring agriculture, as far as possible, to the wages standard, but this is not yet found practicable. The tenant-freedman is favored with a larger share of the proceeds and a more lenient treatment than the tenant-farmers of the North. Yet he often falls in debt to his landlord and abandons his contract. Often both parties are more or less to blame in such cases. The blacksmith's account is frequently a part of the settlement, and taken into consideration. Generally, the freedman furnishing only labor is allowed from two-fifths to half the proceeds of the crop. Other tenants, able to furnish stock and tools, obtain leases in which they are taxed but a third of the grain-crops and a fourth of the cotton. In some counties of Mississippi the share-system is increasing. The usual terms of lease are about the same as in the cotton States generally. In some cases the rental is for 40 to 100 pounds of lint-cotton per acre. Freedmen being destitute of stock and tools, as a general thing, these are provided as well as rations in some cases in which the tenant gets but a third of the crops. A distinction is made sometimes between sharers and renters. The former receive a certain portion of the crop; the latter pay a specific rent per acre in cotton or corn. There is in many counties a growing dissatisfaction with the share-system, and hence there is a tendency to treat tenants on the basis of renters rather than sharers. In Louisiana, the public mind is becoming unfavorable to the share-system, and on the sugar-estates it is being abandoned. It is the policy to change it to the rent-system as far as possible. The same difficulties are experienced here as in the other cotton States in the inability of freedmen to stock and furnish their farms. In rice-culture the owner furnishes the water in flumes and receives a third of the crop; if he furnishes the seed, &c., he receives one-half. In many instances the land is rented for $2 to $10 per acre, but the share-system is still made an unwelcome necessity by the poverty both of planters and freedmen.

In Texas the same general principles are noticeable. A tenant furnishing his stock, implements, &c., pays one-third of his corn and one-fourth of his cotton crop, but if the landlord furnish those necessaries he is entitled to half the produce. The share-system is universal in many counties, but the popular feeling is against it. Efforts are made to change it for a specific rent, or to supersede it by hired labor.

In the cotton counties of Arkansas and Tennessee, the same rule prevails as in other portions of the cotton States. Land without stock or implements is rented for a third of the grain and a fourth of the cotton crop; but the quality of the land sometimes varies this rule; rich river-bottoms return one-half the produce for the land alone. If the owner furnish stock, tools, and seed, he gets from half to two-thirds of the crops. The effort to supersede the share-system by substituting hired labor is resisted by the inveterate prejudices of the freedmen, who desire to be master of their own time, and hence prefer the share-contract system, which leaves them at their own disposal. In a few cases land is rented for a specific price per acre either in money or produce. In the sections of the inland Southern States outside of the cotton region, bare land rents at one-third to one-half its produce according to its location and quality, but if the landlord furnishes and stocks the farm, his portion is from one-half to two-thirds of the crop. In the tobacco counties of Kentucky, the landlord frequently claims half the crop as a consideration for the use of land, and in some localities he is entitled to half the wheat-crop.

North of the Ohio River the proceeds of cultivation are divided with reference to the three elements, land, stock, &c., and labor, but not always in equal proportions. The land draws from a third to two-fifths; in some cases hay or other crops, requiring a smaller amount of labor, or where already seeded, pay a rent of one-half. Where the landlord stocks the farm and furnishes seed and tools, his portion varies from one-half to two-thirds of the crop. In some older counties in Ohio and Indiana land rents at $3 to $10 per acre. The cash-system is also becoming common in parts of Illinois. Our returns from this region seldom notice the matter of repairs or taxes. When the corn is divided in the field, the landlord often gets half, but if in the granary, after shelling, he is content with one-third. In some cases, in Wisconsin, it is noted that the landlord and tenant divide the expense of thrashing the grain, but generally it is understood that the landlord receives his portion of the crop ready for market.

The usages of the region just described, in regard to share-farming, are reproduced in the States west of the Mississippi River with only minor and local variations. Occasionally there is a stipulation that the tenant shall keep up the fence-repairs, which seems to betray a New England origin. In older-settled districts lands rent for a specific sum per acre in money.

On the Pacific coast the practice of renting land for money is more common than in the Eastern States; in California the rents vary from $1 to $10 per acre. Where share-farming exists the owner seldom gets over a fourth of the crop for the bare land. The grain is delivered to the landlord in sacks ready for shipment. In Oregon the land generally nets to its owner about a third of its produce.

DIGEST OF CROP-RETURNS.

CORN.

Our returns show an increase in the acreage planted of about 8 per cent. over last year. In New England there is a decline of about 1½ per cent., and on the Pacific coast of about 1 per cent.; but all the great corn-growing regions show an increased breadth planted. The Middle States have increased 2 per cent.; the South Atlantic coast States, 3 per cent.; the Gulf States, 10 per cent.; the Southern inland States, 12 per cent.; the States north of the Ohio River, 7 per cent.; and the States west of the Mississippi River, 14 per cent.

The condition of the crop is about 96 per cent. of an average. New England is about 10 per cent. below average. The planting season was late and not very favorable. Cut-worms caused replanting in many places.

The Middle States are about 7 per cent. below average. Complaints of late frost are frequent in this region, while the late rains of the season in some counties, drought in others, and insect injuries in others, are cited as reasons for the reduced local condition. The general feeling, however, was one of hopefulness of improvement, as the weather had become more favorable.

The South Atlantic States mostly approximated an average condition—Virginia, 95, showing the minimum. The whole section was but

3 per cent. below average, Maryland and South Carolina being 99. The condition of the crop was somewhat backward, but improving. Drought is stated in a few localities. Cut-worms and chinches were also troublesome in isolated places.

All the Gulf States were full average, or above, except Florida, 91, and Alabama, 98. Mississippi, 112, presents the maximum condition of the whole country. In Florida storms in some counties and drought in others injured the crop. Drill-worms are noted in Madison. Drought is reported in several counties in Alabama. In Clarke grasshoppers were injurious on swamp-lands. The general condition was but little below average, good culture generally compensating the damages of drought. A general improvement of cultivation is noted in Mississippi. Louisiana reports an unusually fine growing season. Texas, in spite of local drought and a few cases of insect injuries, is full average.

The inland Southern States show a very uniform fine condition, owing to favorable conditions of growth. In some counties the rain had been too copious to admit of thorough culture, amounting in Owsley, Kentucky, to destructive floods. Arkansas, Tennessee, and Kentucky were 9 per cent., and West Virginia 5 per cent. above average.

North of the Ohio River the crop was 8 per cent. below average, ranging from 95 in Ohio to 82 in Wisconsin. Late frosts in some of the northern counties greatly injured the young plants, while the cold, late spring retarded planting. In some counties excess of rain had prevented cultivation, and left the fields in a grassy condition.

West of the Mississippi River the crop is about 6 per cent. below average on the whole; Missouri is 3 per cent. above, the other States ranging down to 84 in Nebraska. The tone of remark in Minnesota is somewhat gloomy; the cold, backward spring and late frosts and hail-storms being matters of complaint. In Iowa and Missouri the prospect is more cheerful; but there are frequent complaints of excessive rains preventing cultivation, and of chinches and grasshoppers, which compelled extensive replanting. The latter class of complaints were also rife in Kansas and Nebraska, but the replanted crops were generally promising.

The crop was somewhat depressed in condition on the Pacific coast, but there was considerable improvement after late rains.

Our few reports from the Territories do not foreshadow a very satisfactory crop.

MAINE.—*Penobscot:* Cool, but crops look well; some frost in lowlands. *Androscoggin:* Small, but looks well. *Piscataquis:* Season backward. *Cumberland:* Short and backward. *York:* Up to time and of good color.

NEW HAMPSHIRE.—*Hillsborough:* Backward, but looks well. *Rockingham:* Sod-corn badly eaten by the grub-worm.

VERMONT.—*Franklin:* Damaged by cut-worms. *Rutland:* Late, but promising. *Windsor:* Injured some by worms. *Caledonia:* Increased acreage; this crop had been largely abandoned but is receiving more attention. *Addison:* Spring unusually favorable for seeding; condition fair.

MASSACHUSETTS.—*Plymouth:* Looks well.

CONNECTICUT.—*New London:* Late, and injured by cut-worms.

NEW YORK.—*Oneida:* Injured by frost. *Steuben:* Backward. *Madison:* In low places injured by frost. *Columbia:* Backward and ordinary. *Chenango:* Injured by frost, but repaired by subsequent warm rains. *Schoharie:* Fine. *Wayne:* Injured by worms. *Saratoga:* Warm showers redeemed the damage caused by frost; some injury by cut-worms. *Warren:* Rather cool. *Wyoming:* Injured by cut-worms. *Dutchess:* Injured by cut-worms 10 per cent. *Genesee:* Late and injured by cut-worms. *Jefferson:* More promising. *Orange:* Poor start; drought and grubs. *Ontario:* Improved by late rains. *Seneca:* Increased acreage from the winter-killing of clover. *Erie:* Backward but coming up.

NEW JERSEY.—*Atlantic:* Fine growing rains. *Warren:* Looks well in spite of

drought. *Burlington:* Coming forward. *Mercer:* Fine rains have brought up the crops to average.

PENNSYLVANIA.—*Northampton:* Late and small. *Cambria:* Improving during ten days past. *Westmoreland:* Backward, and injured by cut-worms. *Bucks:* Improved by late rains. *Columbia:* Doing well, but two weeks late. *Armstrong:* Largest crop ever planted, and growing fast. *Clinton:* Well set, but backward. *Lancaster:* Irregular, but growing finely. *Butler:* Fine. *Montgomery:* Looks well in spite of drought. *Elk:* Frost-killed to the ground. *Indiana:* Doing finely; cut-worms in a few places. *Lycoming:* Very late, but recent rains and fine weather have done wonders; crop fine on bottoms but short on uplands. *Lawrence:* Backward, but improved by late fine weather. *Washington:* Suffered from cut-worms and wire-worms, but the replanted crop is doing well. *Dauphin:* Injured by wire-worms. *Sullivan:* Cut down by frost.

DELAWARE.—*Sussex:* Favorable weather.

MARYLAND.—*Caroline:* Injured by cut-worms. *Worcester:* Very fair, but backward. *Frederick:* Looks well. *Baltimore:* Fine condition and culture, with copious rains and fine weather. *Dorchester:* Looks well, but a little backward. *Harford:* Looks remarkably well; complaints of cut-worms. *Montgomery:* Cut-worms made stands poor. *Wicomico:* Grain-prospects excellent. *Washington:* Doing finely. *Cecil:* Greatly benefited by late rains.

VIRGINIA.—*Powhatan:* Shortened by drought; no rain from April 26 to June 1. *Spottsylvania:* Enlarged area, and improved stand and growth. *Stafford:* Looks well. *Greenville:* In many cases corn was replanted two or three times, yet the stand is poor; cut-worms. *Halifax:* Late, but much improved; good color where not infested with chinches. *King George:* Promising. *Charles City:* Very promising on the river-bottoms, but poor on uplands. *Washington:* Injured by cold; insects. *Augusta:* Backward; cold and drought. *Highland:* Promising. *Chesterfield:* Large crop and looks well. *Nansemond:* Escaped drought better than other crops. *Prince George:* Small but healthy. *Northampton:* Promising. *Dinwiddie:* Full crop planted. *Mecklenburgh:* Backward.

NORTH CAROLINA.—*Mecklenburgh:* Fine. *Chowan:* Three weeks late. *Pamlico:* Acreage increased; promising. *Beaufort:* Later than last year, but a better stand; condition good. *Anson:* Bottom crops injured by floods; upland crops promising. *Perquimans:* Good prospect. *Franklin:* Backward, but promising. *Wilson:* Backward, but promising. *Caswell:* Average yield; quality very good. *Alamance:* Backward. *Davidson:* Late, but growing well. *Yadkin:* Cut-worms; crop backward and stand not good. *Carteret:* "Adams Early" and "Sugar," from the Department, doing finely; well suited to this region. *Greene:* Splendid. *Hertford:* Greatly shortened by drought. *Haywood:* Bud-worms on bottom crops. *Onslow:* Small for the time of year. *Polk:* Unusually late and small, but well worked and of good color.

SOUTH CAROLINA.—*Colleton:* Had to be replanted, but is now promising. *Beaufort:* Fine weather; crop promising. *Orangeburgh:* Irregular. *Darlington:* Later than last year, but doing well. *Newberry:* Promising. *Richland:* Late; stand poor; drought. *Georgetown:* Doing well. *Spartanburgh:* Small, but good and well cultivated. *Union:* Backward, but coming forward. *Lexington:* Generally good; early plantings partly injured by late frosts. *Edgefield:* Injured in some localities by worms.

GEORGIA.—*Fannin:* Destroyed by cut-worms on lowlands; impossible to get a stand. *Lumpkin:* Small, but promising. *Worth:* No rain in six weeks. *Troup:* Not so tall as usual, but of fine color. *Schley:* Now silking and tasseling. *Pickens:* Smaller than usual, but in better cultivation and condition. *Bullock:* Rather dry. *Dooley:* Promising. *Muscogee:* Drought; corn small and tasseling low. *Richmond:* Above average, especially on sandy soils. *McDuffie:* Will produce 90 per cent. of home consumption if the good season lasts fifteen days longer. *Gwinnett:* Fine condition and well worked in May. *Columbia:* Good tillage and seasonable rain gave the crop a good start. *Hart:* Acreage increased; backward but doing well. *Butts:* Fine. *Terrell:* Small; drought. *Appling:* Backward, but promising. *Banks:* Clean and well worked. *Milton:* Improved by late rains. *Madison:* Late, and poor stands. *Oglethorpe:* Backward. *Pulaski:* Excellent stands of late corn. *Upson:* Doing well; season fine. *Walker:* Late, and not so well worked as usual. *Cobb:* Suffering for rain. *Lincoln:* Great improvement. *Twiggs:* Tasseling lower than ever before known.

FLORIDA.—*Madison:* Doing finely; somewhat injured by drill-worm. *Jackson:* Drought. *Jefferson:* Injured by wind and hail. *Wakulla:* Needs rain, which has just set in. *Hamilton:* Shortened by drought. *Gadsden:* Stalks short but grain good. *Leon:* Poor culture in some places, drought in others. *Putnam:* Fine.

ALABAMA.—*Laurens:* Injured by drought. *Saint Clair:* Promising. *Clarke:* Injured by drought; grasshoppers destructive on stiff swamp-lands. *Macon:* Backward. *Crenshaw:* Drought. *Montgomery:* Well worked, but slightly dwarfed by drought. *Calhoun:* Fine. *DeKalb:* Backward but healthy and well cultivated. *Dallas:* Deteriorated from drought. *Marshall:* Looks well. *Perry:* Higher average than for ten years. *Lawrence:* Late, but growing finely. *Monroe:* Injured by drought. *Pike:*

Fine growing season, overcoming injury of late drought. *Limestone:* Late, but very promising.

MISSISSIPPI.—*Amite:* Increased acreage, better culture, and more abundant promise. *Pike:* Flourishing, but needs rain. *Newton:* Increased acreage and crops flourishing. *Grenada:* Prospect good. *Rankin:* Late showers have saved the crop. *La Fayette:* Very promising. *Washington:* Fine. *Franklin:* Early plantings injured by drought; promising on new bottom-lands. *Kemper:* Healthy and growing; increased acreage. *Lowndes:* Good. *Lincoln:* Better cultivated and more promising than for years. *Lee:* Never more promising. *Madison:* Well worked; another rain will make the best crop since the war. *Hinds:* Prospects flattering. *Jefferson:* Looking well. *Covington:* Kentucky corn doing well. *Smith:* Average.

LOUISIANA.—*Morehouse:* Later than usual, but in fine condition; one more rain will make the crop. *Franklin:* Damaged by drought. *East Feliciana:* Suffering for rain in some places. *Tensas:* Doing well. *Washington:* Unusually fine. *Madison:* Increased acreage; condition better than last year; fine rains. *Richland:* Doing well; fine rains. *Cameron:* Too dry. *Jackson:* Prospect of the largest crop for years. *Caldwell:* Old corn not so good as formerly.

TEXAS.—*Anderson:* Unusually good condition, in spite of drought. *Hamilton:* Acreage increased; crop late, but improving. *Cherokee:* The Pennsylvania white corn retains its superiority, and is exceptionally valuable; it is now in the roasting-ear state, and we are about out of corn. *Dallas:* Another rain will secure a bountiful crop. *Washington:* Crop heavy; much old corn on hand. *Upshur:* Average condition better than last year. *Henderson:* Very fine, but needs rain. *Burleson:* In roasting-ear, but promising a fine yield. *Coryell:* One more rain will make the crop; average promise 10 per cent. greater than ever before; grain full and large. *Collin:* Never more promising; only one more rain needed. *Gonzales:* Ruined beyond redemption by drought on some farms. *Kendall:* Prospect of an immense yield. *Rusk:* Looks well, but on high lands needs rain. *Williamson:* Fit for the table; crop full average, and better than last year. *Houston:* Injured by chinches in some parts, but the general prospect is better than for many years. *Titus:* Poor stand, through late, cold spring, but good cultivation makes it look well. *Somerville:* Average and condition 25 per cent. in advance of last year. *Grayson:* Drought. *Navarro:* Materially injured, especially late plantings. *Marion:* Cut off by drought. *Lampasas:* Badly needs rain. *Austin:* Disastrous drought. *Blanco:* Drought cutting down the crop. *Bosque:* Looks fine, but suffering for rain. *Cooke:* Suffering for rain. *Fayette:* Suffering for rain. *Gillespie:* Needs rain. *Hunt:* Drought. *Waller:* Injured by drought. *Smith:* Injured by drought. *Matagorda:* Suffering forrain.

ARKANSAS.—*Garland:* Two rains more, and we will have the heaviest crop ever raised here. *Prairie:* Looks well, but needs rain. *Baxter:* Looks exceedingly well. *Bradley:* Doing well. *Dorsey:* Looks lovely. *Franklin:* Very backward. *Saint Francis:* Damaged by drought; early sowings will be very short. *Washington:* Backward. *Crawford:* Badly needs rain. *Columbia:* Late, but well worked. *Fulton:* Growing fast. *Izard:* Fine growing rains. *Pope:* Promising. *Marion:* Very flattering.

TENNESSEE.—*Carter:* Backward through drought, but looks well now. *Greene:* Backward. *Monroe:* Unusually small, through drought. *Hawkins:* Growing finely, and promising an average yield. *Coffee:* Never more promising. *Houston:* Extraordinary. *Johnson:* Late rains have been very improving. *Sequatchie:* Fine. *Wilson:* Very promising. *Gibson:* Fine. *Jackson:* Looks well; too rainy to work it fully. *Loudon:* Fine. *Trousdale:* Never better. *Williamson:* Looks well, though poorly cultivated. *Dickson:* Season propitious. *Hancock:* Never better.

WEST VIRGINIA.—*Raleigh:* Promising. *Tucker:* Looks well. *Braxton:* Increased acreage, and average condition. *Brooke:* Has been well tended; fields unusually free from weeds; crop promising. *Cabell:* Larger breadth planted; looks well. *Marion:* Corn growing fast. *Pocahontas:* Backward on account of late spring. *Wood:* Waist high, and growing finely on bottom-lands. *Pendleton:* Very promising. *Mercer:* Not equal to last year, but improving. *Monroe:* Looks well, although too wet in June. *Preston:* Doing well, and promises a bountiful yield. *Harrison:* Promising. *Mason:* At this season never looked better. The growth of the last few weeks has been wonderful.

KENTUCKY.—*Mercer:* Growing finely. *Shelby:* Low, but of good color and growing finely. *Adair:* Looks well; better grown than usual, but very much in the weeds. *Lincoln:* Not forward, but a good stand and growing finely. *Russell:* Prospect very fine, acreage 25 per cent. more than last year. *Pendleton:* Promising; season fine. *Metcalfe:* In the weeds. *Cumberland:* Looks well, but is being damaged by continued rain. *Owsley:* Looked well until the 26th of June; has since been washed by heavy, flooding rains.

OHIO.—*Trumbull:* Not doing well, on account of cold nights. *Williams:* Doing very well. *Morrow:* Increased acreage; promises a heavy crop. *Perry:* Weather favorable; growing rapidly. *Erie:* Large breadth; good stand; growing rapidly, but late. *Coshocton:* Good. *Jackson:* Promises the largest crop ever raised here. *Mercer:*

Planted late; recent and continued rains have injured it very much. *Marion:* In some places almost drowned and very weedy. *Harrison:* Looks well. *Hancock:* Badly injured by wet weather. *Geauga:* Mostly planted in June, but doing well. *Fairfield:* A wet June has prevented cultivation, and promoted weeds. *Delaware:* Increased acreage; good stand, good color, large growth, and a good prospect for a large crop. *Van Wert:* Materially damaged by rain; a large area not planted on account of rain. *Henry:* Stands well on river-bottoms; on flat land weak and yellow. *Athens:* Late, but of good color; very clean and promising.

MICHIGAN.—*Branch:* Stands good, but suffering from too much rain on timber-lands. *Hillsdale:* Rather too wet for corn. *Van Buren:* Cool nights have retarded the growth of corn; many fields look yellow, but in the main is doing well. *Tuscola:* Later than usual, but doing finely now. *Lake:* Damaged by frost in June. *Livingston:* Never better. *Shiawassee:* Late, but good condition. *Oakland:* The leading crop, both in acreage and condition.

INDIANA.—*Jennings:* Very fine. *Rush:* Drilled in this county; too wet to cultivate it; weeds have taken possession, which will probably set many against drilled corn. *Elkhart:* Late, but good. *Franklin:* Growing finely; more foul than usual, but prospect of large crop. *Madison:* Looks well on high land; a great deal of that planted has been drowned out. *Perry:* Fine prospect. *Decatur:* Doing well, but too wet to properly cultivate it. *Warren:* Too much rain; weeds have the advantage. *Dubois:* Condition good; increased acreage. *Shelby:* Injured by heavy rain. *Whitley:* Suffering for cultivation; too much rain. *Washington:* Looks splendid on upland; bottom-lands not so well; too wet. *Pike:* Small, but looking well. *Noble:* Planted late; weather has not been favorable, but corn is now doing well. *Martin:* Foul from continued rains, preventing cultivation. *Jasper:* Weather unfavorable; too cold and wet. *Hendricks:* On undrained land suffering from continued rain. *Crawford:* In healthy condition and growing rapidly. *Cass:* Stand good, and coming on finely, but late. *Scott:* Damaged by floods on bottom-lands. *Tippecanoe:* Backward on account of excessive rains, but now fully up to an average. *Hamilton:* Too wet. Has not been cultivated properly on that account, and wheat-harvest is now here. *Brown:* In flat lands weedy and of bad color; too wet for cultivation.

ILLINOIS.—*Pike:* Corn small; stand medium; very weedy from wet weather. *Edwards:* Condition poor and late; seed supposed to be imperfect; fully one-third did not come up; constant rain has given the weeds a start. *Stephenson:* Backward for the season. Weather too cool and wet, but the stand is good, and prospect now fair. *Clark:* Planted late; an unfavorable time to cultivate; much of it small and weedy. *Madison:* At least ten days late, and suffering from protracted rains. *Menard:* Suffering from too much rain, and very foul with weeds and fox-tail grass. *Vermillion:* Growing luxuriantly, but too wet for cultivation; grass will likely shorten the crop. *De Kalb:* Hardly an average, but promises well; an excellent stand. *Jasper:* Very foul; great trouble from wet weather. *White:* Not promising; hundreds of acres drowned, and equally as much failed to be planted. *Saint Clair:* On low and undrained land it is beyond saving, on account of wet weather; looks well on high land. *Macon:* Growing very fast, but wet and weedy. *Jersey:* Doing very well, and will make the largest crop raised in this county for a number of years. *Iroquois:* Though not forward, is a good, even stand, and has been well cultivated. The land was never so well pulverized, and the prospect is promising. *De Witt:* Much of the crop in low land will be an entire failure, and weeds are doing great injury, to some even on high lands. *Boone:* Increased acreage; late and growing slowly. *Livingston:* Increased acreage and average condition. *Mason:* Backward; grassy in low ground. *Montgomery:* The prospect was never better. *Massac:* Two weeks later than usual, and the season unfavorable. *Piatt:* Wet weather is against the corn-crop; it is getting quite foul.

WISCONSIN.—*Waupaca:* A poor season for corn; not yet three inches high; cold and wet. *Washington:* Cold weather caused late planting, and grub-worms the replanting of about one-fourth of the crop. *Trempealeau:* Not promising. *Sauk:* Very backward. *Juneau:* Backward and puny. *Vernon:* Greatly retarded by the lateness of the season. *Columbia:* Too wet to cultivate. *Calumet:* Behind its season. *Walworth:* Backward; corn never smaller on July 1. *Green:* Never better. *Door:* Injured by frost on the 11th and 12th of June. *Saint Croix:* Not enough usually raised for use; very unpromising this year. *Crawford:* Doing well, and farmers busy cultivating it.

MINNESOTA.—*Waseca:* One-fourth more planted than usual, owing to the low price of wheat. *Goodhue:* Unfavorable for corn; season wet and cold. *Wright:* Very backward. *Steele:* Backward and unpromising, but has been well tended. *Isanti:* The extreme cold spring has retarded its growth. *Winona:* Stand generally good, but condition below average. Here corn is usually made in July and August, and should they be favorable, will expect an average crop. *Mower:* Will not exceed a half crop in this county. *Sherburne:* Small and backward, but of good color. *Faribault:* Continued wet weather has prevented proper cultivation. *Todd:* Badly hurt by hail-storm and cold weather. *Cottonwood:* Not good; spring too cold. *Chippewa:* Poor, on

account of cool weather. *Sibley:* An increase in corn, on account of destruction of other grains by grasshoppers, but it is late.

IOWA.—*Crawford:* Doing finely, but much of it late planted and short. *Franklin:* Ground too wet to properly cultivate. *Lucas:* Very wet; cultivated little, but growing well. *Greene:* Excess of rain and want of cultivation. *Cass:* In some places the stand is poor, owing to bad seed and cold weather, but the late warm rains are bringing it forward rapidly. *Story:* Rains and overflow have injured the corn-crop. *Black Hawk:* Foul and very backward; acreage very large. *Lee:* In the weeds, and harvest nearly at hand. A week or ten days of favorable weather will make a great improvement. *Poweshiek:* Not promising; uneven stand, and full of weeds. *Marion:* Greatly in need of cultivation, which it cannot receive until the ground dries. *Mahaska:* In a critical condition from rain; cannot be cultivated. *Howard:* Not very promising, except on high and dry situations. *Harrison:* Acreage not so great as last year; average condition. *Hardin:* Foul; suffering from an excess of rain and want of cultivation. *Floyd:* Not quite usual size, but, where well worked, of good color; some too wet to cultivate, consequently weedy. *Fayette:* Small, but a fair stand. *Decatur:* Season wet and corn weedy. *Clinton:* Somewhat backward, but generally clean and in growing condition. *Allamakee:* Backward. *Tama:* The most discouraging prospect ever known in the county; very wet, and weeds and grass, in many fields, outgrowing the corn. *Jones:* Weather not favorable to cultivate, and weeds growing rapidly. *Cerro Gordo:* Getting quite weedy. *Madison:* Condition below an average; much had to be replanted and is very late; rain has prevented the necessary cultivation. *Buena Vista:* Getting weedy, and, on account of very wet weather, not promising. *Cherokee:* Rather too wet for corn. *Hancock:* A good stand, but does not grow; too wet. *Lyons:* Too wet to cultivate properly. *Monona:* Late, compared with last year; suffered from heavy rains. *Webster:* Very wet for past three weeks; nothing done, in the way of working corn, for ten days. *Grundy:* Cultivation has ceased on account of rain; prospect discouraging. *Shelby:* About 20 per cent. of the seed planted failed to germinate, and fields had to be replanted; the last planting is rapidly gaining on the first.

MISSOURI.—*Crawford:* Wettest season ever known here; corn badly injured. *Greene:* Crop backward, but clean and in good order. *Gasconade:* Injured by chinches, especially on low lands. *Chariton:* Acreage increased by plowing up the wheat area; well cultivated; fine growing season. *Franklin:* Good stand and growing fast. *Jefferson:* Flooding rains. *Cass:* Two-thirds of the crop twice replanted; a good season will still bring a fair crop. *De Kalb:* Grasshoppers badly injured a very promising crop; they did not touch corn on the north side of timber or on a north slope; they came from the south and lighted on a south slope. *Carter:* Very promising. *Harrison:* A little too much rain. *Howard:* Crop very promising. *Daviess:* Damaged by grasshoppers. *Johnson:* Replanted for winter fodder; crops swept by grasshoppers. *Lincoln:* Late, but promising. *Maries:* Late, but good. *Vernon:* Hundreds of acres of grasshoppered corn being replanted; new crop in fine condition and growing fast. *Stone:* Late, but looking well. *Saint Francis:* Heavy, washing rains made the crop late. *Perry:* Never better; plenty of rain. *Jasper:* Late, but very promising. *Cole:* Splendid. *Clay:* Swept by grasshoppers. *Carroll:* Splendid crop, well advanced, of clean culture and vigorous growth. *Shelby:* Fine crop; injured by late heavy rains, preventing its thorough cultivation. *Grundy:* Looks well on uplands, but injured by heavy rains on the bottoms. *Newton:* Enlarged acreage; looks fine. *Knox:* Injured by flooding rains. *Benton:* Season favorable. *Schuyler:* Season backward and cold; crops late.

KANSAS.—*Smith:* Looking very well. *Doniphan:* Corn replanted, in some cases, four times; some prospect of a good crop. *Neosho:* Has come on finely since the grasshoppers left; fine growing weather. *Franklin:* Large acreage sown since the grasshoppers left; a few of the latter, mostly having the red parasite attached, are injuring corn. *Washington:* Prospect for a large yield. *Wyandotte:* Largely replanted, and subsequently injured by heavy rains and grasshoppers. *Woodson:* Great increase in acreage; Liberty Township has 20,000 acres in corn, and the poorest is above average in condition; replanted corn small, but looks well. *Sumner:* Prospect splendid. *Shawnee:* Backward, but promising. *Nemaha:* Increased acreage due to grasshopper raid. *Labette:* Promises better than for two years back. *Jackson:* Replanted, in some cases, three or four times, on account of grasshopper-ravages; farms on bottom land and in timber belts, suffered most. *Ellis:* Looking well. *Crawford:* Looking well. *Cherokee:* Finest prospect ever known here. *Brown:* Badly injured by grasshoppers. *Anderson:* Increased acreage; condition poor, on account of replanting after the grasshoppers left. *Allen:* Late planted, but encouraging. *Johnson:* Corn planted since June 15 came up quick and looks finely. *Douglas:* Nine-tenths of the crop replanted on account of grasshoppers, but looks well. *Cowley:* Badly in the weeds. *Atchison:* Largely replanted within ten days; may yet make a crop.

NEBRASKA.—*Richardson:* Replanted three times; poor chance; drought. *Webster:* Looks fine. *Madison:* Grasshoppers. *Knox:* Damaged by grasshoppers, but growing up again. *Hall:* Bad stands. *Cedar:* Backward; cool weather. *Sage:* Grasshop-

pers. *Otoe:* Grasshoppers. *Cass:* Grasshoppers; poor chance. *Johnson:* Replanted came up well, and is growing fast. *Clay:* Thin on the ground.

California.—*Sonoma:* Late heavy rains have made a great improvement in corn, but have somewhat damaged small grain. *Amador:* Benefited by late rains.

Oregon.—*Clackamas:* High prices have induced a large planting.

The Territories.—*San Miguel, New Mexico:* Drought. *Santa Fé:* Too dry. *Taos:* Drought. *Choctaw Nation, Indian Territory:* Good in some places, and poor in others. *Yankton, Dakota:* Late. *Hanson, Dakota:* Season late for corn. *Lincoln, Dakota:* Too cold and wet for corn. *Taos, New Mexico:* Very poor; drought.

WHEAT.

The average condition of wheat of both kinds for the entire country is 82. The average condition of winter-wheat for the States in which it predominates, including California, is 74; of spring-wheat, 96. The South Atlantic and Gulf States, which have been comparatively free from insect-pests, and have suffered less than usual from rust, report a high condition. North Carolina, 102; Georgia, 108; Alabama, 106; Mississippi, 113; Texas, 135; Arkansas, 119. Tennessee and Oregon, each 102, are the only other States which report winter-wheat above average. In the North Atlantic and Middle States, the figures are low. Virginia, 83; Maryland, 76; Pennsylvania, 78; New Jersey, 63; and New York, 45—lowest of all. Between the Alleghanies and the Mississippi, West Virginia averages 64; Kentucky, 82; Ohio, 71; Michigan, 79; Indiana, 69; Illinois, 76. Missouri returns 72; Kansas, 91; Iowa, 95. In California, though there is no obvious line of distinction, a part is classed as winter and a part as spring wheat; the former averages 76 and the latter 55.

Among the States producing spring-wheat to any considerable extent, Maine returns a condition of 101; New Hampshire, Wisconsin, and Iowa, 99; Vermont, 100; New York, 91; Pennsylvania, 88; Illinois, 96; Minnesota, 102; Kansas, 85; Nebraska, 71; Oregon, 106. The principal causes which affected the condition over large areas, in the winter and spring, were reported in June. Local causes modifying it since will be sufficiently noted in the extracts from correspondents which follow.

Maine.—*Androscoggin:* Spring-wheat looks well, winter-wheat not raised. *Cumberland:* Grain looking well.

New Hampshire.—*Hillsborough:* Small grains look well. *Rutland:* Grain-crops late but promising.

Vermont.—*Grand Isle:* Winter-wheat badly killed.

New York.—*Schoharie:* Winter-wheat light. *Wyoming:* Winter, killed. *Dutchess:* Nearly a failure. *Jefferson:* More promising. *Orange:* Considerably winter-killed. *Suffolk:* Winter-crops badly injured. *Seneca:* Too far gone to be benefited much by recent rains. *Erie:* Winter-wheat very uneven, except alongside timber. *Steuben:* Winter-grain badly injured. *Queen:* Short.

New Jersey.—*Warren:* Short crop, straw short, and the grain not full. *Burlington:* Heading better than was expected. *Mercer:* Winter-grain greatly improved. *Salem:* Short, through winter-killing.

Pennsylvania.—*Northampton:* Half crop. *Perry:* well headed and filling rapidly. *Cambria:* Improving; harvest will be ten days late. *Lebanon:* A very fine wheat-field; was made so by harrowing and dragging the ground just after plowing. *Cumberland:* Promising. *Bucks:* Discouraging prospect; half crop. *Columbia:* Grain slow in filling. *Lancaster:* Improving with late rains; heads large. *Franklin:* Fine. *Montgomery:* Half crop. *Montour:* Ripening slowly and unevenly. *Tioga:* Half crop. *Washington:* Late ripening. *Sullivan:* Many fields plowed up for buckwheat.

Maryland.—*Frederick:* Improving. *Carroll:* Greatly improved within a month; Fultz especially fine throughout the county; large heads and well filled. *Baltimore:* Late-seeded fields below average; earlier in fine condition. *Dorchester:* Not quite so good as last year. *Harford:* Greatly improved. *Montgomery:* Straw short, but heads well filled. *Calvert:* Greatly benefited by late rains; straw short, but grain unusually good. *Washington:* Very great improvement during June. *Howard:* Poor crop.

Virginia.—*Powhatan:* Crop large for the amount of seed sown. *Bland:* Improved

by late rains. *Warwick:* Grain shrunk through rust on blade and stalk. *Spottsylvania:* Grain fine; forty to seventy-five grains in a head. Fultz yields largely, but is short-strawed from drought in May. *Stafford:* Greatly improved during May and June; straw short, but grain plump. *Loudoun:* Great improvement in six weeks; filling well. Clawson wheat from the Department stood the winter well, and promises a heavy yield; several days later than the Fultz. *New Kent:* Grain of better quality than for many years. *Frederick:* Fultz excels all others; makes two bushels to one of Mediterranean or Lancaster. *Orange:* Straw short; grain of first quality. *Henry:* Light, but of good quality. *Henrico:* Straw short, but grain fine. *Craig:* Thin on the ground and short-strawed; heads short, but well filled; grain good; Lancaster and Fultz the best; Touzelle scabbed in the head, and will make only half a crop. *Dinwiddie:* Fine in quantity and quality. *Halifax:* Injured by rust and chinches. *King George:* Remarkably fine season for maturing and harvesting; straw short, but heads fine and full. *Mecklenburgh:* Fine quality. *Nelson:* Thin, but of very superior quality; heads well filled. *Washington:* Third of a crop; Fultz the best seed, Lancaster next. *Wythe:* Full average. *Page:* Shortened, but well filled and in good condition. *Charles City:* Short, but quality and quantity better than last year. *Cumberland:* Full crop of good quality. *Campbell:* Promises a good yield; heads well filled. *Prince William:* Matured well. *Washington:* Drying up; spots on the head. *Matthews:* Some rust. *Westmoreland:* Fine quality and heads full, but straw short; Fultz the best. *Augusta:* Largely winter-killed. *Culpeper:* Straw short, but heads well filled; Clawson, from the Department, a great acquisition; well adapted to the climate. *Fairfax:* Remarkably well filled; Fultz still superior. *Highland:* Not over half a crop. *Roanoke:* Injured by cold and drought. *Chesterfield:* Very promising.

North Carolina.—*Robeson:* Shortened by frost. *Chowan:* Good. *Mitchell:* Badly injured by snow and freeze of April 17; thin and short; Clawson wheat, from the Department, the finest ever grown here; will ripen July 10; many heads 7 inches long. *Madison:* Clawson, from the Department, stands next to Tappahannock, which is our earliest variety; stood winter well. *Perquimans:* Unusual promise. *Alamance:* Unusually fine. *Yadkin:* Full average, and of good quality. *Duplin:* Increased growth. This township harvested three-fourths of the aggregate of the entire county in the census of 1870. *Greene:* Injured by frost; half crop. *Hertford:* Best crop for years. *Haywood:* Injured considerably on bottoms by heavy rains: Fultz does well on all soils. *Montgomery:* Fair. *Stanley:* Damaged somewhat by wet in the shock; crop generally good; Fultz very fine. *Caldwell:* Somewhat rusted as well as injured in the shock by rains. *Buncombe:* Injured by April freezes, as also by rust. *Clay:* Fultz the best variety furnished by the Department.

South Carolina.—*Greenville:* Small in area, straw, and grain. *Richland:* Small; grain excellent, especially wheat. *Spartanburgh:* Small area; looks well. *York:* Light; rust. *Lexington:* Average in spite of frost.

Georgia.—*Forsyth:* Grain good, but crop short; acreage increased. *Towns:* Injured by late frost, but the increased acreage will make up the deficiency. *Lumpkin:* Fully 50 per cent. better than last year. *Troup:* Good yield and grain. *Gilmer:* Well matured by the dry weather. *Gordon:* Quality good on uplands. *McDuffie:* Best crop in twenty years. *Gwinnett:* Fair. *Columbia:* Considerable rust. *Catoosa:* Rust injured a very fine promise. *Butts:* Good. *Hancock:* Good yield. *Upson:* Short. *Telfair:* Rusted. *Walton:* Improved quality. *Clayton:* Mostly good; one man averaged 20 bushels per acre, one acre yielding 42.

Alabama.—*Crenshaw:* What little wheat was sown matured well. *Calhoun:* Good yield; grain sound. *De Kalb:* Straw in excess; grain poor. *Franklin:* Double any crop since the war. *Marshall:* Yield good; flour good. *Colbert:* Largest crop ever made here. *Lawrence:* Average, 7 bushels per acre. *Lauderdale:* Good quality; Fultz and other wheats from Department doing finely.

Mississippi.—*Greene:* Efforts to grow wheat have all failed; rust invariably takes it in bloom. *Newton:* Crop unsurpassed. *Grenada:* Injured by rust and smut. *Neshoba:* Crop fine, but injured by rust in some places. *Jasper:* A few acres of winter-wheat, but destroyed by rust after beginning to ripen. *De Soto:* Unusually fine. *Winston:* Rust; only early varieties escape. *Franklin:* Entire failure. *Kemper:* Georgia wheat fine; Department wheats all rusted. *Lowndes:* Good. *Lee:* Average 20 or 30 bushels per acre; crop sufficient for home demand. *Talabusha:* Fultz from the Department better than any other; heads a third larger; tillered more extensively; 60 stalks of wheat from one grain, but rusted after all. *Sunflower:* Acreage in small grain increased.

Louisiana.—*Bienville:* Shortened 15 per cent. by rust. *Jackson:* A total failure through rust.

Texas.—*Dallas:* Yield from 15 to 40 bushels per acre; average about 25; grain large and plump; weight 60 to 65 pounds per bushel. *Henderson:* Fine wheat is raised. *Burleson:* Average 25 bushels per acre. *Coryell:* Finest crop ever raised here; from 20 to 40 bushels per acre. *Kaufman:* Average of county, 18 bushels per acre; fine condition. *Red River:* Good. *Bowie:* A field of 300 acres is expected to yield 25

bushels per acre. *Williamson:* Crops average 20 to 25 bushels per acre. *Bexar:* Averages 20 bushels per acre of 62 pounds each. *Titus:* Twenty-five per cent. above average. *Somerville:* Average 20 bushels per acre. *Grayson:* Splendid crops; 15 to 45 bushels per acre. *Bosque:* Better than for years; 20 to 30 bushels per acre. *Cooke:* Fair. *Hunt:* Small grain turning out more per acre than for ten years. *Uvalde:* Department wheats not successful. *Hamilton:* Splendid crop.

ARKANSAS.—*Woodruff:* First crop sown since the war; splendid, averaging from 15 to 40 bushels per acre. *Monroe:* Large acreage and fine condition, promising 20 to 25 bushels per acre. *Baxter:* Best crop since the war. *Dallas:* Unusually good. *Independence:* One crop averaged 40 bushels per acre; lack of labor for harvesting; reapers and mowers extensively introduced. *Bradley:* Greatly reduced by rust. *Dorsey:* Immense crop harvested. *Franklin:* Best general crop grown; Tappahannock and Touzelle did well. *Ouachita:* Largest crop ever raised; wheat from northern seed badly rusted. *Hempstead:* Fine. *Washington:* Pastured in winter and spring, but the grain is good and yield above average. *Jefferson:* Good yield. *Sebastian:* Changing base from cotton to wheat; double last year's acreage. *Fulton:* Best crop for years. *Pope:* Better than for many years. *Sevier:* Best crop ever raised here. *Howard:* Five times greater than any crop since the war.

TENNESSEE.—*Lincoln:* Late sown injured by rust. *Fentress:* Some rust. *Smith:* Average yield of fine quality. *Sevier:* Very fine quality. *Knox:* Grain good, but the yield is small; no smut from seed soaked with solution of bluestone. Fultz stood the freezes well, and for three years has produced 50 per cent. more than the Tappahannock. *Carter:* Fultz from the Department is good, but Clawson a failure. Our winter-wheats are generally a fine yield. *Greene:* Good quality, but many crops light. *Monroe:* Some sprouting in the shock; yield average and quality excellent. *Hawkins:* Stand thin and straw short, but the grain beautifully ripened. *Cheatham:* Injured 20 per cent. by rains. *McMinn:* Grain remarkably full and plump; heads short. *Henry:* Largest crop ever grown here. *Obion:* From 20 to 30 bushels per acre. *Trousdale:* Good. *Van Buren:* Injured by freezes in spring. *Bradley:* Grain fine, plump, and heavy; raised 102½ bushels of Golden Straw on two acres. *Dickson:* Season propitious. *Montgomery:* Grain good; acreage a third greater than last year. *Robertson:* Injured in shock by rain. *Hancock:* Average. *Rhea:* Injured in the shock by rain. *Grainger:* Greatly improved.

WEST VIRGINIA.—*Raleigh:* Short, but good and heading splendidly. *Brooke:* Badly winter-killed, but will perhaps make half a crop. *Cabell:* Thin, head small, but promises good quality. *Jackson:* Winter-killed, and in some neighborhoods damaged by spring floods. *Marion:* Improving, but will be poor. *Pocahontas:* Not much over half a crop. *Jefferson:* Not well filled; quality middling; will probably not average over 5½ to 6 bushels to the acre. *Mineral:* The poorest crop for many years. *Wood:* Badly damaged by severe winter. *Putnam:* Not more than half an average; recent wet weather developing rust; some complaint of smut; Clawson thought to be superior to Tappahannock; it has a larger head, resists the midge; promises to be valuable, but late. *Mercer:* Unpromising. *Hancock:* Many fields not worth harvesting; a few up to fair average. *Barbour:* About one-third of a crop. *Monroe:* Injured in April. *Harrison:* Scarcely half a crop. *Mason:* If not injured in the shock by warm rains, will make from one-half to two-thirds of an average.

KENTUCKY.—*Carroll:* Injured by severe winter; later than usual. *Hardin:* But little over half crop. *Warren:* Acreage double; condition better than an average. *Shelby:* Thin on the ground, and low, some fields not high enough to cut; heads fair. *Adair:* Injured by recent rains. *Lincoln:* Thin on the ground, and injured by rust. *Russell:* The best crop for many years; mostly cut. *Pendleton:* About half an average; quality fine; late sown an entire failure. *Metcalfe:* Not more than half a crop—three-fourths at best—owing to severe winter and dry spring. *Livingston:* Nearly ruined by rust. *Graves:* Not an average; thin on the ground, but grain good. *Edmonson:* Harvested, and good, but in danger from rain. *Callaway:* Good. *Cumberland:* A fair crop.

OHIO.—*Trumbull:* Improving. *Morrow:* Improved beyond expectation; will be a good crop. *Erie:* Doing well; no rust. *Sandusky:* Improved very much; weather favorable to its filling. *Coshocton:* Rust has appeared; fears of serious injury; harvest late. *Medina:* Harvest interrupted by heavy rains. *Holmes:* Somewhat injured by late frost. *Harrison:* Promising. *Hancock:* A heavy straw, but ripens slowly. *Geauga:* Very heavy. *Fairfield:* Harvest ten days to two weeks behind the usual season, and wheat threatened with rust. *Delaware:* Weather just right. *Van Wert:* Thin on the ground, and badly struck with rust. *Gallia:* About one-third of an average. *Lucas:* Has a rank growth; is very late, and is threatened with rust. *Henry:* Late; badly down; not filling well; Fultz and Tappahannock stand the best.

MICHIGAN.—*Kalamazoo:* Two-thirds of a crop in this county. *Wexford:* Ruined by frost June 13. *Branch:* Twelve days later than last year; an excess of rain. *Jackson:* That not winter-killed promises a large yield; heads long and well filled. *Hillsdale:*

Has improved. *Tuscola:* In some parts of the county, fully up to an average; in others not so good. *Saint Joseph:* Only half a stand on account of winter-killing; straw of a rank growth; weather quite unfavorable. *Mecosta:* Materially injured by frost June 12; some fields mown for the straw, others plowed under and sown to millet. *Lake:* Damaged by frost in June. *Grand Traverse:* Damaged by frost June 13. *Manistee:* In good condition until June frosts. *Livingston:* Badly winter-killed, but recovering. *Oakland:* Has improved since the late rains, but in danger of rust. *Monroe:* Not promising. *Allegan:* Promising; straw bright and berry plump.

INDIANA.—*Grant:* About a half crop. *Clarke:* Injured by the winter, and by frost in April. *Jennings:* Almost an entire failure. *Spencer:* Good quality, but thin on the ground; many fields are too thin to harvest. *Elkhart:* Badly down. *Franklin:* Greatly improved; half to two-thirds of a crop. *Madison:* On fallow, or dry lands, looks well; that sown among corn, of but little account. *Steuben:* The prospect never better. *Decatur:* Badly winter-killed; this county will perhaps produce seed, and not more. *Orange:* Prospect poor; many fields will not be harvested. *Warren:* Fine on clay soil. *Dubois:* Less than half a crop; grain injured by wet weather. *Shelby:* Improved since last report. *Washington:* Will not produce the amount of seed sown. *Ripley:* What there is is doing well; Clawson White Winter very promising. *Pike:* Damaged by rain. *Noble:* Ripening very unevenly; has been injured by weevil. *Howard:* Being badly damaged by midge. *Hendricks:* Some red weevil, or midge. *Crawford:* Being injured by rust and chinch-bugs. *Clinton:* Midge abounds, and will materially lessen the crop. *Cass:* Two weeks late. *Scott:* Very thin, but well filled. *Kosciusko:* Has come out beyond all expectations, owing to favorable season. *Tippecanoe:* Improved; will be nearly or quite an average. *Brown:* Badly winter-killed.

ILLINOIS.—*Edwards:* Coming out better than was expected. *Stephenson:* Promising. *Clark:* More than an average. *Madison:* Late, weedy, and not well filled. *Vermillion:* Greatly improved, but will not be more than 60 per cent. of a full crop. *Pope:* Thin, but well filled. *Williamson:* Improved 10 per cent. or 15 per cent. since May. Owing to the increased acreage the yield will probably nearly equal that of 1874. *White:* Will not yield one-half the seed sown, owing to the ravages of the Hessian fly. *Saint Clair:* Fully two weeks late. Ground too wet for harvesting except with the cradle. *Randolph:* Fair. But little injury from army-worm. *Macon:* Fall wheat full of chinch-bugs, but not damaged much by them. *Jersey:* Improved very much, and from present appearances will make half a crop. *Livingston:* No winter-wheat; small acreage of spring; condition good. *Mason:* Spring-wheat looks well. *Montgomery:* No. 1; but will be difficult to harvest on account of rain. *Massac:* That not winter-killed has long heads and is well filled. *Monroe:* Grain superior but yield below an average. *Fayette:* Good, but being harvested with difficulty on account of rain.

WISCONSIN.—*Vernon:* Spring-wheat looks well. Injured in some places by chinch-bugs and grub-worms. *Iowa:* Will be about half crop owing to the ravages of chinch-bugs. *Calumet:* Spring-wheat very promising. *Green:* Spring-wheat all destroyed before it was four inches high by chinch-bugs, and was plowed up and sown in buck-wheat. *Saint Croix:* Looks unusually well. *Crawford:* The best winter-wheat for years.

MINNESOTA.—*Stearns:* The outlook for spring-wheat was never better. *Sherburne:* Some fields injured by grasshoppers, others not touched. *Cottonwood:* The wheat-crop is the finest raised since the settlement of the county.

IOWA.—*Crawford:* Splendid. *Story:* Season favorable. *Lee:* Winter-wheat a failure; spring looks well. *Poweshiek:* Some complaint of rust. *Mills:* Fears of a failure from rain and rust. *Louisa:* Spring-wheat looks well, but is growing tall and is in danger of falling down. *Howard:* Looks well on dry soil, but in many places suffering from continued rain. *Hardin:* An overgrowth of straw, and inclined to fall down. *Tama:* Injured by wet weather, especially on low lands. *Guthrie:* Winter-wheat a failure; useless to sow it, unless hardier varieties can be found than any yet tried in this county. Spring-wheat rank and beginning to fall. *Buena Vista:* Fears of rust. *Cherokee:* Late, but promises to be heavy.

MISSOURI.—*Crawford:* Wheat largely mixed with chess; not over three-fourths of the crop will be full average. *Ozark:* A little short on account of winter-killing. *Greene:* Crop greatly beyond expectation. *Polk:* Abundant rain keeps the chinch back; wheat out of all danger. *Gasconade:* Lowland-crops injured by chinches. *Chariton:* Largely plowed up to be put in corn; not over a half crop, but good and well saved. *Franklin:* Greatly improved. *Adair:* Total failure. *Carter:* Average. *Howard:* Too much rain. *Daviess:* Badly winter-killed. *Johnson:* Ruined by grasshoppers. *Lincoln:* Only one-fourth of a crop will be made; grain good. *Maries:* What survived winter came out beyond expectation. *Taney:* Will be 25 per cent. larger than ever before; Clawson, from the Department, is splendid. *Stone:* Shortened by fly, rust, and chinch. *Stoddard:* Increased acreage; somewhat winter-killed but promising. *Saint Francis:* Never better. *Perry:* Very good. *Lawrence:* Crop has come out wonderfully; Clawson especially fine; heads run 80 to 100 grains each.

Jasper: Badly injured by chinches. *Cole:* Fine weather has brought the crop to average; heads and berries superior. *Clay:* Destroyed by grasshoppers. *Carroll:* Badly winter-killed; no spring-wheat. *Shelby:* Mostly winter-killed and plowed up for corn; what was left is not good. *Newton:* Too thin and weedy; injured by rust and chinch-bug. *Benton:* Season unfavorable.

KANSAS.—*Smith:* Small grain injured by drought. *Marshall:* Grasshoppers left three-fourths of the small grain uninjured. *Doniphan:* Small grain mostly destroyed by grasshoppers. *Neosho:* What the grasshoppers left is good. *Washington:* Spring-wheat injured by drought in June; fall-wheat good. *Sumner:* Finest crop yet raised. *Shawnee:* Fall-wheat that escaped the grasshoppers is the best for three years; many pieces average 30 bushels per acre; spring-wheat poor. *Reno:* Many pieces of fall-wheat drilled upon deep-plowed ground will average 30 bushels per acre; others will go as low as 10 bushels. *Labette:* Injured 8 per cent. by grasshoppers and 10 per cent. by chinch-bugs. *Ellis:* Winter-wheat, where not cut too green, is plump and well headed; stand good; spring-wheat long and stiff-strawed and long-headed. *Cherokee:* Thin on the ground but promising; heads unusually long and well filled. *Brown:* Badly injured by grasshoppers. *Marion:* Best crop of winter-wheat ever harvested here; White May and Blue Stem the favorite varieties; White Genesee and Gipsy well reported. *Republic:* Injured some by drought. *Montgomery:* Excellent crop and harvested in fine condition; some little damage by rust and chinches. *Chase:* Spring-wheat damaged by June drought. *Douglas:* Nine-tenths taken by grasshoppers. *Cowles:* Good and well saved.

NEBRASKA.—*Webster:* A little injured by drought. *Stanton:* Injured by grasshoppers in places. *Madison:* Grasshoppers. *Knox:* Half destroyed by grasshoppers. *Hall:* Grasshoppers. *Cedar:* Large yield, if it escapes grasshoppers. *Adams:* Above average. *Gage:* Grasshoppers. *Otoe:* Grasshoppers. *Antelope:* One-third destroyed by grasshoppers. *Franklin:* Injured by grasshoppers.

CALIFORNIA.—*Sacramento:* Grain-crops badly injured by freezing weather in April. *Alameda:* Wheat and other grain will not exceed two-thirds of a crop; drought and drying winds since the middle of February; much grain damaged by rain in the shock. *San Joaquin:* Thrashed out only half average; heavy rains caused extensive lodging of the crop. *Contra Costa:* Full average on good, well-tilled land, but short, as a whole, 25 to 33 per cent. *San Bernardino:* Spring frosts unusually disastrous. *Stanislaus:* Injured by rain in the shock.

OREGON.—*Benton:* What little winter-wheat we have looks well; spring-wheat late but promising. *Clackamas:* Favorable weather has benefited spring-grains. *Tillamook:* Small grains mostly went to straw. *Columbia:* Excellent. *Grant:* Season favorable.

THE TERRITORIES.—*Santa Fé, N. Mexico:* Doing well in spite of drought. *Taos, New Mexico:* Very poor. A failure of our crops will terribly affect the whole Territory, as nearly all the counties draw their supplies from this. *Sevier, Utah:* Straw short; unpromising. *Choctaw Nation, Indian Territory:* Increased average and unusually fine yield. A large thrasher has just been introduced. *Yankton, Dakota:* Growth rank. *Lincoln, Dakota:* Doing well. *Boise, Idaho:* Season late.

COTTON.

Our cotton returns are unusually full. The condition of the crop approximates a full average, showing an improvement during June in all the cotton States except Texas, where the prevalence of drought in some localities and some local injuries by cut-worms, cotton-caterpillars, and grasshoppers reduced the promise of the crop 3 per cent. The improvement of condition in the other cotton States is shown by the following figures: North Carolina, 3 per cent.; South Carolina, 2; Georgia, 6; Florida, 7; Alabama, 1; Mississippi, 3; Louisiana, 10; Arkansas, 14; Tennessee, 10. The State averages on the 1st of July were as follows: North Carolina, 95; South Carolina, 99; Georgia, 97; Florida, 101; Alabama, 102; Mississippi, 103; Louisiana, 105; Texas, 93; Arkansas, 104; Tennessee, 109.

A considerable cotton-culture is reported in some counties in Virginia, but to a considerable extent this crop has been superseded by tobacco. The crop in these counties is late, but generally healthy. It stands the drought well.

In North Carolina the crop is late, but is generally in better condition

than at the same time last year. The fine weather of June improved the crop very materially in many counties. Cotton-lice are reported in Chowan, Edgecombe, and Camden. In Edgecombe a new variety of the *aphis* is reported, called the blue or root louse, which is more destructive than the ordinary leaf-louse. Clean culture seems to have been general during the season so far, which, with the good weather of June, has greatly improved the crop prospects.

In South Carolina the condition of the plant is almost a full average of normal growth. Darlington, which produced a seventh of the crop of the State, reports a condition 5 per cent. above average. Barnwell, the next largest cotton county, reports full average and 15 per cent. better than last year. The crop is generally late, having been replanted in many cases on account of late frosts. Some local injuries are reported from violent hail and rain storms.

Seventy-three counties in Georgia, embracing over two-thirds of the crop of the State, show a very general improvement. The crop is here also late, but generally of vigorous growth and clean cultivation. One correspondent complains of a tendency among planters to rather exaggerate the condition of the crops, but the fine June weather justifies the improved estimate of the crop in most cases.

A still more marked improvement is noted in Florida, where a short dry spell was of great benefit in enabling the planters to thoroughly clean their fields. The weed was generally small but well fruited. Some complaints of "sore-shin" come from Gadsden.

Alabama reports a slight improvement upon the very favorable condition of June 1. The weed in many places was somewhat dwarfed by drought, but was generally limbing and forming well. Montgomery and Dallas, the two largest cotton counties of the State, report the crop 10 per cent. above average, while some of the larger counties fall below 95. No insect injuries were reported.

Mississippi reports an advance, which brings her crop considerably above average. The season seems to have been exceptionably good, both for growth and cultivation. Though the planting was delayed by unfavorable weather, the crop had in many counties attained its full growth. The general promise was very greatly in advance of July, 1874, and the cultivation was greatly improved. Many counties report the labor question as far more satisfactory than at any time since the war. In some cases there was a complaint of too rapid weeding and too slow fruitage. Lice were troublesome in some parts of Jasper.

All the parishes of Louisiana reporting show a very satisfactory condition of the crop. In some quarters lately afflicted with drought there is a tendency to excess of rain. No reports of insect injuries. A marked improvement is noted during June.

In Texas the condition is varied. Many counties report the crop as remarkably fine, but local drought and insect ravages have slightly reduced the prospect as compared with the June report. Cut-worms were destructive in Coryell and Bandera. Caterpillars were reported in Limestone, on lowland-cotton, also in Bosque and Matagorda, but in no case were their ravages very serious. Grasshoppers were threatening in Hunt, and the cotton-grass-worm in Hamilton. Unknown insects were troublesome in Collin.

Arkansas exhibits the most marked improvement of the cotton States during June. The conditions of growth, after the late opening of the season, were excellent, and the cultivation good. Some small local injuries from drought, worms, and lice are noted. Tennessee reports show a promising though backward state of the crop.

The following table shows the average condition of the crop on the 1st of June and 1st of July of the current and five preceding years:

States.	1875.		1874.		1873.		1872.		1871.		1870.	
	June.	July.	June.	July.	June.	July.	June.	July.	June.	July.	June.	July.
North Carolina	92	95	89	102	85	91	96	99	90	99	94	98
South Carolina	97	99	81	88	88	82	92	98	92	100	96	98
Georgia	91	97	80	91	94	94	94	104	82	82	101	100
Florida	94	101	90	96	98	99	95	96	103	88	98	98
Alabama	101	102	82	92	93	85	105	107	83	81	102	100
Mississippi	100	103	78	87	92	83	100	112	84	80	95	98
Louisiana	95	105	70	73	94	80	104	101	90	75	101	100
Texas	96	93	98	102	86	78	100	103	93	93	97	98
Arkansas	90	104	75	94	92	96	98	96	83	90	101	100
Tennessee	99	109	90	97	90	96	99	104	90	96	85	98

VIRGINIA.—*Dinwiddie:* Replaced considerably by tobacco; crop small, but growing fast; no blooms yet. *Sussex:* Injured by cold and drought. *Nansemond:* Stands drought well. *Prince George:* Small but healthy.

NORTH CAROLINA.—*Gaston:* No cotton-blooms yet; they frequently come about June 20. *Mecklenburgh:* Ten days later than last year, but in better condition; very little grass; crops well worked; best stand since the war; fertilizers used only to a limited extent. *Chowan:* Very small; looks badly; hindered by lice and cold weather. *Pamlico:* Greatly improved by fine weather; stands good, though crops are small. *Beaufort:* June very cool with too much rain; much cotton hopelessly behind time. *Perquimans:* Backward; stand poor. *Franklin:* Backward, but stand promising. *Wilson:* Stand good, but from seven to ten days late; plants healthy. *Edgecombe:* Spotted; stands damaged by lice; the blue or root louse, which is more destructive than the leaf-louse. *Wake:* Weather very favorable; crops clean, and rapidly recovering from the spring stint. *Camden:* Very backward and lousy. *Duplin:* Badly injured by heavy rains; unusually small. *Columbus:* Some blooms; rains have made the crops grassy. *Greene:* Planting ten days late; plant unusually small, but crops clean; fine growing weather. *Hertford:* Plants small, but looking well. *Pitt:* Ten days late; stand good and clean. *Montgomery:* Stand fair, but two weeks late; we need a late and favorable fall. *New Hanover:* Improving fast. *Stanly:* Weed low; forms its squares close to the ground. *Onslow:* Small for the time of year. *Polk:* Prospect better than at this time last year.

SOUTH CAROLINA.—*Colleton:* Had to be replanted, but is now promising. *Marlborough:* Heavy wind, rain, and hail-storms damaged the crops; they are now better, but need rain; weed not so good as last year; looks sickly, with few forms; blooms ten to fifteen days later than last year. *Beaufort:* Fine season; crops average. *Orangeburgh:* Admirable weather; crops backward but in fine condition. *Barnwell:* Later than last year but 15 per cent. better. *Darlington:* Fully up to last year and in better condition. *Newberry:* Very promising. *Georgetown:* Promises well in spite of late frosts requiring replanting. *York:* Generally good, but two weeks late. *Union:* Healthy and growing. *Lexington:* Growing vigorously; some danger of overgrowth of weed.

GEORGIA.—*Lumpkin:* Last year this county put up only forty-two bales. *Troup:* A little late but growing finely. *Pickens:* Smaller than usual, but in better condition and cultivation. *Douglass:* Small, but clean; stand good. *Bullock:* Crop being well worked. *Dooly:* Greatly benefited by the dry, warm May. *Muscogee:* Small and late blooming; growing slowly for lack of rain. *Richmond:* Healthy and vigorous, but average growth; not so advanced as it should be at this time; crops uncommonly clean. *Gwinnett:* Good average prospect. *Mitchell:* Short; well cultivated during the dry weather, and unusually clean. *Columbia:* Improved by late rains. *Effingham:* Looking well. *Elbert:* Three weeks of fine weather have advanced the crop to the usual standard of size and fruitage. *Hart:* Increased acreage; crops look well but are two weeks backward. *Butts:* Ten days late; fine. *Terrell:* Small, but healthy. *Banks:* Clean and well worked. *Hancock:* Too much rain; plants not so large as last year, nor so well fruited; grassy. *Milton:* Promising. *Madison:* Late, and poor stands. *Oglethorpe:* Will be short. *Pulaski:* Flattering. *Upson:* Rather above the average. *Walton:* Growing finely and well filled with forms. *Cobb:* Suffering for rain. *Lincoln:* Great improvement. *Clayton:* Decreased acreage. *Twiggs:* Two weeks late; there are a few fine crops, but there is a tendency to exaggerate their condition. *Taliaferro:* Precocious development of weed.

FLORIDA.—*Madison:* The late short dry spell was a benefit; growing thriftily. *Jackson:* Weed small, but unusually well fruited. *Jefferson:* Increased use of fertilizers. *Wakulla:* Greatly improved. *Gadsden:* Still average, though there are some complaints of "sore-shin." *Leon:* Weed not large, but well fruited and doing well.

ALABAMA.—*Saint Clair:* Promising. *Choctaw:* Weed smaller than last year. *Clarke:* Small, but doing well. *Macon:* Stands good, but small. *Crenshaw:* May possibly yield an average. *Montgomery:* Crop well worked, but slightly dwarfed by drought; never more promising. *Calhoun:* Fine on good land well manured; old land will not grow cotton without manure. *De Kalb:* Doing remarkably well for a few days past. *Dallas:* Continues promising. *Perry:* Higher average than for ten years. *Lawrence:* Late, but in fine growing order. *Shelby:* Limbing and forming well; the few commercial fertilizers used show a marked effect. *Monroe:* Good. *Pike:* Fine growing season. *Limestone:* Full average in size, but ten days late.

MISSISSIPPI.—*Amite:* Less cotton and more corn planted; crop looks as well as last year. *Pike:* Flourishing. *Newton:* More flourishing than for years. *Grenada:* Crop in better condition than last year, with labor more reliable. *Neshoba:* Late planted, but looks fine; well cultivated and clean. *Jasper:* Injured by lice in some parts. *Coahoma:* Dry, but crop in fine condition; blooms a week earlier than usual. *Clark:* Not so forward as last year, but in better culture; some of it is affected with sore-shin, the tap-root drying up. *Rankin:* More than made up its past slowness of growth. *La Fayette:* Later than last year, but promises double the yield; season exceptionally good for cultivation. *Washington:* Promising. *De Soto:* Small, but healthy and growing fast. *Kemper:* Healthy and growing. *Lowndes:* Weeding too fast, and fruiting too slowly. *Lincoln:* Generally average. *Lee:* Never more promising. *Tunica:* Large average, excellent stands and abundant labor. *Tishomingo:* Small, but growing finely. *Jefferson:* Not quite so promising as at this time last year. *Smith:* Below average.

LOUISIANA.—*East Baton Rouge:* Greatly improved since last report, and now fully ten per cent. above average. *Morehouse:* Later than usual, but in fine condition. *Franklin:* Late and small, but doing very well. *Concordia:* Small, but healthy and strong; some parts of the parish have suffered from drought, but rains now threaten to be in excess. *Tensas:* Very promising. *Washington:* Unusually fine. *Madison:* Growing very fine. *Richland:* Clean and coming on finely. *Union:* Average yield, though the acreage was decreased. *Bossier:* Eight weeks' drought, yet the crops stand it well. *Cameron:* Best prospect since the war. *Jackson:* Unusually fine. *Caldwell:* Promising.

TEXAS.—*Dallas:* Late, but fine. *Washington:* More promising than for years. *Upshur:* Better condition than last year. *Henderson:* Late in starting, but now good; bloomed June 15. *Burleson:* Blooming; promises a third more than last year. *Coryell:* Stand injured by cut-worms and other insects. *Collin:* Started late, and has not yet recovered; several unknown insects injuring the crop. *Gonzales:* Late, but doing well. *Kendall:* Prospect of an immense yield. *Limestone:* Slightly damaged by caterpillars on low lands. *Red River:* Growing finely. *Rusk:* Looks well, and bloomed early. *Williamson:* Looks well on old land; on new land beginning to need rain. *Bexar:* Condition good; full of squares and young bolls; needs rain. *Houston:* Unusually well cultivated, and hence in fine condition. *Titus:* Looks well, in spite of the cold, backward spring. *Harrison:* Late planted, but growing finely in the good weather. *Bandera:* Four-fifths destroyed by cut-worms. *Williamson:* Backward; beginning to need rain very badly. *Blanco:* Very good yet, in spite of drought. *Bosque:* Suffering from army-worm and drought. *Cooke:* Suffering for rain. *Fayette:* Suffering for rain. *Gillespie:* Looks well. *Hunt:* Threatened by drought and grasshoppers. *Waller:* Free from grass; one-third of the crop is unusually small and of slow growth; cotton-worm on three or four farms. *Galveston:* Beginning to need rain. *Smith:* Small and backward; general complaint of lice. *Montgomery:* Best prospects for years. *Matagorda:* Needs rain for weed-growth; caterpillars seen, but not threatening. *Anderson:* Unusually good condition, in spite of drought. *Hamilton:* Very backward, but growing well; considerably injured by what is sometimes called the cotton-grass worm, especially on sod-land. *Marion:* Drought; crop may yet reach average. *Navarro:* Drought, but crop not yet injured.

ARKANSAS.—*Garland:* Fine; on a decreased acreage we will double last year's yield. *Woodruff:* Lice, worms, and drought somewhat injurious. *Prairie:* Full average. *Van Buren:* Injured by lice. *Independence:* Later than last year; much replanting. *Ashley:* Fine showers. *Bradley:* Fine growing condition. *Dorsey:* Looks lovely. *Saint Francis:* Ten days late and very small; drought. *Crawford:* Doing well. *Sebastian:* Changing base from cotton to wheat. *Columbia:* Well worked. *Fulton:* Ten days late; decreased acreage. *Pope:* Promising. *Marion:* Small plants, but very promising.

TENNESSEE.—*Lincoln:* Plant unusually small. *Gibson:* Fine condition. *Williamson:* Acreage reduced 20 per cent.

OATS.

Returns for June showed an increased area sown. Returns of condition, for July 1, promise a large yield. Except New York, 94, and Pennsylvania, 98, all the large producing States are above average: Indiana, 110; Illinois, Ohio, and Oregon, 103; Wisconsin, 104; Minnesota, 106; Iowa, Texas, and Kentucky, 105; Missouri, 112. The other States which are average or above are, Maine, 103; New Hampshire, 100; Vermont and Florida, 101; Massachusetts, 102; Mississippi, 108; Louisiana, 104. Virginia, in which frost, drought, and rust have combined to injure the crop, is down to 74. The remaining States range between 82, in New Jersey, and 97, in Connecticut, North Carolina, and West Virginia.

MAINE.—*Androscoggin:* Look well.

NEW HAMPSHIRE.—*Hillsborough:* Look well.

VERMONT.—*Rutland:* Late, but promising.

CONNECTICUT.—*New London:* Late, but look exceedingly well.

NEW YORK.—*Schoharie:* Fine. *Livingston:* Fine growing rains. *Saratoga:* Promising; full strawed and grain equal to last year. *Genesee:* Pinched by drought. *Orange:* Very short. *Seneca:* Doing well; good color. *Erie:* Very good.

NEW JERSEY.—*Warren:* Stand well on the ground and of good color, but short-strawed. *Hudson:* Some late and shortened by drought.

PENNSYLVANIA.—*Bucks:* Improved by late rains. *Clinton:* Short. *Butler:* Fine. *Indiana:* Promising. *Sullivan:* Promising since late rains.

MARYLAND.—*Worcester:* Generally fair; Canada oats from the Department doing finely. *Armstrong:* Extra good. *Baltimore:* Much improved. *Calvert:* Greatly improved by late rains, but cannot yield a full crop. *Cecil:* Below average, but greatly benefited by late rains.

VIRGINIA.—*Tazewell:* Shortened by drought. *Bland:* Improved by late rains. *Alexandria:* Rescued from failure by late rains. *Warwick:* Shortened by drought. *Spottsylvania:* Very short. *Rappahannock:* Shortened by drought. *Orange:* Marvelous improvement within two weeks. *Henry:* Mean. *Craig:* Great improvement; rain. *Dinwiddie:* Improved. *Halifax:* Improved. *King George:* Winter-oats fine; spring oats failed. *Mecklenburgh:* Low-land crops rusting. *Sussex:* Injured by cold and drought. *Worthington:* Good crop. *Wythe:* Short. *Cumberland:* Short. *Washington:* Severe drought. *Matthews:* Seeded too late to make a crop. *Augusta:* Short and thin. *Highland:* Inferior. *Roanoke:* A failure. *Chesterfield:* Winter-oats good; spring, a failure. *Nansemond:* On some farms not worth cutting. *Northampton:* Rusted badly; fair yield.

NORTH CAROLINA.—*Chowan:* Good. *Beaufort:* Drought in May and June. *Perquimans:* Good. *Alamance:* Winter-oats unusually good. *Davidson:* Greatly benefited by late rains. *Yadkin:* Too dry. *Greene:* Half crop; injured by frost. *Hertford:* Very short. *Haywood:* Favorable season. *Montgomery:* Best crop ever known here. *Caldwell:* Improved by rains. *Buncombe:* Good.

SOUTH CAROLINA.—*Spartanburg:* Chronic failures discourage the crop. *York:* Fall sowings good. *Lexington:* Above average and of superior quality.

GEORGIA.—*Troup:* Low, but finely headed. *McDuffie:* Best crop in twenty years. *Columbia:* Fall-oats fine, but spring-crops shortened by the May drought. *Hall:* Drought. *Butts:* Almost a failure; drought. *Terrell:* Better than last year. *Upson:* Generally good. *Telfair:* Rusted. *Walton:* Improved. *Cobb:* Badly injured by drought. *Wilkes:* Fall-crop good; spring, par.

FLORIDA.—*Madison:* Best crop for years. *Jackson:* Fall-oats good; spring, partly rusted. *Hamilton:* Very fine.

ALABAMA.—*Lowndes:* Injured by drought. *Saint Clair:* Spring-oats marred by drought. *Crenshaw:* Drought. *Chambers:* Seriously injured by drought. *Calhoun:* Poor, except fall-oats, which are very fine. *De Kalb:* Poorest crop ever known here. *Perry:* Need rain.

MISSISSIPPI.—*Newton:* Crop unsurpassed. *Grenada:* Late rains have greatly improved the crop. *Rankin:* Some yields as high as 40 or 50 bushels per acre. *Lee:* Some rust. *Lincoln:* Full average; good condition.

LOUISIANA.—*Bienville:* Injured by rust. *Jackson:* Never better.

TEXAS.—*Collin:* Red and black oats very good; white, subject to rust. *Red River:* Very fine. *Polk:* Straw shorter than last year, but heads good. *Williamson:* Largely increased acreage; crop good, and will probably average 45 bushels per acre. *Bexar:* Never better; averages 60 bushels per acre; one crop averaged 70 bushels, worth 75 cents in specie. *Titus:* Seventy-five per cent. above average. *Somerville:* Twenty-five

per cent. behind last year. *Grayson:* Splendid crop; 60 to 70 bushels per acre. *Shelby:* No rust; over average.

ARKANSAS.—*Prairie:* Fine. *Baxter:* Promising. *Ouachita:* Largest crop ever raised. *Hempstead:* Fine. *Pope:* Better than for many years.

TENNESSEE.—*Knox:* Wonderful improvement in a month. *Carter:* Damaged by drought, but improved by late abundant rains. *Monroe:* Coming out finely. *Hawkins:* Shortened by drought. *Johnson:* Improved by late rains. *Loudon:* Greatly improved. *Blount:* A third of a crop. *Bradley:* Fall-sown, fine and heavy; spring sown, a failure. *Montgomery:* Very fine. *Hancock:* Never better. *Grainger:* Superb, though we once thought the crop was ruined.

WEST VIRGINIA.—*Tucker:* Improved by late rains. *Braxton:* Late, but promising. *Brooke:* Unusually fine. *Cabell:* Much below an average. *Jackson:* Short, but improving. *Pocahontas:* Much benefited by late rains. *Mercer:* Not promising. *Monroe:* Improving. *Harrison:* Promising. *Mason:* Recent abundant rains have had a good effect.

KENTUCKY.—*Shelby:* Almost a failure; too low to cut in most of the fields. *Lincoln:* Low from early drought, but heads good and quite promising. *Pendleton:* Promising. *Metcalfe:* Look very fine. *Gallatin:* Looking exceedingly well. *Anderson:* Have improved.

OHIO.—*Trumbull:* Look well. *Williams:* Have never had so fine a prospect. *Morrow:* Promise unusually well. *Perry:* Fine. *Coshocton:* Promise full crop. *Mahoning:* Tall and fine. *Marion:* In danger of lodging. *Harrison:* Look well. *Geauga:* Early sowed, promising, but the late light. *Delaware:* Increased acreage and an excellent prospect. *Van Wert:* Very much lodged and damaged by rain. *Henry:* Heavy growth, but lodged; cannot be over three-fourths of an average.

MICHIGAN.—*Branch:* Never better, and a good breadth sown. *Lake:* Damaged by frost in June. *Livingston:* unequaled. *Shiawassee:* Look well, but need rain.

INDIANA.—*Jennings:* Very fine. *Franklin:* Look unusually well. *Steuben:* Universally good. *Decatur:* Doing well. *Whitley:* Prospect fine. *Washington:* Look very fine. *Noble:* Good; never a better prospect. *Cass:* The best crop for twenty-five years. *Scott:* Remarkably fine, with large increase in area. *Hamilton:* A heavy growth of straw, in danger of lodging, and not filling.

ILLINOIS.—*Vermillion:* The heavist crop for years, but falling down. *Randolph:* Have grown too rank. *Effingham:* Will likely be a partial failure, on account of the very wet harvest weather. *De Witt:* Rank growth, but have recently fallen down, and are not promising. *Cook:* Largely damaged by April freeze. *Sangamon:* Growing rank, and badly lodged in some places by heavy rains and wind. *Cass:* Falling badly. *Livingston:* In some places blown down. *Mason:* Badly down, yet look well; "Early Fellow" and "Somerset" excel native varieties. *Massac:* Fine. *McLean:* Badly blown down. *Piatt:* Too much straw, and in danger of falling. *Moultrie:* Badly down. *Fayette:* Good, but badly fallen.

WISCONSIN.—*Vernon:* Generally look well.

MINNESOTA.—*Cottonwood:* Very good.

IOWA.—*Crawford:* Splendid. *Story:* Season has been favorable for oats. *Mills:* In danger from rain and rust. *Louisa:* Growing tall, and in danger of falling. *Hardin:* Overgrowth of straw, and falling. *Hancock:* Heavy.

MISSOURI.—*Crawford:* Acreage small, from lack of seed; crop looks well. *Greene:* Best crop for the last ten years. *Maries:* Never better, but lodged badly. *Saint Francis:* Very fine. *Jasper:* Never better. *Grundy:* White Schonen, Potato, and Somerset oats from the Department a great improvement on our native varieties.

KANSAS.—*Neosho:* What the grasshoppers left is good. *Woodson:* Somerset oats from the Department larger and heavier than the common black oats, but later in maturing. *Labette:* Best crop yet raised here. *Crawford:* Looking well. *Cherokee:* Excellent prospect. *Brown:* Badly injured by grasshoppers. *Chase:* Injured by drought in June. *Cowley:* Very fine.

NEBRASKA.—*Antelope:* One-third destroyed by grasshoppers. *Franklin:* Injured by grasshoppers.

CALIFORNIA.—*Sonoma:* Considerably injured by heavy rains.

OREGON.—*Clackamas:* Benefited by favorable seasons. *Columbia:* Excellent. *Tillamook:* Backward. *Grant:* Favorable season.

THE TERRITORIES.—*Sevier, Utah:* Straw short. *Walla-Walla, Washington:* Look well. *Lewis and Clarke, Montana:* Backward, but doing well. *Yankton, Dakota:* Growth rank.

RYE.

In the States producing rye on a large scale, except Wisconsin, 100, the condition is reported considerably below average; in New York, winter 77, spring 90; Pennsylvania, 90 and 97; Illinois, 97; Kentucky, 95.

In New England, spring-rye is about average; winter, slightly below. The other Atlantic States range between 90 and 100, Maryland being 92, and Virginia 94. None of the Gulf States fall below average. Alabama is 103 and Texas 102. The highest condition reported, 119, is in Arkansas. Tennessee and Nebraska are each 103. In the remaining States the condition ranges from 86 to 98.

BARLEY.

The condition of the crop in California is, winter 82, spring 86; Oregon, 99 and 101; New York, 97; Pennsylvania, 94 and 89; Ohio, 72 and 100; Michigan, 108 and 102; Illinois, 94; Wisconsin, 97 and 88; Iowa, 102; Minnesota, 107. In the New England States, taken together, the condition is nearly average. Texas returns 111. In the remaining States, producing barley in small quantities, the condition ranges from average to 15 per cent. below, Kansas being at the latter figure.

POTATOES.

Returns show an increase over last year of 4 per cent. in the acreage of potatoes. Among the Eastern and Atlantic States the area remains unchanged in Vermont, is increased 3 per cent. in Maine, 1 in New York, and 5 in North Carolina; in all others decreased, ranging from 99 down to 82. The principal relative increase is on the western border of the Gulf and up the Mississippi Valley. Among the States reporting highest are, Texas, 14 per cent.; Arkansas, 27; Tennessee, 12; Indiana, 35; Illinois, 16; Iowa and Louisiana, 7; Missouri and Mississippi, 6; Nebraska, 22. Kansas decreases 12 per cent., and California 13. The condition in the Eastern, Middle, and Atlantic States is below average. Except Maryland, 82, and Rhode Island, 85, the range is between 87 and 99. New York, the great potato State, is 96. Pennsylvania and New Jersey, 94. Alabama averages 86; West Virginia, 99; Kansas, 98; California, 85; Oregon, 96. All the remaining States report the condition average or above, the range being from 100 to 125. Arkansas reports at the latter figure; Illinois, 118; Kentucky, 116; Texas, 112; Indiana, 110; Ohio, 108.

NEW YORK.—*Oneida:* Injured by frost. *Steuben:* Potato-beetles numerous and troublesome. *Westchester:* Colorado beetle in several places. *Chenango:* Injured by frost, but repaired by subsequent warm rains. *Montgomery:* Colorado beetles have appeared. *Saratoga:* Colorado beetles. *Wyoming:* Colorado beetles; not much harm yet. *Orange:* Doing well, but threatened with beetles; acreage increased. *Erie:* But little damage from beetles yet.

NEW JERSEY.—*Atlantic:* Beetles troublesome, but Paris green was very effective in destroying them. *Burlington:* Doing well, in spite of bugs. *Monmouth:* Beetles in great numbers. *Gloucester:* Beetles injurious, but crop large. *Hudson:* Some damage from beetles; early crops safe. *Sussex:* Doing well, but threatened by beetles. *Salem:* Beetles very destructive.

PENNSYLVANIA.—*Cumberland:* Colorado beetles numerous and voracious, but strongly resisted with Paris green. *Westmoreland:* Beetles. *Bucks:* Colorado beetles. *Columbia:* Beetles plenty, but doing little damage. *McKean:* Beetles worse than ever. *Clinton:* Beetles plenty, but successfully met with Paris green. *Lancaster:* Growing finely. *Elk:* Frost killed to the ground. *Indiana:* Beetles very destructive. *Lycoming:* Very fine. *Montour:* Beetles somewhat destructive. *Dauphin:* Badly injured by beetles. *Luzerne:* Beetles.

DELAWARE.—*Sussex:* Severely injured by beetles. *Kent:* Beetles very destructive.

MARYLAND.—*Caroline:* Colorado beetles very injurious. *Worcester:* Colorado beetles numerous, but less destructive than formerly; crop not materially injured. *Frederick:* Beetles disappearing. *Carroll:* Paris green quickly destroys the beetles. *Baltimore:* Bugs successfully resisted. *Dorchester:* Beetles very bad. *Harford:* Acreage restricted by the early appearance of beetles. *Wicomico:* Damaged by beetles. *Howard:* Beetles destructive.

VIRGINIA.—*Spottsylvania:* Only a few bugs, and they killed as fast as hatched.

Craig: Early plantings good; beetles numerous and threatening. *Cumberland:* Beetles threatening. *Campbell:* Excellent. *Prince William:* Injured by beetles. *Westmoreland:* Beetles numerous. *Augusta:* Beetles injurious in some quarters. *Culpeper:* Beetles in force. *Highland:* Injured by late rains. *Northampton:* Good yield, but low prices.

NORTH CAROLINA.—*Greene:* Very good. *Buncombe:* Good crop.

SOUTH CAROLINA.—*Richland:* Injured by drought.

GEORGIA.—*Muscogee:* Sorry.

FLORIDA.—*Jackson:* Fine. *Wakulla:* Seasonable weather. *Gadsden:* Quite satisfactory. *Leon:* Larger acreage than usual; mostly for northern markets, but with poor success.

ALABAMA.—*Laurens:* Injured by drought. *Montgomery:* Have turned out well. *Mobile:* Fine.

MISSISSIPPI.—*Tishomingo:* Rotting in the ground.

LOUISIANA.—*Richland:* Colorado beetle cut down late crops one-half. *Cameron:* Too dry.

TEXAS.—*Burleson:* Good yield. *Collin:* Early varieties fine, especially Early Rose. *Rusk:* Yielded finely. *Titus:* First crop, 25 per cent. above average; second crop, a failure from drought. *Austin:* Tolerable. *Waller:* Good crop. *Harris:* Remarkably good and plenty.

ARKANSAS.—*Prairie:* Early varieties never better. *Pope:* Very good.

TENNESSEE.—*Warren:* Potato-bugs appeared, but were driven off by Paris green. *Wilson:* Splendid.

WEST VIRGINIA.—*Tucker:* Better than usual. *Morgan:* Crop almost destroyed by beetles. *Braxton:* Late, but very promising; late crop not injured by beetles. *Cabell:* Fine. *Grant:* Appearance good; but little complaint of beetles. *Jefferson:* Suffering from depredations of Colorado beetles, causing farmers to plant a larger area than usual of sweet-potatoes. *Pendleton:* Look well. *Mercer:* Indication favorable. *Hancock:* Average 25 per cent. above last year, owing to effective means of destroying Colorado beetles and favorable season. *Monroe:* Not favorable. *Preston:* Have escaped the ravages of the Colorado beetles; anticipate a good crop. *Mason:* Crop never looked better than at the present; beetles have nearly disappeared.

KENTUCKY.—*Jefferson:* A fair crop; not injured by beetles; acreage less than usual. *Shelby:* Fine, with little annoyance from Colorado beetles; yield promises double that of last year, and better quality. *Lincoln:* Promise very fine; no damage from Colorado beetles.

OHIO.—*Trumbull:* Bid fair to make good crop. *Morrow:* Extraordinary crop. *Perry:* Promising. *Medina:* Look promising. *Geauga:* Late, but growing finely; prospect of a heavy crop. *Henry:* Unpromising.

MICHIGAN.—*Branch:* Look very fine; not injured by beetles. *Van Buren:* Good prospect for a large crop. *Tuscola:* Doing nicely, with fewer beetles than last year. *Livingston:* Very promising. *Shiawassee:* Look fine; not damaged by the beetle.

INDIANA.—*Floyd:* Crop immense; seed not realized last year. *Franklin:* Never looked better. *Decatur:* A large crop planted and doing well; not injured by Colorado beetles. *Dubois:* Increased acreage, and doing well. *Pike:* Somewhat injured by Colorado beetles. *Cass:* Never better. *Tippecanoe:* Especially promising. *Lake:* Large crop planted; have made a remarkable growth; have not had such a prospect for years.

ILLINOIS.—*Edwards:* Look well, though late; not damaged by insects. *Lake:* Look promising. *Pope:* Not yet planted; can plant in this county from June 20 to July 15. *Shelby:* Prospect very fine. *De Kalb:* Far above an average. *Warren:* Promising; no Colorado beetles. *Macon:* Not so many planted as usual, but never had a better prospect. *Bureau:* More promising than for several years. *Boone:* Looking very well, and not damaged by Colorado beetles. *Livingston:* Condition good; a long lead-colored bug has appeared, but the vines are growing faster than millions of them can eat. *Mason:* Looking fine. *Monroe:* Very promising.

WISCONSIN.—*Iowa:* Never looked better; but few bugs and little damage. *Clark:* The crop promises to be above an average. *Door:* Injured by frost on the 11th and 12th of June.

MINNESOTA.—*Isanti:* Look well. *Cottonwood:* Doing very well. *Mille Lacs:* Will require great exertions to save them from the Colorado beetles.

KANSAS.—*Washington:* Large yield in prospect. *Jefferson:* Badly injured by grasshoppers. *Reno:* Look well. *Labette:* Colorado beetles. *Cowley:* Fair crop.

NEBRASKA.—*Webster:* Splendid crop. *Otoe:* Tops taken by grasshoppers. *Antelope:* Injured by grasshoppers and Colorado beetles.

CALIFORNIA.—*Alameda:* Early crops, in some places, rotted; selling at $1.75 to $2.25 per bushel. *Amador:* Benefited by late rains.

OREGON.—*Lane:* Considerably injured by frosts in May. *Clackamas:* High prices have induced large plantings. *Tillamook:* Prospects better than for several years. *Columbia:* Two dollars per bushel, and but few in market.

THE TERRITORIES.—*Snohomish, Washington:* Very poor; drought.

WOOL.

The wool-clip shows a considerable increase, especially in the South and West and on the Pacific coast. Nebraska increased her yield 31 per cent. above last year; Kansas, 23 per cent.; Iowa and California, 11 per cent.; Oregon, 10 per cent.; Minnesota, 8 per cent.; Arkansas, 7 per cent.; Mississippi, 4 per cent.; Texas, 3 per cent.; Connecticut and West Virginia, 2 per cent.; Maine, New Jersey, South Carolina, and Louisiana, 1 per cent. Delaware, Maryland, and Kentucky yield a clip equal to last year's. The greatest reduction, 10 per cent., was in Rhode Island, where the clip was small; Ohio was 5 per cent. short; New York and Virginia, 4 per cent.; Vermont, Massachusetts, Alabama, Illinois, and Missouri, 3 per cent.; New Hampshire, Pennsylvania, and North Carolina, 2 per cent.; Georgia, Florida, Tennessee, Michigan, and Indiana, 1 per cent.

NEW YORK.—*Columbia:* Wool above average, bringing 40 to 42 cents per pound.
NORTH CAROLINA.—*Jones:* Increase over last year 20 per cent.
GEORGIA.—*Worth:* Crop fine; business largely increasing; wool so high that you can scarcely buy a mutton.
FLORIDA.—*Jackson:* Wool-product increasing.
WEST VIRGINIA.—*Pocahontas:* The light fall of snow and good condition of sheep increases the wool-clip. *Boone:* We have one of the best wool-growing counties, yet ten per cent. of our sheep have been killed by dogs. Cannot something be done for the better protection of this valuable property? Are a majority of our people both fools and blind?
KENTUCKY.—*Boyle:* Increase from sheep driven into the county.
OHIO.—*Morrow:* Smaller clip, but of better quality.
WISCONSIN.—*Walworth:* Clip unusually large and in fine condition.
MISSOURI.—*Camden:* Wool-growing rapidly increasing.
THE TERRITORIES.—*Laramie, Wyoming:* Wool-growing has assumed immense proportions within a year. One grazier has increased his flock of sheep from 3,000 to 32,000 head. Other parties have also enlarged their flocks by purchases from the East and from New Mexico.

TOBACCO.

The severe drought which almost destroyed the tobacco-crop in some of the largest tobacco-producing sections last year reduced the acreage of 1874 to a small fraction of that of 1873. The large increase of 1875, 175 per cent., has not brought the breadth planted up to the standard of 1873. The following States have increased their acreage, viz: Maryland, 4 per cent.; Virginia, 30 per cent.; North Carolina, 33 per cent.; South Carolina, 7 per cent.; Florida, 23 per cent.; Mississippi, 16 per cent.; Arkansas, 10 per cent.; Tennessee, 203 per cent.; West Virginia, 31 per cent.; Kentucky, 223 per cent.; Ohio, 25 per cent.; Indiana, 49 per cent.; Illinois, 56 per cent.; Missouri, 60 per cent. New York, Pennsylvania, and Texas report the same area as last year. The following States have reduced their acreage, viz: New Hampshire, 30 per cent.; Massachusetts, 25 per cent.; Connecticut, 2 per cent.; Georgia, 5 per cent.; Alabama, 10 per cent.; Louisiana, 7 per cent.; Wisconsin, 17 per cent.; Kansas, 11 per cent. The acreage of 1875 is about twice and three-quarters of that of the preceding year.

The condition of the crop of the whole country is at least 20 per cent. above average, being the most satisfactory in the largest tobacco States. Our reports from Kentucky, which produces two-fifths of the tobacco of the country, show a condition 34 per cent. above average; Virginia, 3 per cent. below; Tennessee, 6 per cent. above; Ohio, 2 per cent. below; Maryland, 1 per cent. above; Missouri and North Carolina, 2 per cent. above. Most of the heavy tobacco States are either very nearly average or above. A very depressed condition is found

only in those States whose yield is too small to greatly affect the general result.

The crop has been increased in several localities of Virginia in consequence of the establishment of tobacco-factories. Tobacco-flies were noted in Pittsylvania. In some counties of North Carolina the labor-question was affecting somewhat the growth of the crop. Gadsden, Florida, finds the Cuba tobacco the crop specially adapted to poor men. One county in Kentucky reports ten times the acreage of last year; cultivation and prospects generally satisfactory. In Missouri grasshoppers have taken to tobacco-chewing, but no damage greatly affecting the crop of the State is reported.

CONNECTICUT.—*New London:* Three weeks late, but looks unusually thrifty.

PENNSYLVANIA.—*Cumberland:* Very unpromising.

MARYLAND.—*Charles:* Acreage large. *Calvert:* Some increase of acreage; stands well on the ground. *Howard:* Increased acreage.

VIRGINIA.—*Powhatan:* The crop promises well. *Bland:* Crop increased in consequence of the establishment of several new factories. *Spottsylvania:* Large acreage and promising growth. *Pittsylvania:* Somewhat late planted; some plants troubled with flies. *Henry:* Full crop planted; looks well. *Dinwiddie:* Tobacco replacing cotton; large area planted. *Halifax:* Good stand, and growing well. *Mecklenburgh:* Starting finely; good season for setting out plants. *Campbell:* Large crop planted; looks well. *Chesterfield:* Large crop planted, and doing well. *Goochland:* Unfavorable planting-season. *Prince George:* Acreage increased 25 per cent.; stand bad.

NORTH CAROLINA.—*Yancey:* More planted for family use than common. *Caswell:* Acreage reduced, in consequence of the diminution of farm-laborers within three years. *Alamance:* Acreage increased 25 per cent. above average. *Davidson:* Doing well. *Davie:* Larger acreage than ever before. *Buncombe:* Double last year's acreage; excellent planting-season.

GEORGIA.—*Hall:* Shortened by drought.

FLORIDA.—*Gadsden:* Acreage in Cuba tobacco doubled; it is our best crop for poor men.

TEXAS.—*Titus:* Too dry; looks badly.

TENNESSEE.—*Smith:* Four times the acreage of last year. *Greene:* Many tobacco-consumers are raising their own supplies. *Houston:* Extraordinarily fine. *Trousdale:* One of the largest crops ever planted.

WEST VIRGINIA.—*Wetzel:* Plants just being set out; weather seasonable.

KENTUCKY.—*Carroll:* Large crop planted. *Hardin:* A fine season for planting, and a great deal yet to plant. *Warren:* Acreage double; present condition good. *Adair:* Recent rains have caused the setting of a large crop. *Christian:* Promising very fine; acreage one-fourth more than usual. *Russell:* Setting ten times that of last year, and at least four times the usual crop; season good. *Owen:* One-fourth above an average; flattering prospect of a large yield. *Metcalfe:* Full crop planted. *Logan:* A very large crop planted, and looking very well. *Harrison:* Four times the acreage of 1874. *Graves:* A fine season for tobacco; a large crop planted. *Gallatin:* A large crop; reported as "rotting off at the ground" by wet weather. *Edmonson:* The greatest acreage of tobacco ever known in the county. *Callaway:* A larger crop than in any previous year; generally looks well. *Breckinridge:* Crop unusually large; stand good. *Cumberland:* Crop ten times that of last year; set with good plants, in due time; land well prepared, and is growing rapidly.

INDIANA.—*Dubois:* Acreage two or three times that of any former year; set in good time, and doing well.

MISSOURI.—*Chariton:* Large acreage; crop well planted, and doing well. *Camden:* Tobacco-growing rapidly increasing. *Adair:* Ten per cent. more plants set out than last year. *Lincoln:* Many plants killed by the freeze of April 17. *Carroll:* Chewed up by grasshoppers.

SUGAR-CANE.

Mississippi reports an increased acreage of 8 per cent., and Georgia of 1 per cent. The other sugar-producing States, however, show a decline. Louisiana, which produces the great mass of American cane-sugar, is 2 per cent. below last year's acreage; South Carolina, 3 per cent.; Texas, 5 per cent.; Alabama, 6 per cent.; and Florida, 14 per cent. Louisiana reports average condition, and Mississippi, 3 per cent. above. The other States are all below average from 3 to 10 per

cent. The severe cold of spring injured seed-cane in some counties, leaving the most of the crop to be made from stubble-cane.

GEORGIA.—*Mitchell:* Seed-cane largely destroyed by severe cold.
FLORIDA.—*Madison:* Improved by late rains. *Manatee:* Good season. *Wakulla:* Cold snap killed the eyes of nearly all the sugar-cane; the present crop mostly from stubble. *Gadsden:* Increased attention to this crop.
ALABAMA.—*Crenshaw:* Not over half a crop, for want of seed-cane to plant. *Covington:* Decreased acreage; cane put up for seed in the fall was injured.
MISSISSIPPI.—*Neshoba:* Injured by cold.
TEXAS.—*Rusk:* Plant-cane growing finely; stubble-cane flattering. *Polk:* All right up to date.

SORGHUM.

In South Carolina and Tennessee the acreage remains the same as last year. It is increased in Georgia 11 per cent.; Alabama, 3; Mississippi, 20; Texas, 9; Arkansas, 36; Minnesota, 31; Kansas, 10; Nebraska, 6. In all the other States in which sorghum is grown the acreage has declined. The greatest decrease is in Wisconsin, 19 per cent. In other States the range of decrease is from 3 to 11 per cent.

Mississippi, 108, Kansas, 102, and Arkansas, 101, are the only States in which the condition is above average. In Pennsylvania and South Carolina it is average; in other States it ranges from 82 to 98.

FRUIT.

Fruit-crops suffered from numerous casualties. Late frosts and severe winter freezes were especially destructive, not only to fruit, but also to trees. A very general recurrence of severe winter temperature about the middle of April is noted in our reports, yet the injury inflicted has not been found to be so permanent as was at first supposed. Insects destructive of fruit were quite various in entomological character, but their ravages have not been very serious in the aggregate.

APPLES.—Apples are below average in all the States except Vermont, 102, Florida, 100, Texas, 101. The lowest average was in Indiana, 31. The New England States vary from 102, in Vermont, to 56, in Connecticut. The Middle States range low, from 71, in New York, to 61, in New Jersey. In the South Atlantic States, except Maryland, 90, the the average is still lower, ranging from 50, in Virginia, to 77, in Georgia. The Gulf States, except Florida and Texas, range from 73, in Alabama, to 99, in Mississippi. In the inland Southern States, Arkansas, 98, is almost average. Some counties report fruit as appearing fair, but tending to early rot. In the other States of this region the crop is very poor—Tennessee, 46; West Virginia, 33; Kentucky, 50. North of the Ohio River the condition is still worse—Ohio averages but 33; Michigan, 64; Indiana, 31; Illinois, 38; Wisconsin, 48. West of the Mississippi the State averages are higher—Minnesota, 89; Iowa, 77; Missouri, 74; Kansas, 50; Nebraska, 61. The Pacific coast is about three-quarters of an average.

PEACHES.—The peach-crop suffered still more severely than apples from the freezes of winter and frosts of spring. The highest average condition is found in the North Atlantic States and in the Gulf States. The maximum is in Mississippi, 113, and the minimum in Ohio, 17. Of the New England States, New Hampshire falls 6 per cent. below average, but the other States are full average or above. Of the Middle States, New Jersey and Delaware, on the coast, are nearly or quite full average, while the inland regions of New York fall 25 per cent., and those of Pennsylvania 39 per cent. In Sussex, Delaware, Hale's Early

was the only variety of peaches of which the trees were full. The South Atlantic States range from nearly average, in Maryland, to 21, in North Carolina. In the Gulf States, peaches were reported as dropping from the trees in Florida, where the crop averaged but 71; in Alabama, averaged 77. In Montgomery Early Beatrice peaches were ready for shipment May 28; Early Rivers and Louise, June 1 to 5; Hale's and Tillotson's Early came in ten days later than in 1871. Mississippi has a large crop, but many counties have but a poor market. In Hinds County the fruit-growers will lose $50,000 by the failure of railroads to provide adequate transportation. Louisiana, Texas, and Arkansas, with a full average crop, complain of a tendency to rot in some places. The crop is of little value in the other inland Southern States and north of the Ohio River, where late frosts combined with spring freezes exerted their most destructive influence. West of the Missouri the prospect is a little better. The Pacific coast will not be much over a half average.

GRAPES.—Grapes have done better than either apples or peaches. Their maximum was in Arkansas, 109. The other States average or above were Delaware 100, Maryland 104, Louisiana 102, Texas 108, and Iowa 101. The New England States were all above 90. Of the Middle States, New York was 16 per cent., New Jersey 4 per cent., and Pennsylvania 3 per cent. below average. The South Atlantic and Gulf States, as a whole, averaged considerably above 90. The Scuppernong grapes still exhibit their superior vitality. The southern inland States will run about the same, but north of the Ohio the condition is somewhat lower. West of the Mississippi, Kansas and Nebraska will have but a half crop, but the other States will come nearly to average. On the Pacific coast, California is nearly average; Oregon over three-quarters.

STRAWBERRIES.—The North Atlantic States, as a whole, return over an average crop, New York and Pennsylvania being about 10 per cent. below; the southern, together, will average about 90. Ohio is but 75; but the other Northwestern States are all higher, Wisconsin and Iowa being above average. Kansas, 57, represents the lowest condition in the whole country. On the Pacific coast California reports 80, and Oregon 92.

MAINE.—*Androscoggin:* Apples almost a failure; bloom small. Fruit injured by caterpillars. Grapes look well. *Piscataquis:* Strawberries look well; not quite ripe. *Franklin:* Apples especially injured by fruit-caterpillars. *Cumberland:* Poor prospect for apples, but good for small fruit.

VERMONT.—*Franklin:* Apples badly injured by apple-worms. *Grand Isle:* Apples and fruits injured by fruit-worms.

CONNECTICUT.—*New London:* Apples half crop, peaches and grapes full crops; strawberries two weeks late, but yielded well.

NEW YORK.—*Washington:* Apple-crop light. *Niagara:* Many of the best peach-trees winter-killed; most severe injuries in good, dry peach land. *Columbia:* Apple-crop light in the north, but better toward the south. *Chenango:* Injured by June frost. *Allegany:* Cultivated fruits will be scarce, except strawberries and raspberries. *Seneca:* Apples short. *Franklin:* Apple-trees damaged by late spring-frosts; many died. *Monroe:* Apples quite promising, but dropping considerably. *Erie:* Apples small and backward; trees only part full.

NEW JERSEY.—*Warren:* Apples good for the light bloom; strawberries poor. *Burlington:* Grape-vines injured by the winter. *Gloucester:* Heavy crop of peaches.

PENNSYLVANIA.—*Northampton:* No apples. *Armstrong:* Grapes badly winter-killed. *Elk:* Fruit a total failure. *Tioga:* Apples destroyed by June frosts. *Washington:* Apples and peaches a general failure.

DELAWARE.—*Sussex:* Hale's Early the only full peach-trees. *Kent:* Slugs on pear-trees; fresh-slaked lime a good remedy.

MARYLAND.—*Caroline:* Apples and peaches good crop; strawberries cut short. *Dorchester:* Apples and peaches promise a large yield. *Calvert:* More peaches than were expected early in the spring. *Howard:* Apples and peaches, good bloom and plenty of fruit.

VIRGINIA.—*Powhatan:* Peaches, pears, and early apples frost-killed. *Henrico:* No

apples or peaches; grapes looking well though reduced by the April cold snap. *Sussex:* Few apples; no peaches or cherries; grapes very fine. *Wythe:* No peaches or apples. *Page:* Peaches very few. *Cumberland:* Fruit mostly destroyed by frost in April; a third of a crop of apples. *Fairfax:* All fruits abundant. *Highland:* Apples failed; few peaches. *Roanoke:* No fruit of any kind.

NORTH CAROLINA.—*Robeson:* Apples and peaches entirely destroyed. *Chowan:* Apples and peaches failed. *Pamlico:* Apples and peaches cut off by frosts. *Mitchell:* Grape bloom abundant. *Madison:* Apples and peaches mostly killed. *Anson:* Apples and peaches almost an entire failure. *Perquimans:* Failure. *Caswell:* Peaches an entire failure. *Alamance:* No peaches; few apples. *Davie:* Apples and peaches nearly destroyed by late frosts. *Columbus:* No fruit except grapes and blackberries. *Greene:* Apples and peaches a total failure. *Hertford:* No apples or peaches. *Moore:* No fruit except berries and small grapes. *Stanly:* The new strawberry, "Monarch of the West," is unequaled for fruitfulness, great size, and sweetness. *Onslow:* Peaches and apples a total failure. *Buncombe:* Apples and peaches mostly frost-killed; strawberries abundant. *Jones:* Apples and peaches cut off by late frosts.

SOUTH CAROLINA.—*Colleton:* Peaches scarce. *Darlington:* Fruit all frosted except Scuppernong grapes.

GEORGIA.—*Troup:* Grapes never better. *Dooly:* Mostly killed. *Gwinnett:* Peach and grape crops the best for years. *Upson:* Apples, peaches, grapes, and strawberries doing well. *Walton:* Fruit-crop short.

FLORIDA.—*Manatee:* Oranges, limes, and lemons larger for the season than ever before known. *Columbia:* Peaches still dropping. *Orange:* Orange-culture increasing; settlers coming in and planting trees by the thousand.

ALABAMA.—*Montgomery:* All fruits fine in yield and quality; Early Beatrice peaches ripened for shipment May 28; Early Rivers and Louise were ready from 1st to 5th of June; Hale's Early and Tillotson's Early, June 10 to 15. The last-named came in ten days later than in 1871. *Calhoun:* Fruit has not done well. *Marshall:* Apples and peaches almost an entire failure; grapes and strawberries fine. *Lawrence:* Peaches and grapes injured by late frosts. *Shelby:* Apples and peaches failed through frost. *Covington:* Scuppernong never fails.

MISSISSIPPI.—*Tishomingo:* Apples and peaches failed. *Madison:* Pears excellent; 50 per cent. over average. *Hinds:* Fruit-crop fine but no market; we will lose $50,000 this year by failure of the railroads to give sufficient facilities; our railroads do not foster local interests. *Smith:* Grapes rotted badly; vines heavy loaded.

LOUISIANA.—*East Baton Rouge:* Peach-crop, which was full and promising, is rotting badly; grapes could not be more promising. *Jackson:* Fruits abundant and very fine.

TEXAS.—*Cherokee:* Last year nearly three-fourths of the peach-trees bloomed the second time, but a January frost killed some, and others are dying. *Upshur:* All sorts a small yield. *Coryell:* Peaches under average from cold; grapes fine. *Collin:* Peaches a short crop. *Polk:* Peaches plenty, and of fair variety. *Williamson:* Apples fine and large; peaches short, but of superior quality; plums, large crop of superior fruit. *Titus:* Apple and peach buds winter-killed. *Austin:* All sorts injured except grapes.

ARKANSAS.—*Dorsey:* Fruit abundant but tending to rot, especially bunch-grapes; Scuppernong, very fine. *Howard:* Apples average.

TENNESSEE.—*Lincoln:* Fruit a failure in three-fourths of the county. *Fentress:* Fruit badly injured by the April freeze. *Greene:* Apples and peaches very few. *Coffee:* Fruit mostly killed by April freezes. *Henry:* Nearly a failure, except plums. *Van Buren:* Fruit mostly destroyed by spring freezes. *Williamson:* Fruit seriously damaged. *Bradley:* Small crop of fruit. *Dickson:* Fruit-crops mostly destroyed. *Robertson:* Our few apples and peaches defective and falling off. *Grainger:* Fruits generally a failure.

WEST VIRGINIA.—*Raleigh:* No apples or peaches. *Tucker:* Peaches and apples an entire failure, owing to late frosts. *Braxton:* None worthy of notice. *Cabell:* But few apples; no peaches. *Grant:* Almost an entire failure; a few late winter. *Jackson:* Apple-crop light on account of frost, and a portion now falling off; no peaches. *Marion:* Apples killed by frost in April. *Pocahontas:* Apples and peaches not worth speaking of. *Mineral:* Less than for many years. *Wood:* Killed. *Randolph:* Apples and peaches all killed; grapes, ditto. *Pendleton:* All kinds destroyed by late frost in April. *Nicholas:* All destroyed by frost in April. *Mercer:* Less than has been known for years. *Hancock:* Nearly a total failure. *Gilmer:* An entire failure. *Barbour:* Apples and peaches all killed; grapes, good prospect. *Harrison:* Apples and peaches an entire failure. *Mason:* Fruit of all descriptions almost an entire failure.

KENTUCKY.—*Trimble:* None, save blackberries; they are fine. *Jefferson:* None, save small fruits. *Boyle:* Apple and peach crops a perfect failure. *Clinton:* Apple and peach crops small, but look well. *Lincoln:* Apples and peaches an entire failure. *Spencer:* All destroyed by frost in April. *Scott:* Nearly all killed in April. *Graves:* Scarce, but looking well. *Gallatin:* A complete failure of all kinds. *Callaway:* Scarce and inferior. *Breckinridge:* Less than half a crop, but in good condition. *Anderson:*

A few apples, peaches, and grapes. *Owsley:* No fruit of any kind in the county. *Johnson:* A fine prospect for small fruits.

OHIO.—*Belmont:* All destroyed by severe frost in April. *Hocking:* A failure. *Morrow:* Very scarce. *Perry:* Some small fruit; otherwise, nearly a failure. *Sandusky:* Apples and peaches killed, and some of the peach-trees. *Coshocton:* Apples and peaches a failure; grapes, a full crop. *Jackson:* Almost an entire failure. *Medina:* Blackberries killed, but raspberries and strawberries in usual quantities. *Holmes:* All killed by late frosts. *Geauga:* The smallest crop of apples for twenty years; peaches, none at all; grapes, an average. *Fairfield:* Peach and apple crops almost a failure. *Delaware:* There has not been such a perfect failure in apples for fifty years. *Crawford:* No fruit. *Richland:* Apples and peaches an entire failure. *Athens:* Apples and peaches an entire failure; killed in April. *Seneca:* The poorest crop of apples grown for many years.

MICHIGAN.—*Kalamazoo:* Apples about half an average crop; grapes looking well; strawberries late, but a fair crop. *Van Buren:* Not over a half crop of apples; peaches killed—even the trees—except on lake shore. *Tuscola:* Prospect not encouraging. *Saint Joseph:* Very few apples; no peaches—trees nearly all killed. *Mason:* Apples, plums, and grapes nearly all lost by frost in June. *Wayne:* Apple-crop very light, and peach-crop a total failure. *Manistee:* What escaped the winter and June frosts is doing finely; peach-trees winter-killed. *Shiawassee:* Apple-crop light; peaches killed.

INDIANA.—*Floyd:* A total failure. *Clarke:* All killed by frosts in April. *Jennings:* Almost an entire failure. *Madison:* All killed. *Steuben:* A full crop of grapes. *Decatur:* All destroyed by frost in April. *Washington:* A very small crop of apples. Peaches have all fallen off. *Putnam:* But few apples and pears, and peaches all killed. Great many grape-vines winter-killed. *Noble:* No peaches and not many apples, and they are all falling off. *Martin:* Wet weather rotting the grapes. *Jasper:* Apples nearly a total failure. *Howard:* Peach and apple crop an entire failure. *Hendricks:* Apples, peaches, and pears an entire failure. *De Kalb:* Apples a failure, except Northern Spy and a few hardy varieties. *Cass:* Correspondent reports "three hundred bearing apple-trees, and not one bushel of apples." *Kosciusko:* All kinds a failure. *Tippecanoe:* All a failure, except a few varieties of small fruits. *Hamilton:* Perhaps a half crop of small fruits; otherwise an entire failure.

ILLINOIS.—*Clark:* Grapes very full; some rotting. *Madison:* Not promising. *Shelby:* Apples and peaches a failure; "will barely get a taste; grapes very fine. *Warren:* Heavy apple-bloom; but few varieties now show fruit. Peach-trees generally killed, and some grape-vines also. *White:* Peaches winter-killed. *Ogle:* A failure, except some kinds of small fruit. *DeWitt:* No apples or peaches worth mentioning; grapes never promised a better yield. *Bureau:* Apples not one-third of a crop. No peaches. Grapes, about half crop. *Boone:* Very few apples. *Carroll:* Apples, the poorest crop for years. Many grape-vines winter killed. *Livingston:* But few apples; no peaches or pears; small fruits abundant. *Massac:* Apple-crop small; peaches a failure. *Monroe:* Concord grapes full; Catawba rotting. *Moultrie:* No apples, peaches, or pears.

WISCONSIN.—*Waupaca:* Orchards dead; supposed to have been winter-killed; cranberries promise an abundant crop. *Juneau:* Apples an entire failure from late frost. *Columbia:* Apple-trees partially leaved out, but are now drying up. *Walworth:* A failure. *Dodge:* Nearly a failure. *Door:* Many of the apple-trees and nearly all plum-trees winter-killed.

MINNESOTA.—*Stearns:* Fruit-growing is still in its infancy in this county. Young apple-orchards are loaded with fruit. *Winona:* Few apple-trees in bearing, consequently but few apples.

IOWA.—*Lee:* A very short crop of apples, and peach-trees winter-killed. *Scott:* Apples very scarce; grapes and strawberries suffered by the cold winter. *Louisa:* Apples in good condition, but very scarce. *Howard:* Apples only half a crop; small fruits an average. *Hardin:* Better than last year, but fruit-growers discouraged. *Decatur:* Apples a full crop; peaches a failure.

MISSOURI.—*Franklin:* Fruit below average in quantity and quality. *Daviess:* Apples few but good. *Lincoln:* Very few apples and peaches. *Maries:* Fruit badly injured by storms. *Stoddard:* Apples few but good; peaches half crop. *Jasper:* Apples and peaches half crops. *Shelby:* Grapes either rotting or scabbed by wet and hot sun.

KANSAS.—*Clay:* Peaches nearly all killed. *Wabaunsee:* All bearing peach-trees killed last summer and fall by hot winds and grasshoppers. *Franklin:* Grapes suffered badly from grasshoppers; some vineyards and orchards entirely destroyed. *Shawnee:* Apples and peaches almost a failure. *Cloud:* All destroyed by grasshoppers, cold winter, and flat-head borers. *Anderson:* Nearly all sorts of fruit ruined by the grasshoppers. *Lyon:* Apples but 5 per cent. of last year's yield. *Leavenworth:* Only a few apples, and they injured by grasshoppers. *Douglass:* Apples, peaches, and grapes all gone. *Osage:* Peach-trees mostly dead; apples almost worthless from ravages of grasshoppers. *Mitchell:* Not so much as last year, although there are many new bearing-trees.

NEBRASKA.—*Pawnee:* Apples not generally bearing; grapes and peaches taken by

grasshoppers. *Gage:* No fruit of any kind. *Otoe:* Grasshoppers took the grapes and strawberries. *Johnson:* There will be a few peaches; grape-vines generally stripped by the grasshoppers.

CALIFORNIA.—*Sacramento:* Fruit-trees of all sorts bloomed full, but were swept by April frosts. *Nevada:* Fruit, especially early varieties, cut considerably short by spring frosts; apples and grapes in abundance. *Contra Costa:* Apples scarce; peaches a half crop; grapes excellent. *Amador:* Apples and peaches in good condition. *San Bernardino:* Spring frosts very disastrous.

OREGON.—*Clackamas:* Strawberries fine; cold rains caused much fruit to drop. *Tillamook:* Apples almost a failure; grapes a third of a crop. *Columbia:* Caterpillars playing havoc with fruit-trees on the Columbia bottoms. *Grant:* Fruit mostly frost-killed. *Linn:* Fruit-trees largely winter-killed.

THE TERRITORIES.—*Choctaw Nation, Indian Territory:* Fruit-crops unusually good. *Box Elder, Utah:* Fruit frosted. *Salt Lake, Utah:* Moths threatening apples and pears. *Kane, Utah:* Small fruit unusually fine; apples abundant.

HAY AND PASTURES.

Timothy is in maximum condition in Kentucky, 110. Only five other States are above average, viz: Texas, 106; Oregon, 105; Indiana, 104; Maine, 101; and Iowa, 101. Its minimum condition is found in New Jersey, 67. All the New England States except Maine, the Middle, South Atlantic, and Gulf States are below average. In some localities drought is stated as very severe, utterly drying up the sod, while in others army-worms and other insects have been more or less destructive. The same causes reduced the crops in the inland Southern States and north of the Ohio River. In the Northwest the grasshopper was quite injurious. On the Pacific coast this crop is replaced in California by other grasses. In Oregon it was favored by conditions generally favorable to vegetation.

Clover is not quite so good as timothy. The maximum condition was in Arkansas, 108. It was full average or above in South Carolina, 105; Oregon, 103; Maine, 102; and Mississippi, 100. Its minimum condition was in New Jersey, 57. It was in many counties badly winter-killed. Drought and worms were also injurious, cutting down the crop very seriously. In many cases old clover was entirely destroyed by its varied disasters.

Pasture shows a considerably higher average than mown grass. The maximum condition was in Illinois, 110; the other States above average were Arkansas and Nebraska, 109; Maine and Indiana, 108; Oregon and Missouri, 107; Wisconsin and Kansas, 106; Florida, 105; Mississippi, Kentucky, Ohio, and Minnesota, 103; Tennessee, 101. The minimum was in California, 65. In some counties of the latter State pasture was nearly ruined by late rains. Our correspondent in Amador explains the peculiar character of California pasturage. The ripe grass, parched in the hot summer sun, lies like hay upon the ground, well cured, and perfectly preserved for cattle to feed upon until the winter rains rot it. In the present case late spring rains have mostly spoiled it, destroying the provender for summer and fall feeding. In Iron County, Utah, grasses have been destroyed by the immense number of rabbits on the range. At least 5,000 of these animals had been destroyed by hunting-parties organized for their destruction.

MAINE.—*Aroostook:* Hay prospect never better; pastures superior. *Cumberland:* Very favorable; May and June have repaired the injuries of winter. *Waldo:* Hay-crop promising.

NEW HAMPSHIRE.—*Hillsborough:* Grass-crops fair. *Rockingham:* Injured by drought in May.

VERMONT.—*Franklin:* Hay short; badly winter-killed. *Orleans:* Grass-crops thickening up; considerably winter-killed on western slopes. *Windsor:* Improving fast. *Grand Isle:* Timothy thinned out by hard winter and dry spring. *Addison:* Not rain

enough for hay. *Lamoille:* Winter-killing but partially retrieved; crop light. *Chittenden:* Hay-crop from two-thirds to three-fourths of last year.

MASSACHUSETTS.—*Worcester:* Hay shortened by drought.

CONNECTICUT.—*Litchfield:* Lands newly seeded with either clover or timothy are tolerable, but the grass-crops generally are short.

NEW YORK.—*Oneida:* Grass shortened by drought. *Steuben:* Grasses injured, and pastures very short; hay light. *Columbia:* Grass-crops light. *Chenango:* Quite a falling off from last year in grass-crops, but improving. *Delaware:* Meadows never so near a failure. *Schoharie:* Hay light on old meadows. *Livingston:* Grass growing finely. *Dutchess:* Drought very severe. *Genesee:* Clover badly winter-killed. *Orange:* Shortest hay-crop for years. *Ontario:* Meadows short. *Seneca:* Clover light; timothy meadows considerably winter-killed and mixed with other grasses. *Sullivan:* Many meadows reduced to pasture by the drought. *Franklin:* Grass improved by late rains. *Erie:* Hay-crop very good; pasture much improved.

NEW JERSEY.—*Warren:* Pastures, clover and timothy uncommonly short. *Burlington:* Lightest crop of hay ever known. *Hudson:* Injured by extreme winter weather. *Mercer:* Hay and pastures very short.

PENNSYLVANIA.—*Northampton:* Crops short. *Cambria:* Grass rapidly improving. *Cumberland:* Short. *Bucks:* Hay lighter than for years; late pasture poor. *Armstrong:* Pasture and clover considerably winter-killed. *Clinton:* Pasture and hay short. *Lancaster:* Hay short. *Butler:* Hay injured by frost. *Franklin:* Improved hay prospect. *Montgomery:* Timothy and natural grasses improving. *Wayne:* Grass very poor. *Indiana:* Clover and timothy a half crop. *Montour:* Very little clover hay; timothy short; pasture poor; good rains of late. *Tioga:* Timothy meadows injured by June frosts. *Chester:* Severe drought; wells and springs going dry.

MARYLAND.—*Carroll:* Grass very short. *Dorchester:* Grass-crop good. *Harford:* Hay-crop one of the lightest yet known. *Montgomery:* Hay half a crop. *Calvert:* Pasture better; clover very inferior. *Cecil:* Hay below average.

VIRGINIA.—*Tazewell:* Grass-crops shortened by drought in May. *Powhatan:* Drought; pastures almost bare. *Bland:* Improved by late rains. *Spottsylvania:* Pasture good; clover and timothy shortened by drought. *Rappahannock:* Pasture and grasses short through drought. *Orange:* Pastures good, but clover and timothy were injured by the hard winter and spring. *Henrico:* Clover reduced half and timothy a third by cold weather. *Craig:* Great improvement; rain. *Halifax:* Pastures greatly improved; clover injured by frost in April and drought in May. *Mecklenburgh:* Clover frosted in spring. *Wythe:* Pastures and meadows short. *Charles City:* Clover shortened by cold weather; timothy good, what little is raised. *Elizabeth City:* Pasture nearly ruined by drought. *Grayson:* Improved by rains. *Fairfax:* Brought out wonderfully by late rains. *Highland:* Rains have improved grass-crops. *Roanoke:* Failure in all grass-crops. *Goochland:* Hay-crop ruined, especially clover. *Nansemond:* Dried up. *Montgomery:* Orchard-grass increasing; seed cheap, and its fattening power as good as that of any other grass sown.

NORTH CAROLINA.—*Gaston:* Crab-grass not so troublesome as usual, enabling farmers to work their lands better. *Henderson:* Clover almost frozen out. *Beaufort:* First crop almost a failure; frozen out; second will be better. *Mitchell:* Alsike clover a decided improvement over the red. *Alamance:* Natural meadows fine; cultivated grasses average. *Davidson:* Grasses injured by cold. *Edgecombe:* Grass-crops injured by drought. *Hertford:* Pastures dry. *Haywood:* Season favorable for clover and other grasses. *Buncombe:* Pastures and meadows good. *Clay:* Alsike clover, from the Department, yielded 8¾ tons of hay per acre. There will be a great demand for seed next spring.

GEORGIA.—*Forsyth:* Clover doing well. *Towns:* Clover promises to be a success. *Hall:* Pasture and clover shortened by drought. *Upson:* Pastures good. *Cobb:* Pasture failing.

FLORIDA.—*Putnam:* Guinea-grass does well on good land; three crops per annum.

ALABAMA.—*Chambers:* More attention to grasses; timothy and lucern attracting attention. *Calhoun:* Too dry. *Marshall:* Pasture good on the range.

MISSISSIPPI.—*Greene:* Clover fails on our sandy soils. *Winston:* Kentucky blue-grass, from the Department, does well.

TEXAS.—*Collin:* Pasture unusually weedy. *Goliad:* The native (*Panicum fasciculatum*) is preferred to any other grass, and its propagation is rapidly increasing. *Kaufman:* Clover almost died out. *Hunt:* Pasture shortened by drought and grasshoppers.

ARKANSAS.—*Independence:* Increased attention to grasses.

TENNESSEE.—*Lincoln:* Season favorable to spring clover. *Carter:* Clover damaged by drought, but recovering from late and abundant rains. *Greene:* Clover poor; timothy healthy; army-worm destroyed some meadows. *Monroe:* Meadows greatly improved by late showers. *Johnson:* Meadows improved by late rains. *Wilson:* Pasture never better. *Obion:* Meadows ruined by army-worms. *Blount:* Pastures dry; clover almost a failure. *Montgomery:* Hay of all kinds heavy. *Robertson:* Spring clover looks well. *Giles:* Grass-crops harvested above average.

WEST VIRGINIA.—*Braxton:* Short. *Cabell:* Much below an average. *Jackson:* Short from early drought. *Marion:* Many meadows not worth cutting; pastures short. *Pocahontas:* Short, especially timothy. *Pendleton:* Pastures and meadows reviving, but too late to make full crop of hay. *Mercer:* Hay light; pastures short. *Hancock:* Native grasses thrifty; clover and timothy below, but general crops an average. *Barbour:* Injured by drought. *Monroe:* Very fine; never better. *Preston:* Greatly improved. *Harrison:* Pastures good; meadows light. *Mason:* Pastures improving rapidly.

KENTUCKY.—*Hardin:* Pasture shorter than for years; clover winter-killed; farmers depend almost entirely on clover for grazing. *Lincoln:* Hay short, but pasture fine and abundant. *Pendleton:* Promising. *Metcalfe:* Hay and pasturage good. *Logan:* Clover having been destroyed by worms and winter, farmers sowed wheat-lands with clover and timothy in February and March, producing a stand the like of which "has not been seen in a generation." *Gallatin:* Very fine and season favorable. *Callaway:* Clover winter-killed. *Cumberland:* Clover and timothy looking fine.

OHIO.—*Ross:* Shortened by freezing in April; meadows being pastured. *Trumbull:* Old meadows poor. *Morrow:* Improving; clover mostly killed. *Perry:* Growing rapidly. *Coshocton:* Up to a full average. *Holmes:* Clover badly frozen; not over half crop. *Harrison:* Below an average, owing to drought. *Hancock:* Very abundant, except clover, which was winter-killed. *Delaware:* Clover winter-killed; timothy quite good; pastures fine. *Van Wert:* Clover killed; less than an average. *Henry:* Clover heavy, down and rotting, too wet to cut; timothy never better.

MICHIGAN.—*Kalamazoo:* Pasturage excellent thus far. *Menomonee:* Looks badly. *Wexford:* Dry weather; meadows very poor. *Delta:* Injured by hard frost in June. *Branch:* Very heavy, but weather unfavorable for making hay. *Hillsdale:* Not promising; clover almost run out. *Mecosta:* Damaged by frost. *Lake:* Damaged by frost in June. *Grand Traverse:* Suffering from drought. *Wayne:* Shortened by drought. *Manistee:* In good condition until frosts of June 12 and 13. *Livingston:* Clover winter-killed. *Shiawassee:* Pasture good, but beginning to suffer from drought. *Oakland:* Hay-crop light.

INDIANA.—*Grant* Pasture was never better. *Clarke:* Pastures very fine. *Jennings:* Very fine. *Franklin:* Timothy good, and is our only dependence for hay. *Perry:* Extra crop of grass and clover. *Steuben:* Clover lodged, and too wet to cut. *Warren:* Pastures look well; timothy was never better. *Whitley:* Timothy meadows never looked better; have more pasture than can be used. *Washington:* Timothy looks well, but breadth not large. *Pike:* Pastures good. *Marshall:* Hay in great danger from continued rains; crop an average. *Crawford:* Winter-killed; season favorable for what remained. *Cass:* Badly winter-killed. *Scott:* Badly winter-killed. *Lake:* Timothy thin on the ground; clover badly winter-killed.

ILLINOIS.—*Pike:* Did not make a strong growth on account of early drought; pasture improving. *Clark:* More than an average. *Madison:* Has suffered to some extent by army-worm. *Menard:* Clover damaged to some extent by hard winter. *Vermillion.* Pastures growing finely, but timothy and clover below an average on account of drought, grub-worms, and winter. *Shelby:* Clover rotting on the ground; timothy never better; too wet for hay-making. *De Kalb:* Will not be an average. *White:* Clover winter-killed. *Putnam:* Clover all winter-killed. *Randolph:* Timothy badly injured by the army-worm. *Cook:* Clover badly killed out. *Boone:* Winter-killed; scarcely any in the county. *Sangamon:* Pastures improving; old clover killed; young growth doing well; timothy somewhat injured by the army-worm. *Livingston:* Pastures very good; meadows fair. *Mason:* Timothy light; old clover killed; young clover doing well. *Montgomery:* Hay will be abundant. *Massac:* Clover badly winter-killed; timothy fine. *Monroe:* Timothy is the standard hay here; grew finely, but has been injured by the army-worm. *Moultrie:* Timothy badly down. *Fayette:* Grass and pasture splendid.

WISCONSIN.—*Waupaca:* Never looked better. *Walworth:* Crop heavy; pasturage never better; hay-making difficult on account of frequent rains. *Green:* Hay and pasture never better. *Saint Croix:* Injured by early drought, but improving with recent rains; cannot come up to an average.

MINNESOTA.—*Steele:* Wild-grass meadows have only an average growth. *Sibley:* Timothy and pastures badly injured by grasshoppers.

IOWA.—*Franklin:* Clover badly winter-killed. *Lee:* Clover nearly all killed. *Scott:* Clover and timothy badly winter-killed. *Louisa:* Hay-crop will be very light. *Howard:* Pasturage, both wild and tame, better than usual; low lands, being submerged, give poor promise for wild hay. *Hardin:* All kinds flourishing. *Madison:* A large part of clover winter-killed.

MISSOURI.—*Cass:* Prairie-grass fine, but immense herds of cattle have been imported to eat it down; but little hay will be cut. *Howard:* Timothy eaten by army-worms, and clover winter-killed. *Saint Genevieve:* Timothy badly injured by army-worms. *Saint Clair:* Millet culture increasing. *Madison:* Timothy almost destroyed by army-worms. *Jasper:* Alfalfa a success. *Dallas:* Much chess in timothy. *Cole:* Pasture

splendid. *Clay:* Pastures destroyed by grasshoppers. *Carroll:* Clover badly winter-killed, but coming on from seed; fine weather has brought timothy up to average. *Shelby:* Pasture good, except in flat land. *Newton:* Grass abundant.

KANSAS.—*Washington:* Millet promising. *Jefferson:* Clover and timothy swept by grasshoppers. *Ellis:* Millet and Hungarian grass extensively raised and looks well. *Crawford:* Cattle doing well on the range. *Cowley:* Pasture good; no timothy or clover grown here. *Osage:* Clover all winter-killed; timothy badly damaged.

NEBRASKA.—*Richardson:* Grasshoppers took everything green. *Webster:* Pastures fine. *Otoe:* Timothy and clover eaten by grasshoppers. *Johnson:* Pasture excellent; timothy injured by grasshoppers.

CALIFORNIA.—*Nevada:* Hay-crop fair, but injured by heavy rains in the stack; pasture nearly ruined. Farmers are seeding irrigated land with clover. *Alameda:* Hay injured in the field by rain. *Contra Costa:* Pastures scanty; injured by late unseasonable rains. *Amador:* The value of our pasturage depends upon the ripe grass, which lies upon the ground like hay until the winter-rains rot it. A late rain has nearly destroyed the feed by washing this hay; pasture very short.

OREGON.—*Clackamas:* Pastures excellent, also clover and timothy. *Tillamook:* Pasture and grasses never better. *Columbia:* Pastures never better. *Grant:* Growth of grass favored by abundant rains.

THE TERRITORIES.—*Iron, Utah:* Grass very poor on account of drought and the immense numbers of rabbits on the range. At least 5,000 rabbits have been killed by hunting-parties, and still they are destroying our crops. *Yankton, Dakota:* Grass of rank growth. *Clalam, Washington:* Timothy attacked by army-worms, which caused our farmers to commence hay-making sooner than they intended.

Table showing the condition of the crops, &c.—Continued.

States.	BEANS.		SORGHUM.		SUGAR-CANE, (*not Sorghum.*)		TOBACCO.		COTTON.	WOOL.	APPLES.	PEACHES.	GRAPES.	STRAWBERRIES.
	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.	Average condition July 1st.	Am't of wool, *in hundredths*, compared with last year.	Average condition July 1st.	Average condition July 1st.	Average condition July 1st.	Product compared with last year.
Maine	102	97	.....	.....	.....	.....	.....	.....	.....	101	80	.....	97	103
New Hampshire	101	98	.....	.....	.....	.....	70	90	.....	98	82	94	92	103
Vermont	97	98	.....	.....	.....	.....	.....	.....	.....	97	102	.....	97	106
Massachusetts	99	100	.....	.....	.....	.....	75	92	.....	97	72	107	92	105
Rhode Island	100	100	.....	.....	.....	.....	.....	.....	.....	90	75	100	96	100
Connecticut	100	99	.....	.....	.....	.....	98	90	.....	102	56	103	90	96
New York	99	94	.....	.....	.....	.....	100	93	.....	96	71	75	84	88
New Jersey	90	100	.....	.....	.....	.....	.....	.....	.....	101	61	103	96	92
Pennsylvania	98	94	90	82	.....	.....	100	81	.....	98	63	61	97	94
Delaware	110	100	90	100	.....	.....	.....	.....	.....	100	62	97	100	102
Maryland	99	99	91	96	.....	.....	104	101	.....	100	90	99	104	98
Virginia	97	96	90	85	.....	.....	130	97	96	96	50	34	97	77
North Carolina	100	93	93	94	.....	.....	133	102	95	98	53	21	93	89
South Carolina	101	85	100	100	97	97	107	105	99	101	53	48	83	88
Georgia	100	98	111	96	101	96	95	92	97	99	77	80	99	94
Florida	136	100	.....	.....	86	90	123	103	101	99	100	71	97	97
Alabama	95	92	103	97	94	92	90	87	102	97	73	77	91	91
Mississippi	98	102	120	108	108	103	116	102	103	104	99	113	99	96
Louisiana	.....	.....	.....	.....	98	100	93	88	105	101	98	101	102	96
Texas	103	97	109	97	95	90	100	94	93	103	101	100	108	94
Arkansas	103	102	136	101	.....	.....	110	102	104	107	98	100	109	103
Tennessee	104	104	100	99	.....	.....	303	106	109	99	46	28	93	86
West Virginia	102	99	95	95	.....	.....	131	97	.....	102	33	31	85	90
Kentucky	106	104	96	97	.....	.....	323	134	.....	100	50	38	87	69
Ohio	102	102	89	94	.....	.....	125	98	.....	95	33	17	78	75
Michigan	103	99	.....	.....	.....	.....	.....	.....	.....	99	64	18	82	96
Indiana	111	100	105	96	.....	.....	149	102	.....	99	31	25	88	92
Illinois	97	99	94	95	.....	.....	156	95	.....	97	38	40	89	89
Wisconsin	105	97	81	95	.....	.....	83	90	.....	108	48	.....	92	103
Minnesota	125	98	131	90	.....	.....	.....	.....	.....	111	89	.....	101	91
Iowa	99	96	94	92	.....	.....	.....	.....	.....	101	77	.....	98	104
Missouri	105	97	97	98	.....	.....	160	102	108	97	74	60	92	78
Kansas	103	108	110	102	.....	.....	89	86	.....	123	50	61	59	57
Nebraska	113	94	106	95	.....	.....	.....	.....	.....	131	61	21	54	65
California	95	89	.....	.....	.....	.....	.....	.....	.....	111	75	50	97	80
Oregon	92	90	.....	.....	.....	.....	.....	.....	.....	110	78	70	79	92

Table showing the condition of the crops, &c., on the first day of July, 1875.

States.	CORN.		WHEAT.		RYE.		OATS.	BARLEY.		PASTURE.	CLOVER.	TIMOTHY.	POTATOES, (*Solanum tuberosum.*)		POTATOES, (*Batatas edulis,*) SWEET.	
	Acreage compared with last year.	Average condition July 1st.	Average condition of winter-wheat July 1st.	Average condition of spring-wheat July 1st.	Average condition of winter-rye July 1st.	Average condition of spring-rye July 1st.	Average condition July 1st.	Average condition of winter-barley July 1st.	Average condition of spring-barley July 1st.	Average condition July 1st.	Average condition July 1st.	Average condition July 1st.	Acreage compared with last year.	Average condition July 1st.	Acreage compared with last year.	Average condition July 1st.
Maine	94	89	91	101	93	100	103	.....	100	108	102	101	103	99	.....	.....
New Hampshire	102	93	98	99	99	101	100	.....	98	97	94	92	99	96	.....	.....
Vermont	102	94	70	100	101	101	101	.....	99	98	90	85	100	99	.....	.....
Massachusetts	91	92	.....	.....	99	91	102	100	99	93	91	73	93	93	.....	.....
Rhode Island	89	82	.....	.....	95	100	95	.....	92	85	70	72	85	75	.....	.....
Connecticut	107	94	87	.....	88	.....	97	97	90	91	71	77	98	92	.....	.....
New York	100	91	45	91	77	90	94	.....	97	91	77	81	101	96	.....	.....
New Jersey	101	96	63	.....	90	.....	82	.....	.....	72	57	67	87	94	102	99
Pennsylvania	103	92	78	88	90	97	98	94	89	83	79	81	96	94	104	94
Delaware	102	97	93	.....	100	.....	85	.....	.....	77	87	80	88	64	95	95
Maryland	103	99	76	.....	92	.....	85	.....	.....	83	75	77	82	80	105	98
Virginia	103	95	83	.....	94	.....	74	.....	.....	81	73	71	99	95	100	95
North Carolina	101	98	102	.....	96	.....	97	.....	.....	98	96	97	105	98	100	99
South Carolina	104	99	95	.....	100	99	95	102	100	98	105	.....	99	95	101	99
Georgia	104	97	108	.....	99	.....	94	100	.....	96	94	83	90	95	103	95
Florida	100	91	.....	.....	100	.....	101	.....	.....	105	.....	.....	89	99	101	95
Alabama	107	98	106	.....	103	.....	96	.....	.....	94	93	88	98	86	95	88
Mississippi	115	112	113	.....	101	.....	108	.....	.....	103	100	.....	106	104	112	109
Louisiana	113	104	.....	.....	.....	.....	104	.....	.....	99	.....	.....	107	100	101	99
Texas	111	100	135	.....	102	.....	105	111	.....	99	.....	.....	114	112	103	93
Arkansas	123	109	117	.....	119	.....	116	.....	.....	109	108	106	127	125	107	106
Tennessee	112	109	102	.....	103	.....	92	97	.....	101	91	92	112	104	101	101
West Virginia	112	105	64	.....	86	.....	97	.....	.....	96	88	89	102	99	104	97
Kentucky	105	109	82	.....	95	.....	105	92	.....	103	93	110	103	116	104	100
Ohio	106	95	71	90	89	.....	103	72	100	103	67	92	108	108	102	101
Michigan	111	94	79	95	93	100	96	108	102	92	86	85	112	101	.....	.....
Indiana	108	94	69	74	85	.....	110	79	93	108	88	104	135	110	100	109
Illinois	106	91	76	96	97	97	103	94	97	110	85	97	116	118	103	99
Wisconsin	115	82	97	97	100	100	104	97	88	106	94	99	104	102	.....	.....
Minnesota	117	85	89	102	91	103	106	.....	107	103	98	98	104	107	.....	.....
Iowa	111	87	95	99	97	109	105	102	102	109	96	101	107	106	106	99
Missouri	112	103	72	72	96	88	112	94	86	107	98	96	106	111	106	100
Kansas	123	95	91	85	96	.....	86	.....	85	106	66	74	88	98	90	91
Nebraska	160	84	.....	71	103	91	90	.....	89	109	.....	81	122	100	85	80
California	99	93	76	55	78	.....	84	82	86	65	95	.....	87	85	105	84
Oregon	100	89	102	106	98	99	103	99	101	107	103	105	105	96	.....	.....

EXTRACTS FROM CORRESPONDENCE—FARMING PROSPECTS.

York, Maine.—Labor available; farmers hopeful.

Chenango, New York.—Since the late warm rains everything seems to jump rather than grow.

Perquimans, North Carolina.—Cotton-planters in low spirits.

Davidson, North Carolina.—Rapid tendency to concentrate on fewer acres.

Haywood, North Carolina.—This county is paying increased attention to grass-crops; a cheese-factory has been built and is doing well.

Edgefield, South Carolina.—There being no elections this year, there is much harmony among all classes; labor quite satisfactory.

Clayton, Georgia.—Our prospect of living this year is rather encouraging. Our people will raise their own corn, and will not require an importation from Tennessee and the West.

Taliaferro, Georgia.—Crop-prospects never better since 1865.

Fayette, Georgia.—Crops, generally, are as good as I have seen in many years.

Douglas, Georgia.—Farmers are in much better condition than last year, not having contracted so many debts. The repeal of the lien-law has compelled greater economy.

Glynn, Georgia.—Rice-crop promising. Market-gardening assuming the proportions of a regular business.

Laurens, Georgia.—More attention to provision-crops, especially wheat. The credit system is on the decline, much to the benefit of all parties.

Richmond, Georgia: Labor plenty and much improved owing to the erection of public works.

Madison, Florida.—Labor improving.

Jefferson, Florida.—Labor improving. Farmers do but little business with commission-merchants.

Choctaw, Alabama.—Farmers raising more cereals and using more economy; buying less on credit; working more, thinking more, and prospering more.

Macon, Alabama.—Crops unusually diversified and cultivated at lower cost; planters not so much in debt; negroes working better and better satisfied.

Amite, Mississippi.—More corn planted and less cotton; better culture.

Wayne, Mississippi.—The colored people are working more steadily than heretofore, and more of them are engaged in planting on account of the decline of the lumber business.

Lauderdale, Mississippi.—The most favorable season I have ever known here; crop-prospects the best for ten years.

Lee, Mississippi.—Such a growing season was never known here; no drought or excess of rain, except in a few places.

Wilkinson, Mississippi.—The best report I have ever been permitted to make. Crops late starting, but the very favorable weather of May and June enabled farmers to push work, and get everything in good condition, while the crops have been growing finely.

Marion, Mississippi.—Most favorable season for many years; crops all in fine condition.

Covington, Mississippi.—Fine seasons; laborers have worked better than ever before.

Iberia, Louisiana.—Excellent season; all crops in a most flourishing condition.

Union, Louisiana.—This year has been one of the most favorable to the farmer; unusually large acreage in grain-crops.

Morehouse, Louisiana.—Hands working well and crops clean.

Washington, Texas.—Money scarce; interest from 2½ to 3 per cent. a month, with best real estate security.

Fannin, Texas.—A very large surplus of wheat, probably a million and a half of bushels, in Fannin and Grayson Counties, to which the exorbitant charges will forbid shipment.

Limestone, Texas.—Crops of nearly every kind present a flattering appearance.

Lamar, Texas.—Best crop-prospect for years.

Garland, Arkansas.—In our start this year we feared we would make nothing on account of the cold, but we have had the best season ever known here; great rejoicing among farmers.

Cross, Arkansas.—Prospects of a bountiful yield of all crops.

Crittenden, Arkansas.—Crop-prospects better than for years.

Dorsey, Arkansas.—Season as good as heart could desire.

Ouachita, Arkansas.—All crops fine; best of prospects for the year.

Izard, Arkansas.—Thrashing has commenced, which closes the terrible destitution caused by the failure of last year's crops. Confidence is at last restored, and a more encouraging outlook for the farmer than since 1860. The increased area in cereals and decreased area in cotton are already showing benign effects.

Calhoun, Arkansas.—Best crop prospects for twenty-five years.

Giles, Tennessee.—We never worked harder, cultivated more thoroughly, nor had better prospects. Tennessee has now a dog-law; fewer lambs are killed and more dog-skins go to the tan-yard.

Obion, Tennessee.—Crops never more prosperous.

Raleigh, West Virginia.—Farmers generally in good spirits.

Cabell, West Virginia.—Vegetation growing rapidly.

Mineral, West Virginia.—Poorest small-grain and fruit-crops for many years.

Pendleton, West Virginia.—Prospects greatly improved.

Preston, West Virginia.—Good growing season.

Laurel, Kentucky.—Seasonable weather; crops look well.

Jefferson, Kentucky.—Weather favorable to all crops.

Daviess, Kentucky.—Farmers went to work with more than usual energy, but crops injured by heavy rains.

Todd, Kentucky.—Heavy flooding rains; farmers estimate their damages at hundreds of thousands of dollars.

Christian, Kentucky.—Finest crops for many years.

Scott, Kentucky.—All crops promising.

Hopkins, Kentucky.—Injurious rains.

Grayson, Kentucky.—Destructive storms.

Graves, Kentucky.—Crops look remarkably well.

Gallatin, Kentucky.—Too much wet.

Monroe, Kentucky.—All crops doing well.

Belmont, Ohio.—Prospects unpromising.

Williams, Ohio.—Crops doing well.

Perry, Ohio.—Crops doing well.

Washington, Ohio.—Good growing weather; prospects improving.

Hardin, Ohio.—Growing finely.

Harrison, Ohio.—Crops generally promising.

Geauga, Ohio.—Prospects encouraging.

Menomonee, Michigan.—Crops backward and unpromising.
Delta, Michigan.—Crops doing well.
Mason, Michigan.—Injurious frosts.
Iosco, Michigan.—Crops injured by frost, but coming on well now.
Ionia, Michigan.—Injurious drought.
Grand Traverse, Michigan.—Damaging frost.
Calhoun, Michigan.—Auspicious for crops.
Ottawa, Michigan.—Rain at last; prospect improving.
Montcalm, Michigan.—Very dry; no rain for five weeks.
Howard, Indiana.—Cereals damaged by rain and the wheat-midge.
Tippecanoe, Indiana.—Farming-interests prospering.
Clay, Indiana.—Damaging rains.
Hamilton, Indiana.—Bad season for farmers; too wet.
Lake, Indiana.—Too wet for cultivation.
Brown, Indiana.—Heavy rains and high waters.
Clarke, Indiana.—Plenty of rain; not too much.
Jennings, Indiana.—Wet season; crops fine.
Spencer, Indiana.—Excessive rain.
Madison, Indiana.—Farmers discouraged.
Perry, Indiana.—Best season for five years.
Orange, Indiana.—Crop-prospects mostly favorable.
Ripley, Indiana.—Crops growing rapidly.
Morgan, Indiana.—Excessive rain.
Lawrence, Indiana.—Injurious rains.
Knox, Indiana.—Rains damaging grain in the shock.
De Witt, Illinois.—Injurious rains.
Carroll, Illinois.—Vegetation rapid.
Cass, Illinois.—Excessive rains.
Morgan, Illinois.—Too much rain; fields deluged.
Piatt, Illinois.—Vegetation luxuriant.
Moultrie, Illinois.—Too wet for harvesters; using cradles.
Cumberland, Illinois.—Rain injuring harvesting.
Winnebago, Illinois.—Growth large and rapid.
Williamson, Illinois.—Excessive rains.
Warren, Illinois.—Very rainy.
Saint Clair, Illinois.—Too wet.
Ogle, Illinois.—Crops generally promising.
Logan, Illinois.—Too much rain for cultivation.
Jersey, Illinois.—Too wet for insects.
Hancock, Illinois.—Destructive hail-storms.
Grundy, Illinois.—Destructive hail-storms.
Effingham, Illinois.—Too wet for harvesters.
Edwards, Illinois.—Nearly flooded out.
Clark, Illinois.—Wool-growing driven off by dogs.
Clinton, Illinois.—Excessive rains.
Menard, Illinois.—Excessive rains; crops full of grass and weeds.
Vermillion, Illinois.—Exceedingly wet.
Pope, Illinois.—Too much rain.
Shelby, Illinois.—Wettest season for thirteen years.
Waupaca, Wisconsin.—Grain and grass never looked better.
Trempealeau, Wisconsin.—All crops look well except corn.
Douglas, Wisconsin.—But little growth yet.
Milwaukee, Wisconsin.—Crops coming out finely.
Crawford, Wisconsin.—Large crops anticipated.
Chippewa, Minnesota.—The prospect was never better for a large crop of small grain.

Waseca, Minnesota.—Expecting great crops.
Stevens, Minnesota.—Prospects charming.
Steele, Minnesota.—Crops promising.
Swift, Minnesota.—Crops generally good, except corn.
Jones, Iowa.—Prospect not encouraging.
Des Moines, Iowa.—Not very flattering.
Grundy, Iowa.—Two weeks more of rain would be fatal.
Cass, Iowa.—Prospect of small grain unprecedented.
Johnson, Iowa.—All crops in splendid condition.
Ozark, Missouri.—No impediment in farming this year; no chinches or grasshoppers; crops mostly in fine condition.
Greene, Missouri.—The lengthened visage of the farmer broadens.
Camden, Missouri.—Agricultural outlook flattering; wool-raising and tobacco-raising rapidly increasing.
Johnson, Missouri.—The grasshopper scourge is terrible, reducing the best farmers to absolute want. Stock has been driven to more favored sections to graze. Not a particle of hay or straw, except prairie hay, can be had for fodder for the coming winter. Farmers are putting in an increased acreage of corn-fodder. Clover and timothy meadows killed dead; grapes and flax all destroyed. Not a bunch of lettuce, a carrot, a cucumber, a pumpkin, or other vegetable is left. The rich and fruitful county of Johnson, second to none in the State, is ruined.
Randolph, Missouri.—Except wheat, there was never known a better crop prospect.
Perry, Missouri.—Everything looks well.
Clay, Missouri.—Crops destroyed by grasshoppers. We can scarcely realize the humiliation of our rich and fertile county; a degree of destitution unknown before.
Wayne, Missouri.—If it continues seasonable, we will raise more than in the last three years.
Pemiscot, Missouri.—Finest prospects for abundant crops for many years.
Jackson, Kansas.—Farmers seeing hard times for eatables, except flour; grasshoppers took the gardens.
Furnas, Nebraska.—Poor farming has caused the south slopes to dry out, reducing the total condition of the crop. Good farming on the north slopes shows good average condition.
Dixon, Nebraska.—Crops all looking very finely; promise an abundant yield, especially wheat.
Sonoma, California.—Taken together, crop prospects are more than fair.
Sacramento, California.—On the 6th of April we had a severe freeze, which killed vegetable and fruit crops, and severely injured grain-crops; that, together with drought and north winds, has been disastrous to the farming interests.

ENTOMOLOGICAL RECORD.

By Townend Glover, Entomologist.

Insect injuries.—A few very destructive species of insects are noted by our correspondents as ravaging the crops in different parts of the country. Of these the most prominent are the *grasshoppers*, (*Caloptenus sp.*) The well-known species *C. femur-rubrum*, or red-legged

grasshopper, is reported at various isolated localities in the Eastern States and in the Mississippi Valley. In Windsor, Vermont, Bedford, Pennsylvania, Hocking, Ohio, and Menomonee, Michigan, they had appeared, but no injuries were noted. They were more or less destructive in Trousdale, Tennessee, and in Harrison, Ohio. In Livingston, Kentucky, they were reported as destroying tobacco-plants in old ground. A farmer in Jefferson, West Virginia, succeeded in destroying thirty bushels of these pests by attaching a seine to the rear of a horse-rake, and driving through a field thickly covered with them.

A species, not easy to identify from the description given by our correspondents, injured corn on stiff swamp-lands in Clarke, Alabama. A great cloud of these insects was seen moving eastward over the south part of Autauga, Alabama. A grasshopper, very different from any before seen, was noted in Outagamie, Wisconsin.

The *C. Spretus*, or migratory western grasshopper, appeared in several counties of Minnesota. Blue Earth offered a bounty for their destruction. About 20,000 bushels were collected and destroyed, at a cost of $32,000, without perceptibly diminishing their numbers. They were very destructive in Nicollet, McLeod, and Todd; but in Wright, Cottonwood, and Mille Lacs they were comparatively innocuous.

In Iowa, Montgomery County had a very destructive visitation in the western part, the greatest injury being to the corn-crop. They are also noted in Lyons, Audubon, Cherokee, Adams, Mills, Cass, Woodbury, and Harrison. They did serious damage in the western part of Caldwell, Missouri, and in Daviess and Vernon. They swept all crops in Clay; but their injuries were comparatively trifling in Harrison. In Carroll they chewed tobacco.

In Hunt, Texas, they were injurious to the cotton-plant.

Kansas reports, as usual, a very serious amount of damage. In Marshall, three-fourths of the crops were destroyed, and equal damage sustained in Douglas and Doniphan. They were very bad in Neosho, Franklin, Jefferson, Wyandotte, Woodson, Nemaha, Miami, Cloud, Brown, Anderson, Allen, Republic, Johnson, and Osage. Lighter visitations are reported in Sumner, Shawnee, Reno, Jackson, Howard, and Crawford. In Franklin, the insects bore upon their bodies a destructive red parasite. This parasite was also noticed in Washington, together with a green fly, laying eggs in the body of the insect. In Miami, a grape-vine was saved by mulching with night-soil.

In Nebraska, they are reported as more or less injurious in Nuckolls, Franklin, Clay, Antelope, Johnson, Cass, Otoe, Gage, Hall, Knox, Madison, Stanton, and Richardson.

Cut-worms, (*Agrotis* sp.)—Different species of this genus are reported. In Franklin, Vermont, they injured corn; and in New London, Connecticut, corn, potatoes, and beans. Saratoga, Wyoming, Dutchess, and Genesee, New York; Westmoreland and Armstrong, Indiana; Washington, Pennsylvania; Caroline, Harford, and Montgomery, Maryland; Greenville, Virginia; Yadkin, North Carolina; Fannin, Georgia; and Madison, Florida, all report injury to field-crops. In Bandera, Texas, they cut off four-fifths of the cotton-crop. They were also injurious in Marion, West Virginia; Mahoning, Ohio; Van Buren, Michigan; and Maries and Montgomery, Missouri. They were especially destructive to sod-corn.

Colorado potato-beetle, (*Doryphora decem-lineata.*)—This insect has increased its destructive operations in the East, with serious demonstrations at various points in the West. It is reported in Oneida, Niagara, Queens, Rockland, Westchester, Delaware, Montgomery, Saratoga,

Wyoming, Jefferson, Orange, and Erie, New York. In Niagara the eggs were extensively destroyed by other insects. New Jersey complains of a visitation in Atlantic, Burlington, Monmouth, Camden, Gloucester, Hudson, Sussex, and Salem. In Pennsylvania they were noted in Cumberland, Westmoreland, Bucks, Columbia, McKean, Armstrong, Forest, Clinton, Lancaster, Butler, Bedford, Northumberland, Wayne, Indiana, Lehigh, Lycoming, Montour, Tioga, Washington, Dauphin, Luzerne, and Susquehanna. They were quite destructive in Kent and Sussex, Delaware. Maryland reports them in Caroline, Worcester, Frederick, Carroll, Baltimore, Dorchester, Harford, Wicomico, Cecil, and Howard. In Virginia their mischievous presence was felt in Culpeper, Roanoke, Spottsylvania, Augusta, Orange, Cumberland, Craig, Westmoreland, and Prince William. They also appeared, too late for early crops, in Richland, Louisiana. They did slight damage in Warren and Grundy, Tennessee. More or less injury was done in Wetzel, Tucker, Morgan, Marion, Jefferson, Mineral, Pendleton, Mercer, Hancock, Monroe, Preston, and Mason, West Virginia; in Jefferson, Spencer, Shelby, Lincoln, and Scott, Kentucky; in Trumbull, Perry, Morrow, Coshocton, Medina, Fairfield, and Crawford, Ohio; in Menomonee, Branch, Van Buren, Tuscola, Lake, Grand Traverse, Charlevoix, and Monroe, Michigan; in Rush, Decatur, Pike, and Tippecanoe, Indiana; in Lake, Madison, De Kalb, Fulton, Ogle, Macon, Iroquois, Hancock, De Witt, and Cook, Illinois; in Douglas, Columbia, Clark, and Green, Wisconsin; in Wright, Isanti, Sherburne, and Mille Lacs, Minnesota; in Dubuque, Story, and Howard, Iowa; in Vernon, Missouri; in Labette, Kansas; in Franklin, Mitchell, and Antelope, Nebraska. At various points the insects were successfully resisted with Paris green and other poisons; at others domestic fowls were turned into the potato-field, and found to be excellent scavengers. No reports of injury to the fowls.

Chinch-bugs, (*Micropus* [*Rhyparochromus*] *leucopterus*).—These insects do not appear to have recommenced operations on any considerable scale in the East. Halifax and Prince William, Virginia, found them somewhat troublesome in corn and wheat. They are also reported in De Soto, Mississippi; Limestone, Texas; Edwards, Clinton, Marion, Winnebago, Ogle, Macon, Hancock, Crawford, and Carroll, Illinois; Sauk, Vernon, Iowa, Columbia, Walworth, Green, Milwaukee, Dodge, La Fayette, and Crawford, Wisconsin; Gasconade, Vernon, Stone, Montgomery, Ballinger, and Newton, Missouri; Labette, Cherokee, Woodson, and Montgomery, Kansas.

Cotton-insects.—Caterpillars (*Anomis xylinæ; Aletia argillacea* of Hubner) were noted in Limestone, Bosque, Walter, and Matagorda, Texas, and in Woodruff, Arkansas; injuries small. Boll-worms (*Heliothis armigera*) are reported in Polk, Texas; cotton-lice (*Aphides*) in Chowan, Perquimans, Camden, and Edgecombe, North Carolina. In the last named it is specified that the insect in question is the blue or root louse, more destructive than the ordinary leaf-louse. These insects are also reported in Wayne and Jasper, Mississippi; in Smith, Texas; and in Van Buren, Arkansas. Cotton-grass-worms were destructive to cotton during two weeks in Hamilton, Texas. Web-worms (?) are reported in Travis, Texas.

Miscellaneous.—Apple-worms (*Carpocapsa pomonella*) were destructive to fruit in Franklin, Vermont; Columbia, Oregon; and Salt Lake, Utah; fruit-caterpillars (*Clisiocampa*) in Androscoggin and Franklin, Maine; coddling-moths, cabbage-worms, (*Pieris rapæ, &c.,*) and currant or gooseberry worms in Westmoreland, Pennsylvania; bud-worms (?) in Hay-

wood, North Carolina; wire-worms (*Elater* sp.) in Washington and Dauphin, Pennsylvania; grub-worms (*Lachnosterna* sp.) in Rockingham, New Hampshire; Orange, New York; Washington and Vernon, Wisconsin; flat-head borers in Cloud, Kansas; slugs (?) ( ) in Kent, Delaware. Forest-worms (?) destroyed apple and forest foliage in Grand Isle, Vermont; tobacco-flies (*Macrosila carolina*) in Pittsylvania, Virginia; Hessian flies (*Cecidomyia destructor*) in Stone, Missouri; grass army-worms (*Leucania unipuncta*) in Greene and Obion, Tennessee; in Clinton, Alexander, Randolph, Sangamon, and Monroe, Illinois; in Gasconade, Howard, Saint Genevieve, Montgomery, Madison, and Ballinger, Missouri.

CHEMICAL MEMORANDA.

By Wm. McMurtrie, Chemist.

The influence of illuminating-gas upon the aerial portions of plants.—The subject of the influence of illuminating-gas upon vegetation has until within the past year or two been almost wholly neglected. In 1873 some observations made in Berlin Duin. Polyt. Jour., CCVI, 345, determined the fact that gas escaping from the pipes exerted an injurious influence upon the surrounding vegetation, with the roots of which it came in contact, and careful experiment showed that this effect could be observed when so small a quantity as 25 cubic feet per diem was distributed through 144 square feet of soil to a depth of four feet. In fact, the plants whose roots permeated this quantity of soil, 576 cubic feet, were by such treatment killed in a short time, and it appeared that less time was required to produce this effect when the surface of the ground was closed and more compact. During the same year J. Boehm, Chem. Centr., 1873, 755, made some experiments by passing coal-gas through the soil of pots containing varieties of fuchsia and salvia, and of the ten plants experimented upon seven died in four months. Further experiments convinced him of the fact that the plants were killed, not by the direct action of the gas upon the roots, but by poisoning the soil. It seems, therefore, pretty well established that when coal-gas permeates through the soil it has an injurious action upon the vegetation with which it may come in contact. My attention has, however, been attracted to a somewhat different action of the gas, which seems equally as destructive as that just described. Boehm found, in the course of his investigation, when cuttings of willow were placed in bottles containing a small quantity of water, and otherwise filled with illuminating gas, as the buds developed and the leaves began to appear the latter rapidly withered and died before reaching complete development. Now, this is the direction taken in my investigation. In Boehm's paper he does not state the percentage of gas in the atmosphere necessary to produce the effect described, and my object was therefore, if possible, to estimate the approximate quantity of gas required to bring about such results. The question arose out of a dispute concerning the destruction of an extensive stock of camelias in Philadelphia, in which it was alleged that the loss was due to the escape of gas from the street-mains. It was shown that the main was broken; that during the winter, the ground being frozen, there was no means of escape of the gas other than to work its way through the subsoil, and into the atmosphere through the ground of the interior of the greenhouse. The distance between the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main and the greenhouse is not stated, but it appears that trees growing between the former and the latter were completely killed. It was to determine whether the result in dispute could be effected by the action of the gas. The plants were growing in pots placed upon stands, and it was therefore impossible that they should be injured through the medium of their roots. It was then to determine what might be the influence of the gas in question upon the aerial portions of plants that the investigation about to be described was instituted. In order to secure such conditions that the plants might be confined in an atmosphere containing a given quantity of gas, and yet be provided with the requisite degree of light, heat, and moisture, the plants were placed in closed boxes, provided with glass sides, and the joints of which were cemented with white lead. When all was secured a tube of glass was introduced through the side of the box and connected with the stop-cock of a gasometer. The stop-cock of the gasometer was then opened, and the gas allowed to flow into the box, until the entire contents of the former were transferred to the latter. The whole was then allowed to stand until the following day, when the gasometer was again filled with gas taken from the pipes supplying the laboratory, and one-half the contents transferred to the box. On the next day press of other duties called my attention away from this work entirely, and the box therefore received no gas. On the fourth day, however, one-half the contents of the gasometer were introduced, and another day allowed to intervene before another application. Gas was then introduced into the box on four occasions, so that the amounts transferred, allowing ten gallons for the capacity of the gasometer, were, 24th, about 10 gallons; 25th, about 5 gallons; 27th, about 5 gallons; March 1, about 5 gallons. During this time an occasional leaf, as well as one of the buds, fell from the plant, and on March 2, on opening the box to apply water to the plant, a slight jar caused a number of the leaves to fall. The plant was then carefully removed from the box, when a sharp shock caused nearly all the leaves to fall. The leaves which had fallen were then gathered about the base of the plant, the whole placed in a convenient position, and, together with the other plant, which had been submitted to the same conditions excepting the treatment with gas, and which remained perfectly sound and healthy, was photographed. From the photograph thus obtained the accompanying illustration was made. Now, what was the relative amount employed? The dimensions of the box were, horizontal cross-section, two feet square; height, four feet. Calculating from the data at hand, we find that the amount first introduced was equivalent to about 7.7 per cent. of the entire volume of the box, and that the quantity subsequently introduced, being one-half this amount, was but 3.35 per cent. Without making any allowances for escape of the gas by diffusion, which probably took place, reasoning from the fact that when the box was opened no odor of gas was perceptible within the box, we find that after the first day the amount of gas did not exceed 4 per cent. of the volume of the box. It is however probable that the average quantity was much less than 3 per cent., and I am inclined to the opinion that if camelias or other plants be confined in an atmosphere containing continually 1 to 2 per cent. of illuminating gas, they must suffer, and ultimately be killed.

LIBERATION OF CARBONIC ACID BY RESPIRATION AND PERSPIRATION OF VARIOUS ANIMALS UNDER DIFFERENT CONDITIONS.—This subject has lately been very thoroughly studied by Dr. Rud. Pott, of Jena,

and he has found that the amount of carbonic acid given off by different animals in proportion to their weight in a given time was subject to considerable variation, dependent upon the species and the existing physiological conditions. His investigation consists of two parts:

First, estimation of the weight of the animal experimented upon, both before and after the experiment, the duration of the experiment in hours and minutes, the amount of carbonic acid separated during the experiment, and from the data thus obtained he calculates the final results for a period of six hours and for a given weight of animal, (100 grams.) Finally, he notes the consumption of air and the temperature of the room during the experiment.

Second, estimation of the amount of carbonic acid liberated in a given time by different animals under the influence of different colored light.

The animals experimented upon belonged to the mammals, birds, fishes, amphibians, insects, snakes, and worms, and with reference to the amount of carbonic acid eliminated in a given time they may be divided into two distinct groups; the mammals, birds, and insects constituting the first group, and the fishes, amphibians, snakes, and worms the second. Of the first group the birds liberate the largest relative amount of carbonic acid. The mammals range next to the birds, and the fishes liberate the smallest amount. The animals of group two liberate a much smaller relative amount than group one, and of this group the worms give off the largest and the snakes the smallest quantity. While in the air the aquatic animals of this group liberate a greater quantity than the other animals of the group, and a much smaller quantity while in the water.

The amount of carbonic acid set free depends largely upon the age of the animal, it being much greater in case of young than in old animals. But while this may be accepted as a general rule, an exception may be found among the insects, when the reverse is true, since the insects in the larval condition give off less carbonic acid than when fully developed. In case of the amphibians the amount liberated by young animals sometimes reaches three or four times, and even more than four times, that liberated by the old ones.

Sex also influences this action, it being more marked in the male than in the female sex. But the weight of the animal and the individuality have no influence upon it, and while the varieties in species must exert a not unimportant influence upon the quantity liberated and must produce some variation, the amount of this variation, in animals nearly allied to each other, is confined to very narrow limits.

The second portion of the investigation gave the following results:

Animals give off more carbonic acid when subjected to the influence of colored light than in daylight. Of the colored rays the violet and red rays exercise the mildest influence, the green and yellow and the white and blue medium. These results conflict with those obtained by Béchard, but are confirmed by those of Selmi and Piacarlini. Experimenting with animals (dogs, doves, and cats) in air-tight chambers into which only light of a given color could penetrate, the latter investigators found, by estimation of the carbonic acid eliminated in a given time, that the relative quantities given off under the influence of different colors, were as follows: White, 100; black, 82.07; violet, 87.73; red, 92; blue, 103.77; green, 106.03; yellow, 126.03. Analogous results were obtained in experiments with other animals. The average results obtained by the author in his experiments were as follows: Violet, 86.89; red, 93.38; white, 100; blue, 122.63; green, 128.52; yellow, 174.79.

During the night the elimination of carbonic acid was considerably diminished.

CHEMICAL RELATION OF THE ALKALIES CONTAINED IN ASHES OF PLANTS.—In two notes presented to the Academy of Sciences of Paris, and published in Comptes-Rendus, MM. P. Champion and H. Pellet have given results of a series of analyses tending to the establishment of a law that a fixed relation exists between the quantities of the alkalies present in the ashes of plants, depending upon the amount of sulphuric acid with which they are capable of combining chemically, and from the results of their labors it appears that to a limited extent the alkalies are capable of substituting each other in the economy of plant-growth. They have shown that while the quantity of sulphuric acid necessary to saturate each of the alkalies separately may vary in different samples, yet the sum of the quantities necessary to saturate all of them is tolerably constant. This may be accepted as a general rule, but is subject to some exceptions, depending upon the portion of the plant examined and special conditions of culture.

The following table, calculated from analyses of beets by different analysts, will serve to illustrate the principle:

	Analyses by—				
	Bretschneider.	Wolf.	Karmrodt.	Fuhling.	Average of eight other analyses by Kohlrausch and Petermann.
Quantity of sulphuric acid corresponding to the potassa and soda contained in 100 grams of ash	44.0	56.5	53	57	50.7
Quantity of sulphuric acid corresponding to lime and magnesia contained in 100 grams	30.1	17.5	23	17	24.2
Total sulphuric acid	74.1	74.0	76	74	74.9

From analyses of leaves of tobacco it appears that lime and potassa have the property of partially replacing each other according to their chemical equivalence.

BOTANICAL NOTES.

By GEORGE VASEY, BOTANIST.

NORTH AMERICAN MAPLES.

Maples are very justly considered to be among the most valuable and ornamental of forest-trees. They are natives of north temperate latitudes, none being found in countries south of the equator, nor in the torrid zone. They are confined to North America, Europe, and the temperate parts of Asia. Two of the European species have been introduced into cultivation to some extent in this country. These are the Norway maple, *Acer platanoides*, and the sycamore maple, *Acer pseudo-platanus*. A few other foreign species are occasionally found in public and private gardens. But the maples of our own country furnish a very interesting

variety, to which the lovers of good trees would do well to give more attention. The North American maples are divided, as to range, into, first, the maples of the eastern portion of the continent; and, second, those of the Rocky Mountain region and the western coast. The Eastern species are five and the Western four:

1st. The hard or sugar maple, *Acer saccharinum*, which has its home principally in Canada, New York, and the New England States, sparingly following the Alleghany Mountains as far as Georgia, and west of the Alleghanies occurring on many of the tributaries of the Mississippi. It is one of our largest forest trees, attaining a height of fifty to eighty feet. The sugar-yielding nature of its sap is well known. Its wood for many purposes of manufacture and for fuel is unequaled. When grown in open ground, it forms a broad-based, round-topped head of dense, dark foliage, clean and usually free from insect depredations, and, taken all in all, probably stands at the head of American ornamental trees, at least for the Northern States. It is of slow growth, and requires care in transplanting and until it becomes well established, after which it will richly repay all the labor bestowed upon it. There is a variety of this species, called black maple, said to be so called from a darker color of the foliage, which differs slightly in the form and pubescence of the leaves, but not sufficiently to constitute a distinct species.

2d. The white or silver-leaved maple, *Acer dasycarpum*. This tree is found generally at lower altitudes than the sugar-maple. It occurs on the borders of rivers, rather sparingly in the New England States, more frequently in the southern and western districts. It forms rather a low trunk, which divides into a great many long branches, with a very graceful, spreading habit. In favorable situations it attains a large size. The under surface of the leaves is of a pale silvery-white color, and contrasts beautifully with the rich green of the upper surface, especially when tossed by the breeze. It blooms profusely early in the spring, before the appearance of the leaves, and its large, broad-winged fruit ripens and drops when the leaves are fully developed. It is easily cultivated and grows rapidly, and hence is one of our most popular shade-trees. It is, however, liable to some objections; the long, slender growth of the limbs renders them liable to be broken by storms and by snow and sleet in the winter, and in some districts a borer has caused great loss by injuries to the trunk.

3d. The red or soft maple, *Acer rubrum*. This has a somewhat wider range of growth than, perhaps, any other species, being found from Maine to Louisiana. It grows in low, rich soil; and on the swampy borders of the large rivers of the South and West it is especially flourishing, attaining a great size. Although less vigorous on high lands, it yet maintains a healthy growth. It does not grow as rapidly as the silver maple, but the wood is harder and finer-grained, and the form of the tree closer and more compact. The twigs and flowers are of a deep red color. It flowers and matures its seeds in early spring; they are only about half as large as those of the white maple, and ripen at about the same time. The leaves are smaller and less divided than those of the white, and, like them, are silvery or whitish on the under surface. As an ornamental tree, it will probably be found more durable and satisfactory than the silver-leaved maple.

4th. The striped maple or moose-wood, *Acer Pennsylvanicum*. This is a small tree, seldom attaining a height of twenty feet, but is well adapted for planting in yards and shrubberies. Its native situation is in mountainous districts, particularly New England, New York, and in the Alleghanies to Georgia. The bark is smooth and light-green, mingled with

longitudinal blackish stripes. The leaves are large for the size of the tree, with a rounded or heart-shaped base, and spreading into three nearly equal short lobes. The fruit hangs in loose and graceful clusters, and, like that of the sugar-maple, is not ripe until autumn.

5th. The mountain maple, *Acer spicatum*. This species has much the same range of growth as the preceding. It is a smaller tree, seldom attaining a height of over eight or ten feet, being of a bushy habit. The leaves are similar in form to those of the striped maple, but smaller and more coarsely toothed on the margin. The tree or shrub is quite ornamental and deserving of cultivation. It becomes more vigorous and grows larger when grafted on the larger species.

6th. The Rocky Mountain or currant maple, *Acer glabrum*, Torr., *Acer tripartitum*, Nutt. This is a small bushy maple, growing from four to ten feet high, first occurring in the mountains of Colorado, thence extending southward to New Mexico and Arizona, and westward to Nevada and California. It has small, smooth, roundish, three-lobed or three-parted leaves, somewhat resembling those of a currant. It generally produces an abundance of fruit, which is about the size of that of the red maple. It would make quite an ornamental shrub, and is deserving of cultivation.

7th. The large-toothed maple, *Acer grandidentatum*. This species is found in the mountains of Nevada, thence extending northward to Oregon. It is a small tree, of slim growth, commonly twenty feet high, but sometimes attaining a height of thirty or forty feet, and one foot diameter of trunk. The leaves are similar in shape to those of the hard maple, but smaller and usually somewhat downy even when old. The fruit is of medium size, with broad and somewhat spreading wings.

8th. The round-leaved maple, *Acer circinatum*. This tree is common in the forests of Oregon and Northern California. It does not have the upright growth of other maples, but grows in clumps, several trunks springing from one root, and spreading out in a broad curve, the long, slender branches often arching to the ground, where they take root, and form tangled clumps which offer serious impediment to travel in the woods in which they occur. It seldom attains a greater diameter of trunk than five or six inches, and a height of from fifteen to forty feet. The wood is hard, heavy, and fine-grained. The leaves have about seven principal ribs, spreading out fan-like from the base to the circumference, united together more than half way, and terminating in about seven narrow lobes.

9th. The great-leaved maple, *Acer macrophyllum*. This is a native of California and Oregon. In the latter State it appears to attain its greatest magnitude, reaching, according to Nuttall, a height of fifty to ninety feet and a circumference of trunk of eight to sixteen feet. Like the sugar-maple, it abounds in a sugary sap, which, however, has not been utilized. Its wood is close-grained, hard, and shows freely those peculiar undulations of the grain which are called curled and bird's-eye maple. The leaves are large, not unfrequently a foot long, and deeply palmately five-lobed. The flowers are rather conspicuous, of a yellowish color, in drooping racemes, and somewhat fragrant. When in bloom it presents a very attractive appearance. The fruit or seed-carpels are larger than those of any other American maple, and are covered even when ripe with strong, stiff hairs, and hang late upon the tree in conspicuous drooping racemes. This species has been introduced into England, and there makes a fine ornamental tree. It is a pity that it is so little known in this portion of the United States.

MICROSCOPIC OBSERVATIONS.

By Thomas Taylor, *Microscopist.*

It has been decided by high authority that *Bacterium** consists principally of vegetable cellulose,† because, when subjected to a boiling solution of the alkalies, it remains undissolved. When rod-bacterium (*Bacterium termo*) is treated with a tincture of iodine, its interior structure is changed from its natural transparent whiteness to an amber color, which indicates the presence of protoplasm in its outer elongated cell. It is popularly supposed that any object composed of vegetable fiber must necessarily be devoid of animal life; and that, although many microscopic germs exhibit animal motions in water, they may, notwithstanding, be purely vegetable; but it has been demonstrated that parts of certain animals, as the mantle of the *Tunicata*, consist of cellulose. It may therefore be reasonable to expect, as a necessary consequence, the presence of analogous substances in them, such as animal starch, glycogen,‡ and chitine, § which are convertible into each other.

*One of the earliest organisms appearing in decaying and putrefying animal and vegetable solutions.

†Cellulose is the characteristic tissue of the vegetable kingdom. It forms the fundamental layer of all vegetable cell-walls. The young parts of plants consist chiefly of cellulose; it exists in a tolerably pure state in the pith of the elder-tree, (Johnston.) More recently, according to De Luca, it is found in the skin of the silk-worm and of serpents. Béchamp says that it is found in the vibrating corpuscles of the silk-worm. Löwig and Kölliker have recognized cellulose in the cartilaginous capsule of the simple *Ascidiæ*, in the leathery mantles of the *Cynthiæ*, and the outer tube of the *Salpæ*.

Chemical properties of cellulose.—When cellulose is treated with oil of vitriol, concentrated hydrochloric acid, or a concentrated aqueous solution of chloride of zinc, it yields products which are converted into glucose when their aqueous solution is boiled with water. Glucose is likewise produced in the decomposition of lignosulphate of lead, and by the action of alkalies on pyroxyline. But it is doubtful also whether this sugar should be regarded as dextro-glucose. According to Béchamp (*N. Ann. Chim. Phys.*, 48, 502,) it yields, when treated with alcohol, two sorts of crystals, one sort having the hardness of cane-sugar, the other resembling dextro-glucose.

The skin of the silk-worm and that which remains in the cocoons, when the butterflies escape, are capable of yielding a substance isomeric with cellulose, which may be converted into glucose. When the caterpillars are boiled for several hours with strong hydrochloric acid, and this treatment is repeated three times with the residue, and the residue is washed with strong potash-lye, then with water, and dried between 100° and 110°, a white, light substance, nearly free from nitrogen, is obtained, which gradually diffuses in oil of vitriol, forming a colorless gummy liquid. This solution added by small quantities to boiling water, and boiled for an hour or two, yields fermentable sugar which reacts like glucose with common salt and potassio-cupric tartrate. (De Luca, *Compt. Rend.*, 53, 102.)

‡ Glycogen, a term generally applied to animal starch, so called, discovered by Virchow, who found it in degenerated liver and spleen; also in diseased kidneys, brain-granulations, and concretions of the prostate gland. He says such tissues assume a reddish-brown or more rarely a dirty-brown violet color, when treated with tincture of iodine. When treated with oil of vitriol and iodine in succession, they acquire a green color, changing to a dirty violet or sometimes blue. (Gmelin's Chemistry, vol. XVIII, p. 334.)

§ Chitine resembles cellulose. It is supposed by some to be nitrogenous; it forms the elytra and integuments of insects and the carapaces of *Crustacea*. It may be obtained by exhausting the wing-cases of cockchafers successively with water, alcohol, ether, acetic acid, and boiling alkalies. The final residue retains completely the form of the wing-cases. Frémy prepares chitine by treating the tegumentary skeleton of a crustaceous animal with cold dilute hydrochloric acid, to remove calcareous salts; washing with distilled water; boiling for several hours with solutioe

Such is found to be the case, in some respects, in the vegetable kingdom, and since vegetable structure has been found in the mollusk alluded to, it may be presumed to be present in the higher forms of life, as in the vertebrates, including man; and as nature does nothing in vain, the presence of cellulose in animals would imply that it has some function to perform for which it is peculiarly adapted in their vital economy.

That the consideration of animal and vegetable pathology comes strictly within the scope of agricultural investigation, is demonstrated by the ravages of the rinderpest, horse-influenza, and numerous vegetable-blights, the cause or causes of which have so frequently eluded the

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of potash, which removes adhering albuminous substances, and has no action upon chitine; again washing with distilled water, and purifying the residue with alcohol and ether.

When chitine (from the carapace of the crab) is boiled for several hours with dilute sulphuric acid, only the softer membranes are attacked, while the more solid integuments become loose and soft, and form, after pressing and washing with water, a mass having almost the consistence of starch. The acid liquid supersaturated with lime, and then neutralized with sulphuric acid, yields neither tyrosine nor leucine, but contains ammonia, together with amorphose sugar, inasmuch as it precipitates cuprous oxide abundantly from an alkaline solution of cupric oxide. (Städeler.) Berthollet (*Ann. Ch. Phys.* [3] *lvi*, 149,) likewise obtained sugar from chitine, (prepared from the integuments of lobsters, crabs, and cantharides,) by macerating it in strong sulphuric acid till it was dissolved, dropping the solution into one hundred times its volume of boiling water, boiling for an hour, saturating with chalk, &c.

The above-mentioned pasty residue is colored brown-red by iodine, like unaltered chitine; and by prolonged boiling with sulphuric acid, yields an additional quantity of sugar, while the undissolved portion always contains nitrogen. The same substance, after removal of the acid, forms with water a turbid emulsion, which takes a long time to clarify, and dries up by spontaneous evaporation to a soft, skin-like membrane, which exhibits, with iodine-water, the same reactions as the original chitine. (Städeler.)

The composition of chitine is determined by the following analyses:

	Schmidt. Mean of 11 analyses.	Lemann.	Schlossberger.	Städeler.	Calculation. $C^9H^{15}NO^9$.
Carbon	46.64	46.73	46.64	46.32	46.35
Hydrogen	6.60	6.59	6.60	6.65	6.44
Nitrogen	6.56	6.49	6.56	6.14	6.01
Oxygen	40.20	40.19	40.20	40.89	41.20

Frémy found in chitine 43.35 carbon, 6.65 hydrogen, and no nitrogen; whence he regards chitine as isomeric with cellulose, (44.4 C, 6.2 H, and 49.4 O.) Gerhardt regarded Frémy's results as more correct than those of the German chemists, because chitine yields by dry distillation only acetic acid and empyreumatic oil, without any ammonia, and the products of its putrefaction under water are different from those of most nitrogenous substances. But the analyses above given exhibit a closeness of agreement which could scarcely be expected if the substances operated upon had been impure.

Städeler regards chitine as a glucoside, $C^9H^{15}NO^6$, which is resolved by boiling with acids into glucose and lactamide, (or alanine or sarcosine:)

$$C^9H^{15}NO^6 + 2H^2O = C^6H^{12}O^6 + C^3H^7NO^2.$$

If this decomposition really takes place, lactic acid should likewise be obtained as a product of the transformation of the lactamide or alanine; but the presence of lactic acid among the products has not yet been demonstrated. Städeler also suggests that chitine (at least in *Crustacea*) may be formed by the union of lactate of ammonium with gum, and elimination of water:

$$[C^3H^4O^3,H,NH^4 + C^6H^{10}O^5 = C^9H^{15}NO^6 + 2H^2O,]$$

Acid lactate of ammonium. Gum. Chitine.

Inasmuch as he has found gum in the juices of crabs and other *Crustacea*, the presence of lactic acid in the gastric juice of the lower animals is by no means improbable.

skill of the most scientific specialists of America and Europe. As long, therefore, as scientific men are unacquainted with any of the constituents of animals and vegetables, so long will they be unable to treat animal or vegetable maladies upon strictly scientific principles. Not only should we endeavor to discover all the constituents of their organs, and their relations to each other, but should also take into account those of the ever-active elements which surround them, as the temperature and humidity of the atmosphere, the effects of light and shade, climate, altitude, and geographical condition—as these are of the utmost importance in the investigation of every form of organic disease. If it can be shown that cellulose exists in all the important organs of the higher animals, the necessity of a more careful examination of its uses will become apparent; and such examinations may result in the discovery of new relations between animal and vegetable structure, while it may also necessitate a revision of received opinions as to the boundary-line between animal and vegetable life.

In consideration of the foregoing views, I have made a series of investigations with animal substances, commencing with the eggs of insects, the eggs of fowls, milk, cerumen, (ear-wax,) the flesh and blood of various animals, including man, and have found in them in every instance cellulose and animal starch, and in some cases capillary vessels, of a translucent red color, containing liquid starch, colored blue from the iodine used during my experiments. The following statement embraces the results of some of these experiments.

If about a cubic inch of liver, spleen, heart, brain, or muscle of the higher animals be immersed in two fluid ounces of caustic potash about twenty-four hours, at a temperature of about 80° Fahrenheit, it will dissolve completely. On the addition of acetic acid in excess, the potash will be neutralized, and a flocculent precipitate will fall, which, by ordinary filtration, may be separated from the liquid. Remove the filtrant by means of a sable-hair pencil, taking care not to remove any of the fiber of the paper with the animal matter. Place a small portion of the filtrant on a capsule, and add to it a drop of concentrated sulphuric acid, followed by one of the tincture of iodine. Then place a portion of the composition on a microscopic slide, covering it with a disk in the usual manner, and examine it with a power of about 100 diameters. Under these conditions blue granules of animal starch and structural cellulose will sometimes be seen, combined with amber-colored albuminous matter. Frequently starch and cellulose, although present, are not seen, but by subjecting the composition to friction, and adding a little more sulphuric acid and iodine, well-defined blue-colored structural forms become apparent.

The structure and chemical behavior of animal-starch granules differ in some respects from those of potato starch; the latter are at once dissolved by caustic potash and concentrated nitric and sulphuric acids, but animal starch is not so easily dissolved. As a general rule the latter resists for a considerable time the solvent action of these powerful chemicals. In form, animal starch frequently resembles potato starch. The granules of the former are found, however, to be sometimes as large as the .004th of an inch in their shorter diameter, by about .007th of an inch in their longer, while many of them are as small as the thousandth of an inch in their longest diameter, or even less. Animal-starch granules when compressed will frequently burst, and the liquid contents coagulate at once in the presence of sulphuric acid. I have found, during my investigations, hollow starch-granules intensely blue, from which their liquid starch had been expelled by pressure. Blue-

colored starch and cellulose structures sometimes appear of a green color in consequence of being covered with amber-colored albuminous matter. On the application of water and friction, the latter may be removed, when a deep-blue structure will become apparent.

I propose to resume my investigations on this subject at an early day, and will, as I progress, make careful drawings of every form of cellulose structure and starch-granules found in the important viscera of the animals under examination, carefully noting the forms and peculiarities found in each part.

PRODUCTION OF MUSCATEL RAISINS IN MALAGA.

By John A. Mark.

The cultivation of the Muscatel vine, notwithstanding that it supplies a source of such great wealth to the province of Malaga, and a vast commodity for exportation to almost every part of the world, in the shape of the universally-known Malaga raisins, is carried on in a way which generally is little to the credit of the cultivators.

The vines are generally very superficially planted, and the culture afterwards partakes very much of the same poverty of tillage. The consequence of this is that the majority of the fruit scarcely attains any size, is poor and skinny, and ultimately has to be foisted on the public in the shape of "corrientes," or what very erroneously are quoted as the *standard* from which all other and superior classes take their relative prices.

The vines should be planted in December and January, and I consider that the most favorable sites are those which lie on gentle slopes in the laps of the hills, as these generally are overlaid with the washing down of the finest and richest soils from above. These latter possess great fructifying power, with all the richness of the alluvium. These lands generally have a substratum of slaty rock, very frangible, and which, when broken up, readily mixes with the soil above and proves a most congenial ground for the vine, especially if it should be a decomposed slate tinged with oxide or peroxide of iron, and of a rich reddish color. This land retains the moisture most admirably, and therefore is most fitted to support the vine during the long summer droughts, which are inevitable.

Generally speaking, the vines are planted at about five feet distance from each other, at a depth of about two feet. Now, in this last circumstance lies all the fault of the general poverty of the vineyards, as, owing to this surface-planting, the roots live where all the digging operations injure them twice a year, and where they are thus also amenable to all the changes of atmosphere, drought, &c.

The correct thing is to plant them about 6 or 7 feet apart, according to the supposed richness of the soil, as when they are closer together they obstruct each other, both in their roots as well as their surface-growth, to say nothing of the more ample succulence which the soil thus affords them. The holes should be dug about 3 or 4 feet deep, and, if possible, the same diameter throughout. Then the finest and healthiest cuttings of the vines should be obtained, about 6 feet in length; they should be laid across the bottom of the holes, in a small trench which should be made in each, and then they should be brought up against the faces or walls of the holes, taking care that they be all laid and,

brought up uniformly, when they should be lightly filled in with the best of the soil, leaving about two or three germs out above the earth's surface. After this, for three consecutive years, if it is a rocky ground, a systematic breaking up between the vines should be carried on in December and January, availing always, if possible, of recent rains, as then the operation is rendered comparatively easy and less expensive, and it is very essential that during these years of education, or breaking in, the vines should be (each time they are dug up) bared down at least 18 inches of the stalk, so that all appearance of root may be removed with a knife, at the expiration of which time that portion of the stem loses its germinating tendency, and thus the plant is driven to live in the lower and moister soil, where it is more independent of the variableness of the surface. This process likewise enables the cultivator to dig up his land to any depth, with the certainty that he will not injure his vines, they having no surface-roots to obstruct the operation.

Among the cultivators of the Muscatel grape, it is customary to prune in two ways. The more wealthy proprietors, and those that can afford all the necessary expense and outlay in producing and packing superior fruit, invariably prune around the stump or head of the vine, cutting off all the last year's shoots at the second bud from the stem, thus throwing the full power of each new shoot into the one or two bunches of grapes which it can throw out; and it is a point with the pruner so to arrange his vine that the branches for pruning should be as evenly and fairly distributed around the stump as possible. All shoots which are thrown out from the top of the stump are invariably plucked off green by the good grower.

The poorer class of cultivators, who prefer quantity to quality, and who cannot afford to dedicate their energies to good fruit, on the contrary, prune all around, leaving two, three, or four shoots with half a dozen buds each, whereby the strength is thus disseminated through a large number of inferior bunches, and thus the majority of their fruit goes into the class of "corrientes."

In the neighborhood of Malaga, and in its "veyer," or valley, there are some very fine vineyards, which produce large quantities of good fruit; but, in the opinion of the writer, it will bear no comparison with carefully-grown fruit in the soil from the mountain-side, at first described by him, as in the rich alluvial soil of the valley the grape fills out too readily, making juice instead of flesh, which latter is the indispensable requisite for fine packing raisins.

The difference is readily preceptible after they have been packed for a few months. Those of the valley shrink up with a sharp edge and acute wrinkle, becoming very hard, whereas the mountain-grown retain their fleshy fullness and soft plastic nature. The former, when first packed, have a bluish velvety hue, whereas those from the hilly land assume a clarety-transparent color.

The writer is well aware that the Malaga classifyers prefer the dark-colored fruit, but he ventures to say that he considers this to be a chronic error, and one that time will effectually eradicate.

The only disease of the vine of any importance which has yet shown itself in the Malaga district is the "oidium tuckery." This has done vast damage, and has even totally devastated some "pedro garienez," or wine-vineyards, but by taking it in time and a systematic sulphuring, the danger has been readily averted in the Muscatel.

The process of drying this grape is naturally a very simple one, but, at the same time, there are so many little circumstances attending it,

which so materially affect the subsequent operation of packing, that the subject is worthy of some consideration.

In picking the bunches of grapes, scissors should be used, so that in this operation the fine ones should not suffer any rough treatment or handling, as, above every other consideration, the beautiful bloom of nature should be preserved intact.

The gatherer should, on the spot, sort out the superior fruit, and from the vineyard convey it in flat baskets, of about 2 feet diameter, and holding about forty pounds of grapes in a single layer, (as they must never press upon each other,) on his head, to the drying-floors, where he must lay the bunches most carefully, close up against each other, so as completely to hide the ground, especially taking care to place them with their finest, handsomest, and most perfect sides downward and next to the ground. The object of this is to preserve the beauty and bloom, so that they may subsequently adorn the face of the packed layers. The drying-floors require nothing but the natural earth on which the grapes have been grown, except that they must be nicely and neatly laid, and be kept free from dust.

The practice has always been to shelter the flats with boards or canvas tents at night or when it threatens rain. It is not a good plan, however, to cover the grapes for the first few nights after they are laid down; for it is found to be a very good thing to let them enjoy the dew and freshness of the night, which counteract in some degree the tendency to dry too rapidly. The writer, however, has introduced into his establishment covers made of galvanized corrugated-iron, which, although more expensive, he finds incomparably superior to those hitherto used. They are placed more rapidly, more completely, do not suffer through the sun as do the planks and canvas; and, above all other considerations, instead of absorbing the damp, which in a slight degree is drawn out of the ground, they rather retain it on the flat, thus keeping the stalks of the raisins tough and pliable, whereby the packers are enabled to arrange and lay their layers without such a large amount of fine fruit being snapped off and condemned to the loose-raisin class.

The time required for raisin-drying varies according to the season, the aspect of the flats, and many other causes, but I should say the average consumed may be computed at fifteen days; and one of the most important things attending the process is the selection of the proper moment for picking them up off the flats and packing or storing them.

The art of packing the fine fruit as at present in use, in the opinion of the writer, is a deplorable error, and one which should be abolished. It is dreadfully expensive and tedious, requiring an amount of handling which in food should be avoided. Instead, he would press on the public the superiority of the light-bunch-layers system, where no fraud can be practiced, and which can be carried out with scarcely any fingering, and where the purchaser sees at a glance the class of fruit which he is intending to eat.

The fine packing, except in certain and honorable cases, is the cloak for every kind of trickery and deception.

I should mention that one extensive grower has introduced an oven, with stoves, for the purpose of drying; but I understand from the packers who frequent his establishment that the raisins do not present the beauty of the sun-dried fruit.

FACTS FROM VARIOUS SOURCES.

AGRICULTURAL PRODUCTS IN GEORGIA.—The following statements are condensed from a report by the State department of agriculture in Georgia on the condition of farm-products, as reported the 15th of June: Condition of corn, 98; corn-forage, 99; and the acreage, 121. Wheat, not harvested, 90; the bulk of the crop harvested in good condition, and the yield 8 per cent. above average. Cotton, 100; late, but thriving. Winter oats, 106; spring, 80; the latter injured by drought and rust. The yield of both kinds 14 per cent. above that of last year. "It is well demonstrated that oats succeed better sown in the fall. It has also been demonstrated that a good stand may be secured by sowing in cotton about the 1st of September, without plowing in." The condition of rice was placed at 95; sugar-cane, 93; clover, 90—harvested in good condition. The wool-clip, 101. The annual loss of sheep by dogs is estimated at 15 per cent., and the loss by disease at 6 per cent. The reported daily average of milk per cow is one gallon; milk required for one pound of butter, $2\frac{1}{2}$ gallons. This would give but $2\frac{4}{5}$ pounds of butter per week; about one-third of a fair yield for a good cow well cared for. The honey prospect is placed 3 per cent. above average, and the yield per colony at 28 pounds.

IRRIGATION SCHEMES—PRELIMINARY OFFICIAL WORK.—Mr. Edward L. Berthoud, civil engineer and secretary of the territorial School of Mines located at Golden, Jefferson County, Colorado, addresses a communication to this Department, in which he proposes that the Engineer Department of the United States Army, the Chief Signal-Officer, the Smithsonian Institution, the Commissioner of the General Land-Office, and the Commissioner of Agriculture co-operate in obtaining uniform and accurate data upon the following points as preliminary aids in the investigation of proposed irrigation schemes:

1. To establish a uniform system of "gauging" the volume of water, and of ascertaining the cross-sections of all the streams and rivers in the several States and Territories; and that this be made a portion of the duties of all exploring and reconnoitering parties, of all signal officers and stations, and of all deputy United States surveyors running meridian, guide-meridian, standard, and township lines.

2. That, in addition to the measuring accurately such cross-sections, and determining the area of the streams at such sections, should be also a uniform method of obtaining the velocity of the water at the place of observation, to determine actual supply of water.

3. Such determination of volume and velocity should not only be taken when swollen by periodical rains or the melting of the snows of the mountain-ranges in which such streams originate, but should also be taken at their lowest stage, or when the effect of local storms or permanent snows has decreased to a minimum or entirely ceased.

4. That in a period of a few years, and at very small expense, we would get minima and maxima of amounts, which factors, determined for a constant period, would assist for the determination of the influences of cultivation, drainage, and the clearing of forest, not only upon the rain and snow fall, but upon the supply of water from our streams fed by the yearly snow-fall.

5. That the accurate measurement of the rain and snow fall in Colorado, &c., when obtained in the more level and open country at the foot of the mountains, is of but little value in determining the amount that the mountain-fed streams can or may produce, and that a rain-fall of from 10 to 14 inches has but little effect in the average growth of cereals and vegetables; that in all cases in Colorado, New Mexico, Utah, Arizona, and Southern California they must be watered by artificial means to insure certain results.

FERTILIZERS IN GEORGIA.—Hon. Thomas P. Jones, Commissioner of Agriculture of the State of Georgia, has issued a circular in which

are tabulated the results of the analyses of one hundred and twelve brands of fertilizers sold in that State. While showing still considerable deficiencies in important chemical constituents, there is a manifest improvement in the character of the articles sold. In addition to the chemical test, many intelligent planters are subjecting them to a careful soil-test, under regulations prescribed by the commissioner, a careful record of which will be published from time to time. The commercial values of the leading chemical elements of these fertilizers average about as follows: Nitrogen, (equivalent of ammonia,) 22 cents per pound; available phosphoric acid, 15½ cents; insoluble phosphoric acid, 4½ cents; potash, 6¼ cents.

The analyses in the circular "show an almost exact, and, in some instances, a complete correspondence in the composition of fertilizers sold under different names." During the season ending May 1, 48,648 tons of these compounds were sold in Georgia, at an average of $51 per ton, amounting to $2,481,048. "The best acid phosphates can be purchased at $40 per ton. Using 500 pounds of acid phosphates to the ton, composted with cotton-seed and manure, it will be necessary to purchase only one-fourth the commercial material to make the same number of tons of equal agricultural value. Only 12,162 tons of acid phosphate would be required to make all the fertilizers used in Georgia, which, at $40 per ton, would involve an outlay of only $486,480," saving annually $1,994,568, besides the freight on 36,486 tons, at $5 per ton, amounting to $182,430. The total saving thus indicated is $2,176,998, or more than the aggregate taxable property of 102 of the 137 counties of the State. It will average $15,883 to every county, and over $50 to every farmer in Georgia." It is more than twice the annual State tax; it would pay the whole State debt in four years; it amounts to 7 per cent. of the annual value of the cotton-crop; it will pay, in one year, the expenses of the State department of agriculture for one hundred and fifty years.

IMPROVED COTTON-GIN.—Mr. H. A. Stearns, of Pawtucket, R. I., has invented a cotton-roller-gin that is considered a great improvement on the common saw-gins now in use. It does not injure the fiber by cutting, tearing, or napping; cleaning the seed more perfectly than any other gin, with a smaller amount of power, and entire freedom from danger of fire while in operation. Mr. Stearns has had many years' experience as a manufacturer of cotton, and is well acquainted with its nature, quality, and value. It has received two diplomas from the Georgia State Agricultural Society; one "for the best improvement in cotton-gins," the other "for the most important improvement relating to agriculture." A Georgia paper states that on test-trials of the gin there was an average saving of fifty pounds of lint to the bale, and of far better staple than that from any of the common saw-gins.

BRITISH IMPORTS OF BREADSTUFFS.—The imports of breadstuffs into the United Kingdom during the first six months of 1874 and 1875 are thus stated in the board of trade report:

Articles.	Quantity.		Value.	
	1874.	1875.	1874.	1875.
Wheat:				
From Russia ..... cwt..	2,432,414	3,804,880	£1,537,179	£1,850,253
From Denmark ..... cwt..	85,310	71,235	58,852	35,893
From Germany ..... cwt..	1,551,086	2,029,830	1,137,607	1,084,245
From France ..... cwt..	4,227	258,771	3,235	129,735
From Austrian territories ..... cwt..	482	12,260	200	6,562
From Turkey, Wallachia, and Moldavia ..... cwt..	393,647	348,514	240,418	160,709
From Egypt ..... cwt..	103,605	183,616	65,089	87,619
From United States ..... cwt..	11,503,164	11,099,066	7,733,328	5,680,608
From Chili ..... cwt..	841,887	311,047	554,963	160,234
From British North America ..... cwt..	692,742	582,008	458,419	292,619
From other countries ..... cwt..	1,479,720	285,197	991,289	141,194
Total wheat ..... cwt..	19,088,324	19,986,424	12,780,579	9,629,968
Barley ..... cwt..	4,469,650	5,560,925	2,322,932	2,402,220
Oats ..... cwt..	5,785,821	5,540,930	2,602,061	2,501,536
Pease ..... cwt..	719,611	890,546	335,120	411,133
Beans ..... cwt..	1,218,696	1,606,834	564,849	743,501
Grain manufactured ..... cwt..	8,432,316	9,657,725	3,694,899	4,016,736
Wheat-meal and flour:				
From Germany ..... cwt..	457,150	327,649	452,470	265,196
From France ..... cwt..	185,044	1,041,186	204,640	797,892
From United States ..... cwt..	1,902,119	1,100,802	1,753,979	800,823
From British North America ..... cwt..	171,604	24,758	157,400	15,812
From other countries ..... cwt..	802,736	326,303	823,947	316,863
Total wheat-meal and flour ..... cwt..	3,518,653	2,820,698	3,392,436	2,196,086
Indian-corn meal, including maizena ..... cwt..	2,454	5,059	5,752	6,547

BRITISH IMPORTS OF COTTON.—The following statement of the imports of raw and manufactured cotton is taken from the reports of the board of trade, and shows the aggregate import of the first half of 1874 and 1875, respectively:

Article.	Quantity.		Value.	
	1874.	1875.	1874.	1875.
Raw cotton:				
From United States ..... cwt..	5,369,190	5,127,295	£20,208,819	£18,848,730
From Brazil ..... cwt..	402,280	443,660	1,593,244	1,613,811
From Turkey ..... cwt..	8,776	7,851	32,033	26,014
From Egypt ..... cwt..	905,215	818,758	4,264,431	3,760,770
From British India ..... cwt..	1,594,825	1,616,926	4,585,994	4,445,167
From other countries ..... cwt..	104,162	100,482	409,080	361,682
Total raw cotton ..... cwt..	8,384,448	8,114,972	31,093,601	29,056,174
Cotton manufactures	.....	.....	839,962	665,720

MARKET-PRICES OF FARM-PRODUCTS, JULY, 1875.

The following quotations represent the state of the market, as nearly as practicable, at the beginning of the month:

Articles.	Prices.
NEW YORK.	
Flour, superfine State and western, per bbl.	$4 50 to $4 80
extra State, do	5 00 to 5 50
extra to choice western, per barrel	5 00 to 8 25
common to fair southern extras, per bbl.	5 00 to 5 90
good to choice southern extras, per bbl.	5 95 to 8 25
Wheat, No. 1 spring, per bush.	1 22 to 1 25
No. 2 spring, do	1 15½ to 1 21
winter, red, western, per bushel	1 30 to 1 36
winter, amber, western, per bushel	1 30 to 1 36
winter, white, western, per bushel	1 31 to 1 40
Rye, per bush.	1 03 to 1 05
Barley, do	— — to — —
Corn, do	73 to 83½
Oats, do	63 to 68
Hay, first quality, per ton.	17 00 to 22 00
second quality, do	13 00 to 14 00
Beef, mess, per bbl.	8 00 to 9 50
extra mess, do	10 00 to 10 75
Pork, mess, do	20 70 to 20 85
extra prime, do	16 00 to 16 50
prime mess, do	19 00 to 19 50
Lard, per lb.	12½ to 14
Butter, western, do	16 to 27
State dairy, do	20 to 30
Cheese, State factory, do	10¾ to 12½
western factory, do	9¾ to 11½
Cotton, ordinary to good ordinary, per lb.	12⅞ to 14⅛
low middling to good middling, per lb.	15 to 16¼
Sugar, fair to prime refining, per pound	7¼ to 8⅛
Tobacco, lugs, per lb.	9½ to 13¾
low leaf to medium leaf, per lb.	12½ to 17
Wool, American XXX and picklock, per lb.	55 to 60
American X and XX, per pound	50 to 53
American, combing, per lb.	54 to 63
pulled, do	30 to 50
California spring clip, per pound	23 to 34
California fall clip, per lb.	18 to 24
BOSTON.	
Flour, western superfine, per bbl.	4 00 to 4 50
common western extra, per lb	4 75 to 5 25
red wheats, good to fancy northwestern, per bbl.	5 00 to 8 00
white wheat, good to fancy western, per bbl.	6 00 to 8 00
southern family, do	6 50 to 8 00
Corn, per bush	90 to 91
Oats, do	62 to 75
Rye, do	1 15 to — —
Barley, do	— — to — —
Hay, eastern and northern, per ton	16 00 to 22 00
choice western, per ton.	— — to — —

Articles.	Prices.
BOSTON—Continued.	
Beef, mess, per bbl.	$10 50 to — —
extra mess, do	— — to — —
Pork, prime, do	21 00 to $21 50
mess, do	16 50 to 17 00
Lard, per lb.	14 to 15
Butter, New York and Vermont, per pound	18 to 27
western, per lb.	17 to 24
Cheese, New York and Vermont, factory, per lb.	10 to 12½
western factory, do	10 to 12
Sugar, fair to good refining, do	7⅞ to 8¼
Cotton, ordinary to good ordinary, per lb.	13 to 14½
low middling to good middling, per lb.	15½ to 16½
Wool, Ohio and Pennsylvania, per pound	48 to 52
Michigan, per lb.	48 to 51
other western, do	45 to 50
pulled, do	30 to 54
combing fleece, do	41½ to 57
California, do	18 to 38½
PHILADELPHIA.	
Flour, superfine, per bbl.	4 00 to 4 50
Pennsylvania extra to choice, per bbl.	4 25 to 6 00
western extra to patent, per barrel	5 50 to 6 00
Wheat, white, per bush.	1 35 to 1 40
amber, do	1 30 to 1 32
red, do	1 26 to 1 30
Rye, do	1 03 to 1 05
Barley, do	— — to — —
Corn, do	78 to 81
Oats, do	58 to 64
Hay, prime baled, per ton.	23 00 to 25 00
baled, common to fair shipping, per ton.	20 00 to 22 00
Beef, western mess, per bbl.	7 00 to 9 00
extra mess, do	8 00 to 9 00
Warthman's city family, per barrel	16 00 to — —
Pork, mess, per bbl.	20 75 to 21 50
prime mess, do	17 50 to — —
prime, do	15 50 to — —
Lard, per lb.	14 to 17½
Butter, choice middle State, do	23 to 30
choice western, do	17 to 22
Cheese, New York factory, do	9 to 13
Ohio factory, do	9 to 11
Sugar, fair to good refining, do	7¾ to 8⅛
Cotton, ordinary to good ordinary, per lb.	12⅝ to 14¾
low middling to good middling, per lb.	15¼ to 17
Wool, Ohio X and XX, do	50 to 54
other western, do	35 to 50
tub-washed, do	50 to 61
pulled, do	26 to 52
combing, do	52 to 62
BALTIMORE.	
Flour, superfine, per bbl.	4 25 to 4 75
extra, do	5 00 to 5 50
family and fancy, do	5 50 to 6 50

Market-prices of farm-products—Continued.

Articles.	Prices.
BALTIMORE—Continued.	
Wheat, red ..... per bush.	$1 16 to $1 30½
amber ..... do...	1 28 to 1 32
white ..... do...	1 15 to 1 35
Rye ..... do...	95 to 1 00
Oats ..... do...	62 to 68
Corn ..... do...	76 to 87
Hay, Maryland and Pennsylvania ..... per ton.	19 00 to 26 00
Pork, mess ..... per bbl.	21 00 to — —
extra prime ..... do...	16 50 to — —
Lard ..... per lb.	14½ to —
Butter, western ..... do...	13 to 20
eastern ..... do...	14 to 22
Cheese, western factory ..... do...	10 to 11
eastern factory ..... do...	12 to 13
Sugar, fair to good refining ..... do...	7¾ to 8
New Orleans, grocery grades ..... per lb.	— — to — —
Tobacco, lugs ..... do...	8 to 12
common to medium leaf, per pound	12 to 14½
Cotton, ordinary to good ordinary ..... per lb.	— to 14
low middling to middling ..... per lb.	14⅞ to 15⅝
CINCINNATI.	
Flour, superfine ..... per bbl.	4 50 to 4 75
extra ..... do...	5 00 to 5 25
family and fancy ..... do...	5 30 to 7 00
Wheat, winter, red ..... per bush.	1 17 to 1 22
hill, (amber) ..... do...	1 22 to 1 28
white ..... do...	1 25 to 1 30
Rye ..... do...	1 00 to — —
Barley ..... do...	1 25 to 1 30
Corn ..... do...	67 to 68
Oats ..... do...	54 to 58
Hay, baled, No. 1 ..... per ton.	15 00 to 16 00
lower grades ..... do...	9 00 to 14 00
Beef, plate ..... per bbl.	— — to — —
Pork, mess ..... do...	20 00 to — —
Lard ..... per lb.	14½ to 16
Butter, choice ..... do...	19 to 22
prime ..... do...	16 to 18
Cheese, prime to choice factory, per pound	10 to 11
Sugar, New Orleans, fair to good, per pound	8⅛ to 8⅞
prime to choice ..... per lb.	9⅛ to 9½
Tobacco, lugs ..... do...	25 to 30
leaf ..... do...	30 to 38½
Cotton, ordinary to good ordinary ..... per lb.	11¾ to 13
low middling to good middling ..... per lb.	14 to 15
Wool, fleece, common to fine, per pound	40 to 43
tub-washed ..... per lb.	— — to — —
unwashed, clothing ..... do...	28 to 32
unwashed, combing ..... do...	38 to 40
pulled ..... do...	33 to 38
CHICAGO.	
Flour, choice winter extras, per barrel	7 00 to 7 25
common to good winter, extras ..... per barrel.	5 50 to 6 50
choice spring ..... do...	4 75 to 5 50
patent spring ..... do...	6 25 to 8 00
spring superfines ..... do..	3 50 to 3 75
Wheat, No. 1 spring ... per bush.	1 06 to 1 06½
No. 2 spring ..... do...	1 02½ to 1 05
No. 3 spring ..... do...	1 00 to — —
Rye, No. 2 ..... per bush.	90 to 91
Barley, No. 2 ..... do...	1 02 to — —
Oats, No. 2 ..... do...	52 to 52½
Corn, No. 2 ..... do...	67 to 68

Articles.	Prices.
CHICAGO—Continued.	
Hay, timothy ..... per ton.	$17 00 to $20 00
prairie ..... do...	9 00 to 16 00
Beef, mess ..... per bbl.	8 25 to — —
extra mess ..... do...	9 25 to — —
Pork, mess ..... do...	19 45 to — —
prime mess ..... do...	— — to — —
extra prime ..... do...	14 50 to — —
Lard ..... per lb.	13¹⁄₁₆ to 13½
Butter, choice to fancy ..... do...	20 to 23
medium to good ..... do...	15 to 18
Cheese, good to prime factory, do.	10 to 11
Sugar, N. O., common to choice, per pound	— to —
Wool, tub-washed ..... per lb.	40 to 53
fleece-washed ..... do...	38 to 43
unwashed ..... do...	25 to 33
SAINT LOUIS.	
Flour, winter, common to choice, per bbl	4 75 to 7 75
spring, common to choice, per bbl	4 50 to 5 50
Wheat, winter, white .. per bush.	1 25 to 1 32
red ..... do...	1 10 to 1 32
spring ..... do...	95 to 1 00
Corn ..... do...	63 to 73
Rye ..... do...	85 to 94
Barley ..... do...	1 25 to 1 50
Oats ..... do...	52 to 60
Hay, timothy ..... per ton.	19 00 to 21 00
prairie ..... do...	11 00 to 13 00
Beef, mess ..... per bbl.	14 00 to 15 00
Pork, mess ..... do...	21 00 to 22 00
Lard ..... per lb.	12 to 14
Butter, prime to choice dairy, per pound	27 to 28
country packed ... per lb.	14 to 16
Cheese, Ohio factory ..... do...	13 to 13½
N. Y. factory ..... do...	13 to 13½
Cotton, ordinary to good ordinary ..... per lb.	12½ to 15
ordinary to good middling ..... per lb.	15 to 16½
Tobacco, lugs ..... do...	8 to 16½
common to medium leaf ..... per lb.	9 to 15
Wool, tub-washed ..... do...	53 to 55
fleece-washed ..... do...	32 to 52
unwashed ..... do...	28 to 36
NEW ORLEANS.	
Flour, superfine ..... per bbl.	4 50 to 4 62½
extra ..... do...	4 75 to 5 75
family to fancy ..... do...	6 00 to 7 00
Corn, yellow ..... per bush.	88 to 90
white ..... do...	89 to 90
Oats ..... do...	66 to 68
Hay, choice ..... per ton.	26 00 to — —
prime ..... do...	25 00 to — —
Beef, Texas ..... per bbl.	10 00 to 11 50
western ..... do...	16 00 to — —
Fulton market ... per ½ bbl.	11 50 to 12 50
Pork, mess ..... per bbl.	21 50 to 21 75
Lard ..... per lb.	14½ to 15¼
Butter, choice Goshen ..... do...	30 to 33
western ..... do...	22 to 24
Cheese, choice western factory, per pound	10 to 12
N. Y. cream ..... per lb.	17 to 17½
Sugar, fair to fully fair ..... do...	8½ to 9
prime to strictly prime, per pound	9¼ to 9¾
clarified, white, and yellow ..... per lb.	9¾ to 10½
Tobacco, lugs ..... do...	9 to 12
low leaf to medium .. do...	12 to 14½

Market-prices of farm-products—Continued.

Articles.	Prices.	Articles.	Prices.
NEW ORLEANS—Continued.		SAN FRANCISCO—Continued.	
Cotton, ordinary to good ordinary.....per lb.	$0 12½ to $0 13	Corn, white.....per cental.	$1 50 to $1 55
low middling to good middling.....per lb.	14½ to 15½	yellow.....do...	1 40 to 1 45
Wool, clean lake.....do...	33½ to 34	Hay, State.....per ton.	12 00 to 20 00
SAN FRANCISCO.		Beef, mess.....per bbl.	8 50 to 9 50
Flour, superfine.....per bbl.	4 00 to 4 50	family mess.....per ½ bbl.	6 50 to 8 00
extra.....do...	4 75 to 4 80	Pork, mess.....per bbl.	22 00 to 23 00
family and fancy....do...	5 00 to 5 62½	prime mess.....do..	16 50 to 17 00
Wheat, California....per cental.	1 60 to 1 75	Lard.....per lb.	14 to 16
Oregon.....do...	1 60 to 1 70	Butter, overland.....do..	20 to 25
Barley.....do...	1 40 to 1 60	California.....do..	25 to 35
Oats.....do...	1 90 to 2 15	Oregon.....do..	20 to 22½
		Cheese.....do..	12½ to 15
		Wool, native.....do..	10 to 15
		California.....do..	15 to 27
		Oregon.....do..	18 to 27

LIVE-STOCK MARKETS.

NEW YORK.		CHICAGO.	
Cattle, extra beeves..per cental.	$13 25 to $13 50	Cattle, extra-graded steers, 1,400 to 1,600 pounds, per cental.....	$6 62½ to $6 75
good to prime.....do....	12 25 to 13 00	choice beeves, 1,250 to 1,450 pounds, per cental.	5 90 to 6 37½
common to fair.....do....	11 50 to 12 00	good beeves, 1,150 to 1,350 pounds.....per cental.	5 65 to 5 75
average of the market, per cental.....	12 00 to — —	medium, 1,100 to 1,250 pounds....per cental.	4 90 to 5 12½
Texans.....per cental	7 00 to 10 75	Texans.....do....	2 30 to 2 70
milch-cows.....per head.	50 00 to 108 00	milch-cows.....per head.	— — to — —
calves.....per cental.	5 00 to 7 50	Sheep.....per cental.	2 50 to 4 25
Sheep.....do....	4 25 to 8 50	Swine.....do....	6 00 to 7 10
Swine.....do....	9 25 to 9 75		
PHILADELPHIA.		SAINT LOUIS.	
Cattle, prime beeves..per cental.	8 25 to — —	Cattle, fair to choice native steers, per cental.....	4 50 to 6 75
fair to prime.....do....	6 00 to 8 00	common to fair natives, per cental.....	3 25 to 4 75
common.....do....	4 00 to 5 75	inferior to common, per cental.....	1 50 to 2 87½
Sheep.....do....	4 50 to 6 00	Texans, common to choice, per cental.....	2 00 to 4 25
Swine, corn-fed.....do....	11 00 to 11 50	Sheep.....per cental.	3 75 to 6 25
BALTIMORE.		Swine.....do....	6 60 to 8 00
Cattle, best beeves....per cental.	6 00 to 7 25	Horses, plugs.....per head.	40 00 to 75 00
first quality.....do....	5 00 to 6 00	plain.....do....	80 00 to 110 00
medium or good quality, per cental.....	4 50 to 5 00	street-car.....do....	75 00 to 125 00
ordinary.....per cental.	3 50 to 4 50	heavy-draught....do....	130 00 to 170 00
general average...do....	6 00 to — —	good drivers.....do....	100 00 to 150 00
most of the sales..do....	5 50 to 6 50	extra.....do....	175 00 to 180 00
milch-cows, fair to good, per head.....	30 00 to 40 00	Mules, 14 to 15 hands high..do....	75 00 to 120 00
Sheep.....per cental.	4 00 to 5 00	15 to 16 hands high..do....	120 00 to 165 00
Swine.....do....	9 50 to 10 00	extra.....do....	160 00 to 180 00
CINCINNATI.		NEW ORLEANS.	
Cattle, good to prime butchers' steers.....per cental.	5 00 to 5 75	Cattle, Texas beeves, choice, per head.....	40 00 to 46 00
fair to medium....do....	3 50 to 4 75	first quality....per head.	30 00 to 35 00
common.....do....	2 00 to 3 25	second quality.....do....	20 00 to 25 00
milch-cows....per head.	30 00 to 45 00	western beeves.....do....	— — to — —
calves.....per cental.	3 50 to 4 50	milch-cows.....do....	35 00 to 100 00
Sheep.....do....	3 00 to 5 50	calves.....do....	7 00 to 9 00
Swine.....do....	6 75 to 7 20	Sheep, first quality.....do....	5 00 to — —
		second quality.....do....	3 00 to 4 00
		Swine.....do....	5 00 to 10 00

FOREIGN MARKETS.

WHEAT.—The month of June in Europe was capricious and variable. The early outburst of summer weather in several countries was succeeded by a recurrence of low temperatures, with even frosty nights. The weather, however, recovered its summer character toward the close of the month. The variant prospects have caused much speculation in England as to the outcome of the growing crops, and considerable uncertainty caused dealers, on the one hand, to refuse to advance prices, while farmers seemed equally determined to hold on for better prices. Advices from foreign crops, and especially the June report of the United States Department of Agriculture showing the promise of the growing crop to be probably one-fifth short of an average, placed the game more fully in the hands of the farmers, although the English crops were in very favorable condition. Several local markets sent up wheat 1*s.* per quarter before the London market gave the signal. A subsequent further rise of 1*s.* per quarter has since been noted. A rising market is noted in Belgium, Holland, and some provinces of Germany. The drought in Russia and Hungary was expected to raise prices in those large wheat-producing countries, hence commercial authorities in Mark Lane had concluded not to rely upon the prevailing low rates. The disasters in France added to this tendency. The sales of English wheat during the week following June 18 amounted to 42,253 quarters at 42*s.* 6*d.*, against 29,925 quarters at 60*s.* 8*d.* during the corresponding week of 1874. The London averages were 44*s.* 10*d.* on 818 quarters. The imports into the United Kingdom during the previous week were 733,607 cwt. In Mark Lane, Essex and Kent white were quoted at 43*s.* to 48*s.* per quarter; ditto, red, 41*s.* to 43*s*; Norfolk, Lincolnshire, and Yorkshire, 41*s.* to 43*s.* Of foreign wheats, Dantzig mixed brought 49*s.* to 53*s.*; Königsberg, 45*s.* to 52*s.*; Rostock, 44*s.* to 47*s.*; Silesian red, 42*s.* to 44*s.*; ditto, white, 45*s.* to 48*s.*; Pomeranian, Mecklenburg, and Uckermark, red, 43*s.* to 45*s.*; Ghirka, 41*s.* to 42*s.*; Russian, hard, 39*s.* to 42*s.*; Saxonska, 42*s.* to 44*s.*; Danish and Holstein, red, 40*s.* to 45*s.*; American, red, 40*s.* to 42*s.*; Chilian, white, 40*s.* to 45*s.*; California, 46*s.*; Australian, 47*s.* to 48*s.* In Liverpool, Canadian brought 9*s.* to 9*s.* 4*d.* per cental; Red club, 8*s.* 9*d.* to 9*s.*; American white winter, 9*s.* 3*d.* to 9*s.* 6*d.*; No. 1 spring, 8*s.* 7*d.* to 8*s.* 9*d.*; No. 2 spring, 8*s.* 2*d.* to 8*s.* 4*d.*; extra Saidi, 7*s.* 9*d.* to 8*s.*; California, 8*s.* 10*d.* to 9*s.* 5*d.*; Oregon, 9*s.* 5*d.* to 9*s.* 7*d.*; Chilian, 8*s.* 10*d.* to 9*s.*; Australian, 9*s.* 5*d.* to 9*s.* 8*d.* In Paris, with plenty of offers, prices were unaltered at 40*s.* to 46*s.* per quarter. The market closed firm on account of the rains.

FLOUR.—The imports of flour into the United Kingdom during the week ending June 19 amounted to 58,648 cwt. The week opened in Mark Lane upon a moderate supply of English flour with small stocks of foreign. The best English town households were quoted at 36*s.* to 40*s.* per 280 pounds; best country households, 30*s.* to 32*s.*; Norfolk and Suffolk, 29*s.* to 30*s.*; American, per barrel, 21*s.* to 26*s.*

In Liverpool, English and Irish superfines brought 30*s.* 6*d.* to 32*s.* per 280 pounds; ditto, extra, 32*s.* 6*d.* to 34*s.*; French, 36*s.* to 42*s.* 6*d.*; Trieste, 48*s.* to 58*s.*; Spanish, 34*s.* to 38*s.*; Chilian, 30*s.* to 33*s.* 6*d.*; Californian, 34*s.* to 36*s.*; American, western and extra State, 20*s.* 6*d.* to 21*s.* per barrel; Baltimore and Philadelphia, 20*s.* 6*d.* to 22*s.* 6*d.*; Ohio and

extra, 22*s.* to 26*s.*; Canadian, 20*s.* to 23*s.* In Paris, superior flour for June was quoted at 33*s.* 8*d.* per quarter.

MAIZE.—In Mark Lane, white maize was quoted at 31*s.* to 32*s.* per quarter; ditto, yellow, 30*s.* to 33*s.* In Liverpool, American white brought 33*s.* 6*d.* to 33*s.* 9*d.* per 480 pounds; ditto, mixed, 31*s.* 9*d.* to 32*s.*; Galatz, 32*s.*; Trieste, 31*s.* 3*d.* to 31*s.* 6*d.* In Paris, maize had declined to 35*s.* per quarter.

MONTHLY REPORT

OF THE

DEPARTMENT OF AGRICULTURE

FOR

AUGUST AND SEPTEMBER, 1875.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1875.

CONTENTS.

MONTHLY REPORT.

DEPARTMENT OF AGRICULTURE,
STATISTICAL DIVISION,
Washington, D. C., September 21, 1875.

SIR: I herewith submit for publication a digest of the crop-returns for August and September, some notes on the resources of Maryland, and various minor statistics.

Respectfully,

J. R. DODGE,
Statistician.

HON. FREDERICK WATTS,
Commissioner.

THE ANNUAL REPORTS.—The statistical correspondents of the Department have endured patiently the delay of Congress to provide their quota of Reports of Agriculture for 1872 and 1873. After a year's delay an appropriation for the publication of editions of those volumes for the use of the Department was made, and one of each was sent to county correspondents and their assistants, and two copies extra have recently been sent to each county. Many correspondents, knowing that the report of 1874 was made to Congress last January, and properly expecting its receipt in printed form, have deemed the sending of duplicates of 1873 a mistake. The annual for last year is indeed printed, the Senate having ordered an edition of 1,200 for its own use, the largest number obtainable without a joint resolution, but no provision has as yet been made by Congress for any distribution whatever. The Department should be promptly supplied with an edition for its official distribution and exchanges, especially to its faithful and gratuitously working correspondents. As to a general distribution, the English plan of sale at cost should be adopted, but not unless the rule is made to apply to all documents.

DIGEST OF RETURNS.

The returns of September, and indeed those of August as well, have been full of the records of somewhat remarkable meteorological phenomena. The frequency, severity, and general distribution through a wide area of storms of rain and hail are noted throughout our correspondence of the past two months. In July the Gulf States had more occasion to fear a continued drought than excessive moisture; and dry weather was at the same time the rule in latitudes above the northern

line of Indiana and Illinois, and in portions of the area east of the great lakes and north of Pennsylvania. The interior areas, from the Alleghanies to the Rocky Mountains, were unusually wet, in clay soils and on bottom-lands to an extent injurious to most crops. Damages by floods were numerous and heavy. In August this region endured a continuation of these experiences, with local differences in degree and frequency. Storms and floods were common in the belts hitherto comparatively exempt. Rains became so general that the "desert" plains of Colorado became green with rank grasses, and railroad passengers were detained by floods and "wash-outs." Even the dry basin of the Salt Lake was blessed with numerous showers, and the alkali plains of the Humboldt Valley were moistened with gentle rains.

While damage was done by storm and flood in a large area, throughout both June and July, the sandy loams and naturally drained soils in the same great area gave astonishing growth in corn, grass, and other valuable crops, which more than compensated for damages by overflow in districts where such soils predominate. The general result is a vigor and rankness of growth almost unexampled, which will require a long and warm ripening season properly to mature, and in the event of an early frost will give to feeders an immense quantity of damaged corn, and unusual immaturity of all late agricultural products. In the case of the small grains, the injury from heating and sprouting has been so wide-spread, the dry districts being generally those in which grain-growing is not prominent, that it will be necessary to observe extreme care in saving sound and well-developed samples for seed.

In the districts where rains were not abundant, the opposite extreme was complained of to some extent in July. Drought was reported in portions of Michigan, Wisconsin, and Minnesota; to some extent in localities on the Atlantic slope north of 40°; and in Georgia, Alabama, and Florida almost every return reported injurious effects of extremely dry and hot weather. Drought was very general in Texas; and in Louisiana and Mississippi some districts suffered from drought, while others had seasonable rains and a few excessive moisture.

The unusual moisture in western districts, where insects have heretofore caused serious and almost overwhelming losses, has proved a powerful check to these pests of the field. Grasshoppers were destructive in a few counties on the borders of Kansas and Missouri; early in the season in three or four counties in the southwest corner of Nebraska, and later in a few interior counties where scattered forces had gathered for their work of ruin; and in a few counties of Southern Minnesota. The army worm has been heard from in Ohio, and chinches are reported in the drier districts of the West, but the feebleness of their attacks will insure a large reduction of their usual amount of foraging. The Colorado beetle has had a wide range, causing losses comparatively trifling except in his more eastern fields of operation, where his attacks met with a feeble resistance.

CORN.

The corn-crop of the present season covers an immense area, and its growth is very heavy. Could it be thoroughly ripened its aggregate would exceed any previous crop, and the yield per acre would be one of the best, notwithstanding the losses by overflow of bottoms and saturation of flat heavy soils, such losses proving less than the usual damages by drought and insects, while the rains have greatly benefited the crop on drier and higher soils. Nearly everywhere corn is late in

maturing, from one to two weeks, rendering more vital the necessity of a warm September, free from frosts to its close, to insure immunity from the partial destruction of the crop. Frosts have occurred in Wisconsin and Minnesota, and in Northern Illinois and Iowa, on the 21st and 22d of August, and again on the 28th and 29th, but the damage is slight except in a few counties of the States first named.

The August returns made no change in the general average condition for the whole country, which was 96 in July and August, though there were local changes. In the rainy belts the benefits to the poorer uplands were more than counterbalanced by the injuries from submersion of the bottom-lands.

The improvement in the last month has been from the general average of 96 to 97. The only States that do not show higher averages than in August are Delaware, Virginia, Florida, Louisiana, Arkansas, Tennessee, Illinois, Wisconsin, Missouri, Kansas, Nebraska, and Oregon. Some of these have the same average as last month; the only States showing marked decline are Wisconsin and Minnesota. The condition for the several States is as follows: Maine, 105; New Hampshire, 100; Vermont, 98; Massachusetts, 100; Connecticut, 108; New York, 99; New Jersey, 111; Pennsylvania, 108; Delaware, 100; Maryland, 106; Virginia, 112; North Carolina, 104; South Carolina, 87; Georgia, 90; Florida, 83; Alabama, 105; Mississippi, 116; Louisiana, 85; Texas, 89; Arkansas, 103; Tennessee, 114; West Virginia, 107; Kentucky, 103; Ohio, 97; Michigan, 101; Indiana, 83; Illinois, 95; Wisconsin, 60; Minnesota, 72; Iowa, 92; Missouri, 111; Kansas, 109; Nebraska, 93; California, 95; Oregon, 100.

The following items are selected from notes of correspondents accompanying the tabular returns to illustrate local peculiarities:

MAINE.—*Penobscot:* Backward, but looks well. *Piscataquis:* Exceeds our expectations. *Oxford:* Growing finely. *Sagadahoc:* Small and backward, owing to the cold season, but now coming forward. *Waldo:* Large growth, looking first-rate. *York:* Has been improving all through August. *Androscoggin:* Backward, but looking well.

NEW HAMPSHIRE.—*Carroll:* Backward, but large and stocky. *Sullivan:* Two weeks late, but large growth. *Rockingham:* Promising well. *Belknap:* Late, but doing remarkably well.

VERMONT.—*Orleans:* A good growth. *Franklin:* Fair growth, but late. *Rutland:* Late, but promising. *Washington:* Fine stand and growth, but late. *Windsor:* Late but large growth. *Caledonia:* Late, but filling well.

MASSACHUSETTS.—*Worcester:* Backward. *Berkshire:* Nearly a month behind. *Dukes:* The grub has injured corn 25 per cent. *Plymouth:* Has made rapid progress in August.

CONNECTICUT.—*New London:* The growth unusually large.

NEW YORK.—*Seneca:* Promises a large yield. *Warren:* Improved rapidly in August. *Tioga:* Looks well. *Queens:* Promises a good yield. *Madison:* Has made a rapid growth the past month. *Schoharie:* Great growth in stalks owing to a very wet August. *Steuben:* Has filled well. *Genesee:* Late, but a good growth; doing finely. *Washington:* Backward, but doing well. *Rensselaer:* Better than for several years. *Broome:* Promises an abundant yield; two weeks late. *Wyoming:* Coming on well. *Columbia:* Very large growth, and excellent weather for ripening. *Erie:* Late, but promising. *Orange:* Prospect of a good yield. *Sullivan:* Doing well, but ten days late.

NEW JERSEY.—*Atlantic:* The ears large and full. *Mercer:* Very promising. *Sussex:* Bids fair to yield an extraordinary crop. *Burlington:* Seldom such a promising crop. *Warren:* All appearances of a good yield.

PENNSYLVANIA.—*Erie:* Very late. *Lycoming:* Good. *Greene:* A dry August, hard on late corn. *Northampton:* Promise of the heaviest crop for years. *Westmoreland:* Promises to be very heavy. *Armstrong:* Thriving and abundant. *Clearfield:* Promises a fine crop. *Montgomery:* Never looked better. *York:* Never looked better. *Beaver:* Not earing well owing to wet weather. *Bucks:* Promise of a fine crop. *Fayette:* Injured by storms and heavy rains in August. *Crawford:* Backward, but of strong growth and improving very fast. *Indiana:* Prospect of a very large crop. *Tioga:* Ten days late. *Washington:* Growing very fast, and promise of a good crop. *Columbia:* Favorable weather for ripening.

DELAWARE.—*Sussex:* Indications of an unusual yield.

MARYLAND.—*Caroline:* Looks well. *Prince George:* The promise, August 1, of a full crop has been injured by constant rains. *Dorchester:* Many a year since such a crop was harvested as will be this year. *Worcester:* Injured by recent heavy rains. *Baltimore:* Prospect for a heavy yield. *Washington:* The largest crop for years. *Cecil:* Never appeared better. *Harford:* The finest show for years. *Wicomico:* Excellent.

VIRGINIA.—*Highland:* Better than for years. *Lancaster:* The best crop in ten years. *Montgomery:* Most bountiful crop. *Richmond:* Very rank growth. *Culpeper:* Best crop for many years. *King and Queen:* Too much rain for corn. *Rockbridge:* Safe for a good crop. *Fluvanna:* A good crop. *Buchanan:* A good deal "fired;" probably caused by working when too wet. *Smith:* The largest growth for years, with indications that it will mature finely. *Powhatan:* Prospect of the largest crop ever grown. *Page:* Never better. *Sussex:* Better than for the last seven or eight years. *Middlesex:* Considerably damaged by incessant rains, but promises above average. *Rappahannock:* Prospect flattering. *New Kent:* Prospect of a very heavy crop. *Spottsylvania:* Promise of the largest crop ever raised. *Chesterfield:* Surpasses our most sanguine expectations; think there will be as much made as in the past five years altogether. *Floyd:* Very late. *King George:* Was very promising, but prospect of injury by continued rains. *Madison:* Very fine, but too much rain for low lands. *Prince William:* Some pieces damaged by water standing on the ground. *Amelia:* Very fine. *Bland:* Prevented from earing as well as usual by the continued wet, but a much larger than usual growth of fodder. *James City:* Materially benefited by the late rains. *Matthews:* The excessive rains have brought the condition far below average. *Pulaski:* Fine, but late. *Wythe:* Looks well. *Charlotte:* Never better. *Elizabeth City:* Has improved since the last report. *Halifax:* Fine on high lands; too much rain on low. *Lunenburgh:* Promises the best yield for years. *Northampton:* Injured with rot, owing to continual rains in August. *Bedford:* Splendid. *Clarke:* Prospect of a heavy crop. *Mecklenburgh:* Never better. *Orange:* A gigantic crop. *Princess Anne:* A larger crop and better prospect than for ten years. *Essex:* Never better.

NORTH CAROLINA.—*Mecklenburgh:* Better than for several years. *Moore:* Damaged to some extent along the creeks by overflow. *Clarendon:* Not half a crop; drought. *Person:* Very fine on uplands; on low grounds damaged by excessive rains. *Caswell:* Half destroyed on bottom-lands by rains. *Lenoir:* Very fine. *Wayne:* Excellent crop. *Davidson:* Too wet for corn. *Pasquotank:* The best since the war till injured by recent rains. *Surry:* More promising than usual, but overshooting owing to continual rains. *Franklin:* Promises unusually well. *Beaufort:* Magnificent. *Chowan:* Better than for ten years. *Tyrrel:* Good. *Wake:* Early injured by intense heat in July; all crops injured by excessive rain in August. *Wilson:* Cut off 10 per cent. by excessive rain; all on the land subject to overflow destroyed. *Anson:* Fair on upland, but very poor on bottoms owing to excessive wet. *Haywood:* Favorable season. *Alamanee:* The finest in twenty years. *Gaston:* Upland crops promise all the land can produce; on low grounds, the loss from rains and flood is about 74 per cent. *Greene:* Very good though injured by drought 10 per cent. *Onslow:* About one-third of the crop badly injured by drought. *Montgomery:* The best for many years. *Caldwell:* Too wet for corn. *Polk:* Injured on bottoms by too much rain; better than usual on uplands.

SOUTH CAROLINA.—*Beaufort:* The drought in July proved destructive to the crop. *Fairfield:* Very fine on upland. *Horry:* Badly injured by excessive drought in July. *Marlborough:* The crop is secure; the fodder better than usual. *Newberry:* Early planting very light, owing to drought; late planting, three-fourths of a crop. *Lexington:* Hardly possible to bring the crop up to average. *Georgetown:* The rain too late for corn.

GEORGIA.—*Jefferson:* Suffered seriously from drought, but rains came in time to benefit the late planted. *Lincoln:* The larger acreage will compensate for the low condition. *Randolph:* Drought cut off the crop 25 per cent. *Terrell:* The rains too late to benefit the crop. *Pierce:* Cut off by drought. *Dooly:* Badly damaged by drought in July. *Mitchell:* Greatly damaged by drought. *Grenada:* Early cut off one-half by drought; late benefited by rains. *Worth:* Cut off one-half. *Columbia:* Rains too late for corn: *Telfair:* Ruined by drought. *Harris:* Very much cut off by drought. *Troup:* Ruined by the drought. *Bartow:* Greatly benefited by recent rains. *Catoosa:* Better than ever seen before. *Muscogee:* The rains too late for corn. *Liberty:* Seriously injured by the protracted drought. *Walton:* Injured by drought. *Forsyth:* Injured on uplands by drought. *Towns:* Better than ever known. *Gwinnett:* Cut short by hot, dry weather. *Bullock:* The rains too late. *Carroll:* The early-planted made before the drought; the late a failure. *Elbert:* Good. *Appling:* The exceeding hot, dry summer caused corn to fall short of maturing. *Laurens:* Quite short, owing to drought. *Brooks:* Cut off 25 per cent. by drought. *Twiggs:* Will yield better than was anticipated.

FLORIDA.—*Madison:* Has fallen off 25 to 33 per cent. *Volusia:* Injured by drought when filling. *Jackson:* Is made, and must be scarce for consumption. *Columbia:* Injured by drought, which continued to the middle of August. *Suwannee:* Injured very much in spring by drill-worms.

ALABAMA.—*Dale:* Early, half crop; late, total failure. *Crenshaw:* Stout, except on

swamp-lands. *Saint Clair:* Will probably be cheaper this fall than since that of 1870. *Lauderdale:* Never better. *Covington:* Drought cut short all late corn. *Pike:* Late corn entirely cut off by drought. *Shelby:* All late corn an entire failure from drought. *Butler:* Corn considerably injured by the drought. *Calhoun:* About as good as the land can bring. *De Kalb:* Extra crop, now made. *Lawrence:* Looks well and promising. *Autauga:* Seriously injured by the drought. *Colbert:* Never surpassed. *Conecuh:* An average crop already made, and some late corn doing remarkably well. *Limestone:* Better than for many years. *Perry:* Below expectation. *Randolph:* Cannot make more than four-fifths of a crop. *Bullock:* Seriously injured by drought, but yet 110. *Clarke:* On uplands cut off to a greater extent than I ever before knew by the long-continued drought. *Marion:* Matured and very good. *Marshall:* The most abundant yield since the war.

MISSISSIPPI.—*Pike:* Very fine ten days ago, but much has been overflowed and is greatly injured. *Neshoba:* Better than for years. *Smith:* The best in ten years; it is believed enough is made to supply the county. *Wayne:* The best crop since 1855. *La Fayette:* The best crop known in the county. *Lee:* The crop is made, and the yield almost incredible. *Wilkinson:* Considerably damaged by extraordinary rains. *Tishemingo:* Not as heavy as the stalks indicate; too much sap and husk; but twice as much grown as last year, and the weather very favorable. *Panola:* Was never finer. *Rankin:* An ample supply for one year. *Bolivar:* Never better since the war. *Jefferson:* Better than for years.

LOUISIANA.—*Caldwell:* Injured by unprecedented rains and severe winds. *Lincoln:* The largest ever made in the county. *Rapides:* The best for years. *East Feliciana:* Damaged by the heavy rains of last week 5 to 10 per cent. *Franklin:* Seriously damaged by high winds in August. *Madison:* Nearly all matured in good condition; late planting very fine. *Morehouse:* Shortened very much by drought. *Saint Mary's:* The best crop since the war. *Cameron:* Damaged at least 20 per cent. by too much rain. *Concordia:* Considerably damaged by high winds, with rain. *Jackson:* Cut short by drought in July, and a great deal of fodder lost by the rains in August.

TEXAS.—*De Witt:* Somewhat injured by drought. *Washington:* Somewhat injured by drought. *Dallas:* Will range from 30 to 60 bushels per acre. *Upshur:* About half crop; damaged by drought. *Palo Pinto:* Better than for five years. *Milam:* Cut short 50 per cent. by the nine weeks' drought; will average about 20 bushels per acre. *Kaufman:* Harvested, and light. *Burnet:* Reduced by drought. *Harrison:* Cut off by drought, except early corn on *deeply-plowed* land. *Bexar:* The crop mostly gathered; the average will be 20 bushels per acre. *Caldwell:* Average yield about 15 bushels. *Grayson:* Will yield from 30 to 50 bushels per acre. *Lampasas:* Late rains will improve the late plantings. *Lavaca:* Better than anticipated. *Medina:* Largely injured by the drought. *Somervell:* Product surpasses that of last year 10 per cent. *Victoria:* Much of the late planted failed to fill, owing to the long drought. *Red River:* Good, but much blown down. *Matagorda:* Cut short 50 per cent. by drought. *Tyler:* Cut off in some parts by drought; in others far above average. *Jasper:* Materially injured by drought.

ARKANSAS.—*Garland:* Did well; more made than for the last ten years. *Baxter:* Good. *Bradley:* condition advanced by copious and well-timed showers. *Independence:* Maturing rapidly. *Stone:* Better than for many years. *Arkansas:* Good. *Jefferson:* Injured by drought in some localities. *Marion:* Never saw such a crop for thirty-eight years; more raised than in the last three years together, and I ought to have put it at 300 instead of 150. *Yell:* Will come out all right. *Crawford:* Benefited by the rains almost beyond measure. *Saint Francis:* Will double the last year's crop; the best ever raised. *Washington:* Improved by the wet weather. *Montgomery:* Affected by the dry weather, but much better than last year. *Newton:* Never better; more raised in the county than ever before. *Fulton:* Increased acreage, and the best crop for twenty years.

TENNESSEE.—*Anderson:* Badly damaged by rains. *Bedford:* Prospect never finer. *Bledsoe:* Would have been extraordinary but for so much rain; will be average. *Robertson:* Early corn, well worked, very fine; but a large portion of the corn not sufficiently worked, owing to excessive rains. *Grundy:* Promise of an excellent crop. *Gibson:* Abundant. *Giles:* Prospect never better. *Blount:* Very fine. *Fayette:* Slightly damaged by a drought of twenty days, but 140, and beyond a peradventure very fine. *Obion:* Could not be much better. *Hancock:* Injured on bottoms and benefited on uplands by continual wet. *James:* Cut a little short by drought in August. *Dickson:* Extra heavy crop. *Sequatchie:* Too wet for late corn. *Wilson:* Good. *Macon:* Needs rain.

WEST VIRGINIA.—*Tucker:* So much wet weather that corn is not earing; will not be more than half a crop. *Pleasants:* Injured on small streams and creeks. *Grant:* Promise of an abundant crop. *Mineral:* Very heavy crop, but backward. *Gilmer:* Destroyed on bottom-lands by wet weather. *Braxton:* Very promising. *Boone:* Damaged by the rains. *Jefferson:* Prospect of the largest crop since the war. *Mercer:* Not well cultivated, owing to wet weather. *Putnam:* The condition now better than aver-

age, but, allowing for the amount lost by high water, the crop may be below average *Mason:* Very greatly damaged by the floods; never more promising on the uplands. *Pendleton:* Promise of an abundant yield. *Wetzel:* Favorable weather for maturing. *Cabell:* Looking very fine. *Summers:* Cut short by heavy rains, which fell almost incessantly for two months. *Harrison:* Very promising. *Wayne:* Much injured on low land by high water, but the crop left is the largest ever grown.

KENTUCKY.—*Adair:* Looks unusually well, but overshooting. *Fleming:* Very promising. *Cumberland:* Has filled well and will yield largely. *Owsley:* Will not average half a crop. *Daviess:* On the river, where submerged, a total failure. *Callaway:* Excellent. *Shelby:* Above an average. *Laurel:* Good on high land, but very light on low, wet land. *Grayson:* Has come out wonderfully. *Jackson:* Cut short 10 per cent. by dry weather. *Clinton:* Fine. *Spencer:* Ten days late. *Breckinridge:* Suffering for want of rain. *Gallatin:* Immense losses by rains and floods will reduce the crop 25 per cent. *Metcalf:* Will not be a full crop, owing to too much rain. *Monroe:* Very good. *Russell:* Has been badly damaged by rains, floods, and winds, and now is being injured by dry, hot weather.

OHIO—*Logan:* The long-continued rains have been favorable to the crop. *Miami:* The largest by far ever grown. *Adams:* Very promising, but needing rain. *Henry:* Backward, and badly down from wind and rains. *Ross:* Injured by wet weather till the 15th of August, and since then by drought. *Monroe:* Extra. *Coshocton:* More backward than last year, but promises a better crop. *Delaware:* An immense yield. *Hancock:* Backward, owing to the cool weather. *Holmes:* The present weather very favorable for corn. *Jackson:* Promises a large yield. *Medina:* Two weeks behind. *Van Wert:* With favorable fall will make half crop. *Fairfield:* Ripening finely. *Marion:* A splendid crop. *Morgan:* Large quantities flooded and destroyed in July. *Union:* Will need the most of September to ripen in. *Gallia:* A few thousand acres totally destroyed by water, yet that on the uplands is so extra that the average is maintained. *Pike:* Heavy rains, followed by dry weather, will damage the crop at least 10 per cent. *Scioto:* The Scioto swept all its bottom-lands, destroying all the corn. *Athens:* On the hills, good; in the valleys, mostly destroyed by floods.

MICHIGAN—*Kalamazoo:* Heavy growth. *Calhoun:* Has a most vigorous growth, but is retarded in ripening. *Grand Traverse:* Cool for corn. *Allegan:* Late, but looks first-rate. *Jackson:* The weather all that could be desired for corn; a large growth, but ten days late. *Lapeer:* Never looked better. *Manistee:* Promised better than ever before until damaged, in low places, by a frost, August 21 and 22. *Mecosta:* A warm September will make more than an average yield. *Ionia:* Late, but now maturing rapidly. *Shiawassee:* Suffering from drought. *Mason:* Badly cut by frost, August 21 and 22; will not be half crop. *Saginaw:* Late, but hurrying along the last ten days. *Tuscola:* Good, but much very late. *Wayne:* Was never better. *Barry:* Hurt in some places by frost, and now beginning to dry up. *Ottawa:* Two weeks late; 10 per cent. destroyed by frost, August 15. *Van Buren:* Never a larger growth; backward, but the weather now fine. *Washtenaw:* Weather favorable. *Branch:* Late. *Leelenaw:* Looks well, but very backward.

INDIANA.—*Elkhart:* Rather backward. *Franklin:* Stands thick on the ground and very tall, but is not earing well. *Madison:* The great floods of August ruined a great amount of corn, and the crop will be light. *De Kalb:* Backward. *Floyd:* Good. *Dearborn:* Could have reported a great increase in the crop had it not been for the floods, by which thousands of acres were overflowed and ruined. *Howard:* Poorly cultivated, and very backward. *Ripley:* Will be good. *Orange:* The outlook good. *Hendricks:* Not doing well, on account of dry weather. *Grant:* Hardly half a crop. *Gibson:* On upland a fair crop; drowned out on bottom-land. *Clarke:* Excellent. *Union:* Damaged 25 per cent. by the rains and storms in July. *Warren:* Prospect never better. *Washington:* On the bottom-lands all lost by the floods; on upland, over an average. *Whitley:* Fine weather for corn. *Brown:* Severely damaged on the overflowed bottoms. *Clay:* Several thousand acres swept off or ruined by the overflow. *Dubois:* On low bottoms all lost; on high ground above an average. *Hamilton:* Will be a short crop. *Tippecanoe:* Large quantities on the bottom-lands, which produce the best corn, destroyed by the unprecedented floods.

ILLINOIS.—*Alexander:* Some drowned out on the bottoms. *Stephenson:* Frosts on the nights of August 20 and 21 injured a large percentage. *Pike:* Late, but looks well on uplands; on bottoms, poor. *Schuyler:* Late on account of replanting; excessive growth of stalk. *Madison:* Ten days backward. *Henry:* Immense in growth and heavy with ears. *De Kalb:* Promise of the largest crop for many years. *Crawford:* The greatest damage to corn from excessive rains ever known. *Ford:* A heavy crop. *Lee:* Very late. *McHenry:* Promises an enormous yield. *Pope:* Not well cultivated, and drowned out on low grounds. *Winnebago:* Killed by frosts in all the valleys on the nights of the 28th and 29th. *Clark:* Unusually large crop, but diminished one-twentieth by the amount destroyed on the streams. *Hancock:* Promises a larger yield than in any former year. *Pratt:* Very good except where drowned out. *Carroll:* Injured by frost in low lands. *Mason:* Looks well. *Moultrie:* Improved wonderfully in the

ast three weeks. *Jersey:* The largest crop for many years; a great deal stands from 15 to 18 feet high. *Marshall:* Enormous. *Peoria:* Prospect that it will be fully matured and very heavy. *Putnam:* Never better. *Vermilion:* Promises well, but two weeks late. *Edwards:* The high grounds, where we usually expect but little corn, produce well, but our best corn-lands are about nothing. *Effingham:* A failure on all low, undrained lands. *Fayette:* Good on high land; ruined with high waters on bottoms and low prairies. *Fulton:* The hot, dry weather of the last week has nearly put the crop out of danger. *Iroquois:* Has improved wonderfully the last ten days. *Macon:* A fair crop, and will be out of danger by September 18. *Massac:* Fine on upland, but on bottoms not more than half a crop. *Mercer:* Fine weather, making a good crop almost sure. *Ogle:* Injured on low grounds by frosts on August 22 and 23. *Richland:* Very good on high land, but in many other places worth nothing. *Scott:* Curing fast. *Shelby:* Promises a heavy crop on uplands, but on extensive bottoms, submerged, all dead; over one hundred families have lost all their corn, wheat, oats, and potatoes. *Warren:* Late, causing solicitude lest it be overtaken by frost. *White:* Many thousands of acres have been lost by the overflow, and many more by the continued rains. *McLean:* Late, but will be 25 per cent. above average if not damaged by frost.

WISCONSIN.—*Washington:* One-half killed by frosts on the nights of August 21, 22, and 23. *Jefferson:* Greatly damaged by frost. *Ozaukee:* Injured in some places by frost. *Juneau:* A severe frost on the 28th of August did immense damage to corn; one-fourth destroyed. *Columbia:* Light and late. *Eau Claire:* Greatly damaged by frost, August 22. *Richland:* Badly damaged by frost in places. *Sauk:* Badly damaged by frost in many places. *Waukesha:* Damaged by frost. *Walworth:* Two-thirds destroyed by chinches and frost. *Brown:* Damaged in many places by frost. *Chippewa:* Injured very badly by the severe frost of August 22. *Dodge:* Very backward, and many pieces spoiled by frost on the 21st and 22d. *Milwaukee:* Severely injured by frost on low, damp ground. *Vernon:* The favorable prospect lessened by frost. *Waupaca:* Destroyed on low ground by frost. *Iowa:* Killed on low grounds by frost. *St. Croix:* Late. *Adams:* Late and badly injured by frost; probably one-half will not ripen. *Calumet:* Good, but fourteen days late. *Outagamie:* Injured by the heavy frost on all low ground. *Crawford:* On the high lands, three-fourths of a crop; in the narrow, low valleys, killed by frost.

MINNESOTA.—*Mower:* Killed by frost on the 22d in some parts of the county. *Steele:* Late. *McLeod:* Backward. *Waseca:* Very late, but stands fair. *Wright:* Very backward, and some pieces killed by frost. *Goodhue:* Looks well, but is late. *Olmsted:* Badly damaged by frost on the nights of the 21st and 22d. *Pope:* Not as good as usual; cold and wet August. *Rock:* Growing finely, but will require, to mature, a September without frost. *Stearns:* August too cool for corn. *Carver:* Badly prostrated by storms. *Cottonwood:* Two weeks late, but promising if not killed by frost. *Martin:* Very heavy-eared. *Winona:* Later than usual, but doing finely.

IOWA.—*Van Buren:* Damaged by the enormous growth of weeds, and flat ground badly drowned out. *Johnson:* Does not promise so well as a month ago, owing to dry weather at a critical time. *Jones:* Backward. *Bremer:* The weather through the greater part of August too cool. *Appanoose:* Will not exceed ten bushels per acre. Nearly all the bottoms were washed out and utterly ruined. *Franklin:* Looks well, but two weeks late. *Hardin:* Is recovering from damage by rains in June. *Harrison:* Too wet for corn. *Polk:* Yield will be 10 per cent. heavier than last year. *Shelby:* Late fifteen days. *Woodbury:* Promises well. *Benton:* Ten days late. *Buena Vista:* A good growth, well eared, but two weeks late. *Cass:* Prospects unsurpassed. *Clinton:* Late, but the weather all that could be desired. *Decatur:* Very weedy. *Fremont:* That left by the grasshoppers of the first planting as good as the county ever had. *Howard:* On bottom-lands, killed by the frosts of August 22 and 23; on high lands, very backward. *Muscatine:* The prospect most glorious. *Cerro Gordo:* Late ten or fifteen days. *Chickasaw:* Extra good, but late. *Madison:* Late twenty days, but will be a good crop if frost holds off a few days.

MISSOURI.—*Macon:* The finest I ever saw in Missouri. *Shelby:* Very fine. *Cass:* Above average. *Nodaway:* Grasshoppers destroyed half the crop in June, and August was too dry for the replanted. *Polk:* Badly damaged on bottoms by overflowing. *Caldwell:* A prodigious crop. *Moniteau:* Promises to be enormous. *Butler:* Very promising. *Boone:* The yield will be at least 50 per cent. above an average. *Christian:* Better than for years. *Harrison:* Never better. *Phelps:* Has improved. *Platte:* Promising a fine yield. *Vernon:* Probably a full crop. *Wayne:* Best prospect for years. *Adair:* Ten per cent. better than last year. *Laclede:* On the rivers not over half a crop, owing to damage by floods, but the uplands make the whole average 100. *Maries:* Very good on uplands, but hundreds of acres destroyed on rich bottoms by wet. *Perry:* Very good. *Saint Francis:* Very fine. *Ralls:* Good crop. *Pettis:* Promises an abundant yield. *Newton:* Unusually heavy. *Clay:* Planted the second and third times, and promising. *De Kalb:* Replanted after June 20; will make feed and some good corn.

KANSAS.—*Doniphan:* The first crop destroyed by grasshoppers; if it were a month

earlier, the condition would be above average. *Franklin:* Late corn looks fine, but if we do not have rain within a week it will only be good fodder. *Dickinson:* Splendid. *Graham:* Splendid; some pieces average 50 bushels per acre. *Labette:* Such a crop was never realized before. *Jackson:* The most prosperous crop ever seen growing in Kansas. *Douglas:* Promise of one of the heaviest crops ever harvested. *Cherokee:* The prospect never so good before. *Allen:* The heaviest ever raised. *Butler:* By far the largest ever raised; some fields will yield 100 bushels per acre. *Ellis:* Has never been heavier. *Leavenworth:* Unprecedented in growth. *Lyon:* Hardly could be better. *Sedgwick:* Heavy. *Clay:* Never better. *Neosho:* Coming out remarkably. *Nemaha:* Never better. *Linn:* Many farmers count on 75 to 100 bushels to the acre—an overestimate, I think. *Jackson:* The most promising I have ever seen growing in Kansas. *Cloud:* Splendid. *Jefferson:* The best for many years. *Johnson:* Never saw better, but it is late and in danger of frost. *Wyandotte:* Looking well, but late. *Rice:* Good; will average about 40 bushels per acre. *Osage:* Enormous crop. *Anderson:* A heavy crop. *Washington:* Large acreage and immense yield. *Cowley:* Never better. *Atchison:* The portion not damaged by the grasshoppers is as fine as ever seen.

NEBRASKA.—*Dixon:* A splendid crop. *Hall:* Crop will be good if frosts hold off. *Webster:* The best prospect we have ever had. *Boone:* Very large growth, but some injury by grasshoppers. *Clay:* Never promised so well. *Knox:* Promise of a large crop. *Madison:* Has grown luxuriantly, and not badly injured by grasshoppers. *Antelope:* Late but good, except that one-eighth of the county was injured by grasshoppers. *Merrick:* Unprecedented crop.

WHEAT.

Excepting in the New England States and in those of the Gulf region and the Pacific coast, the damage to the crop, between the periods of ripening and thrashing, by frequent and heavy storms, has been very general. Within the wet area, the continuous rains visited in July the portions in which wheat ripens early, and in August the latitudes where it is harvested later, so that over the whole region the crop was very generally caught either in harvest or in the stack. In Michigan, Wisconsin, and Minnesota, (in which the yield was extraordinary,) and in the Middle States, the rainy season was in progress at the time of reporting, and therefore the extent of the damage was yet undetermined. A considerable portion of the crop in Maryland, and a larger portion in the Gulf States, were secured in good condition before the rainy reason came on. The damage from wet in Kansas and Nebraska, though extensive, appears to have been less than in the valleys of the Mississippi and Ohio.

In Iowa, injury from blight or rust, reducing both quantity and quality, was very general. Most of the States report local injuries to condition from the same cause. Local injuries by the weevil are noted in Maine and Indiana; by chinches, in Indiana, Wisconsin, and Missouri; and by grasshoppers, in Kansas, Nebraska, Missouri, and throughout the grasshopper region of the Northwest. In California the crop, though reduced in yield and in some localities affected in quality by rust, was generally harvested in superior condition; while in Oregon an extraordinary yield appears to have been secured without serious damage.

The condition of wheat, when harvested, for all the States averages 79. The State averages are as follows: Maine, 96; New Hampshire, 101; Vermont, 98; Massachusetts, 100; Connecticut, 100; New York, 65; New Jersey, 90; Pennsylvania, 85; Delaware, 92; Maryland, 92; Virginia, 86; North Carolina, 97; South Carolina, 97; Georgia, 98; Alabama, 105; Mississippi, 139; Louisiana, 85; Texas, 122; Arkansas, 113; Tennessee, 98; West Virginia, 74; Kentucky, 80; Ohio, 61; Michigan, 88; Indiana, 61; Illinois, 73; Wisconsin, 98; Minnesota, 101; Iowa, 77; Missouri, 67; Kansas, 83; Nebraska, 80; California, 70; Oregon, 106.

The quality of the present crop is poorer than for several years. That of the Pacific coast is fine, notwithstanding the decreased yield; that

of the South is of excellent quality, except in Virginia and Tennessee; but no surplus of southern wheat can be obtained except in the wheat-district of Texas. In the West the winter-wheat escaped damage from rain to a greater extent than spring-grain. Much of both kinds was harvested in good condition, the rains in the spring-wheat region coming later than farther South, but a large proportion of both was injured in the shock by heavy and repeated storms, to such an extent as to cause panic among farmers, while millers were often at their wits' end to know where to obtain grain fit to grind for flour. Recent reports are more favorable, and it is to be hoped that the prevailing estimate of depreciated quality may prove somewhat exaggerated.

A few counties in Arkansas are greatly extending wheat-culture, in one of which, Woodruff, 10,000 bushels of No. 1 are reported grown on 500 acres. In Texas, 20 to 25 bushels per acre are frequently reported, and a crop of Touzelle sent out by the Department produced 30 bushels per acre.

The following local wheat-items are appended:

MAINE.—*Piscataquis:* Much injured by rust and the weevil. *Oxford:* Best crop for years. *Waldo:* Injured by mildew and the midge.

VERMONT.—*Caledonia:* A good growth, but rusty and smutty. *Grand Isle:* Injured in harvest by wet and heat.

NEW YORK.—*Seneca:* Winter, an unprecedented failure; spring, a good crop, but small in acreage. *Queens:* About half a crop, of good quality. *Steuben:* Reduced by drought. *Genesee:* Nearly a failure. *Richmond:* Much damaged in harvesting by wet weather. *Erie:* Very poor; some caught in the rains. *Orange:* Little more than half an average yield, but of excellent quality.

NEW JERSEY.—*Sussex:* Not half a crop. *Warren:* Only two-thirds of a crop; grain good.

PENNSYLVANIA.—*Northampton:* Turns out in thrashing better than expected. *Bradford:* A poor crop harvested; in fair condition. *Armstrong:* Slightly damaged by wet harvest. *Bedford:* Damaged after cutting by excessive rain. *Cambria:* Much grew in the shock. *York:* About half a crop. *Beaver:* Grew in the shock; some stacks appear green. *Bucks:* Product less than was supposed, and quality very inferior. *Fayette:* Damaged in the shock. *McKean:* Green and spoiled all over the county. *Indiana:* Housed in a wet condition and badly spoiled. *Tioga:* Some injured by the wet. *Washington:* Much injured in the shock by wet.

MARYLAND.—*Howard:* Inferior yield. *Caroline:* Turned out well. *Dorchester:* An extra crop of fine, plump wheat. *Baltimore:* Of good quality, secured in good condition. *Saint Mary's:* Greatly damaged by late heavy rains. *Calvert:* Harvested in good condition, but much since damaged by the almost constant rains. *Cecil:* Yield far short of average, but the grain good. *Harford:* Complaint of grain sprouted in the stack.

VIRGINIA.—*Powhatan:* Unusually good in quantity and quality. *Caroline:* Mostly left in the shock through the rains; the little thrashed out, in bad order. *Page:* Secured in good condition before the rains. *Middlesex:* Greatly damaged since harvest by wet. *Rappahannock:* Fears that it will be much injured in the stack. *Spottsylvania:* Fully 20 per cent. above average; nearly all secured. *Chesterfield:* Condition good when harvested, but much injured since by wet weather. *Floyd:* Damaged by continued rains. *King George:* Better than last year when harvested, but very heavy damage in the shock by rains. *Louisa:* Greatly injured in the shock by rains. *Madison:* Harvested in good condition; many crops very fine. *Cumberland:* Greatly injured by rust. *Pulaski:* Badly damaged by incessant rains. *Wythe:* One-half too much injured by sprouting to make flour. *Gloucester:* Much injured in the field by continual rain. *Bedford:* Very much damaged by rains. *Craig:* Damp and molded by wet. *Orange:* Seriously damaged by the long rains in quantity and quality. *Charles:* Materially injured; much still in the shock. *Essex:* Injured in the shock by rains: *Fairfax:* Generally yielded well; the best fields, 20 bushels per acre. *Henrico:* Much injured in the shock. *Highland:* Good in quality, but small yield; say 65. *Lancaster:* Harvested in good condition, but shocks that were left in the field injured by rain. *Montgomery:* Badly damaged by rain in the shock. *Richmond:* Much has been injured by wet. *Culpeper:* Badly damaged in the shock. *King and Queen:* Much lost in shock and stack. *Fluvanna:* Much sprouted in the shock. *Buchanan:* Seriously injured in the shock. *Smith:* Damaged during harvest.

NORTH CAROLINA.—*Mecklenburgh:* Poor; injured by rains. *Person:* Seriously hurt by rains. *Caswell:* Damaged by wet after harvest. *Chowan:* Small crop, but good.

Stokes: Slightly damaged by rain before secured. *Tyrell:* Badly injured by rust. *Anson:* Good. *Haywood:* Quantity and quality generally prove less and worse than anticipated. *Alamance:* Injured by rains after harvesting 25 per cent. *Caldwell:* Some injured and sprouted.

GEORGIA.—*Rabun:* Good. *Towns:* Better than was expected before it was thrashed. *Banks:* Harvested in good condition.

ALABAMA.—*Greene:* Very fine. *Lauderdale:* Excellent. *Calhoun:* About as good as the land can bring. *Autauga:* Greatly injured by rust. *Randolph:* Better than for years.

MISSISSIPPI.—*La Fayette:* Heretofore produced in small quantities; but a large area had been seeded this year, and the yield has been very large, quite enough to supply the county. *Lee:* The crop almost incredible.

TEXAS.—*Williamson:* Saved in good condition; spring, 20, and winter, 25, bushels per acre. *Dallas:* Will average 25 bushels per acre. *Upshur:* Better than for many years. *Bandera:* This is the second year with Touzelle wheat from the Department; the average is 30 bushels per acre. *Cooke:* Much injured by great quantities of rain. *Red River:* Very fine; 15 to 40 bushels per acre.

ARKANSAS.—*Garland:* Did well. *Baxter:* Never better. *Stone:* Better than for many years. *Jefferson:* The best crop for years. *Monroe:* Harvested in good condition, and the yield never excelled. *Woodruff:* Ten thousand bushels thrashed, making an average of 20 bushels per acre, nearly all of it No. 1. *Montgomery:* Better than ever known; will average 18 to 20 bushels per acre. *Newton:* Could not ask for better. *Fulton:* Best crop for years, but some injured in the shock.

TENNESSEE.—*Anderson:* Damaged by wet at least one-half. *Loudon:* Turned out, when thrashed, better than expected. *Fentress:* Greatly damaged by the wet weather. *Bedford:* Damaged by wet weather. *Trousdale:* Very much damaged in the shock. *Sevier:* Greatly damaged by the rains. *Roane:* Wheat was saved in a miserably poor condition. *Giles:* The yield 75 per cent. above an average, but damaged 10 per cent. in the shock. *Blount:* An average crop harvested, but 33 per cent. lost by wet. *Carter:* Two-thirds badly damaged by rains. *Montgomery:* Great damage by rains after being harvested. *Hancock:* Damaged in the shock. *Morgan:* Much injured. *Greene:* Much injured in the shock. *Dickson:* Damaged in shock 12 per cent. *Sequatchie:* Damaged. *Wilson:* Damaged.

WEST VIRGINIA.—*Tucker:* More than two-thirds rotted in the shock. *Raleigh:* Injured 10 per cent. by rains. *Pleasants:* Materially injured by rains. *Jackson:* The floods swept off at least 15 per cent. *Gilmer:* A portion lost in the shock by wet weather. *Braxton:* Was good when cut, but at least one-third lost in the field. *Boone:* Almost ruined by the rains. *Mercer:* Badly damaged. *Putnam:* The poor crop was much reduced by excessive rains. *Mason:* Injured in shock and stack. *Randolph:* Nearly ruined by the wet. *Wetzel:* Damaged in the shock. *Barbour:* Sprouted in the shock. *Cabell:* Scarcely any wheat fit for bread. *Summers:* Seriously injured. *Tyler:* Stacks floated off by the floods. *Wayne:* Greatly injured by the wet during harvest.

KENTUCKY.—*Adair:* One-third rotted in the shock, and the remainder very much injured. *Fleming:* Almost ruined in the shock; not more than half the crop harvested, and almost half of that ruined. *Montgomery:* Was good, but at least 50 per cent. damaged by wet. *Clarke:* Suffered greatly from wet weather after being cut. *Kenton:* Badly sprouted. *Warren:* Injured in the shock about 15 per cent. *Owsley:* A poor crop, but over half lost in the shock. *Daviess:* About one-third ruined in the shock. *Jessamine:* Damaged 25 per cent. by rains in July, which reduces it to half a crop. *Edmonson:* Good when harvested, but 25 per cent. or more lost by rains. *Shelby:* Saved in a damaged condition. *Pendleton:* A large percentage injured by the wet weather. *Grayson:* Not so badly damaged by the wet as was reported. *Fayette:* Has not averaged over 8 bushels to the acre, and that generally damaged. *Logan:* Injured in the shock 12 or 13 per cent. *Clinton:* Injured in the shock. *Scott:* Thirty per cent. ruined by the rains. *Carroll:* Ruined in many cases by the rains. *Graves:* Wet weather destroyed 25 per cent. *Harrison:* Less than half a crop, and from one-quarter to one-third of that spoiled. *Simpson:* Damaged 25 per cent. after harvesting. *Spencer:* The rains destroyed 25 per cent. *Bracken:* Very much injured by the rains after harvesting. *Breckinridge:* Damaged in the shock. *Gallatin:* At least one-third of the little crop was lost by growing and rotting in the shock. *Owen:* Injured by the rains. *Hardin:* Injured 20 per cent. *Metcalfe:* Nearly all damaged; only about 25 per cent. of a crop saved. *Monroe:* Sprouted in the shock.

OHIO.—*Trumbull:* Much has been damaged. *Logan:* Much sprouted and musted. *Adams:* Turning out less than was expected at harvest, and the quality of most of it poor. *Henry:* Turning out shriveled and light. *Ross:* Fair when harvested, but destroyed in the shock by wet. *Montgomery:* Damaged. *Monroe:* Not so much injured as at first supposed. *Coshocton:* Injured in the shock 33 per cent. *Delaware:* Will be compelled to eat musty bread for the next year. *Hancock:* Large crop; seriously injured by the wet weather. *Holmes:* Considerably damaged. *Medina:* Turns out

well. *Van Wert:* Damaged by rust and wet weather. *Williams:* A large portion sprouted in the shock. *Carroll:* The grain somewhat shrunk. *Marion:* Not so much hurt by the rains as was anticipated. *Morgan:* Much sprouted, and more than half damaged in the shock after harvest. *Union:* Some so badly injured that it will not sell at all. *Tuscarawas:* Sprouted to some extent. *Geauga:* Winter-wheat yielding 20 to 25 bushels per acre, of excellent quality. *Washington:* Injured by rains in July. *Gallia:* Badly damaged in shock and stack. *Pike:* Damaged by rains, after harvesting, 10 per cent. *Scioto:* The Scioto swept all its bottom-lands, destroying some wheat. *Athens:* A light crop; greatly injured by wet after harvest.

MICHIGAN.—*Iosco:* The finest crop ever raised, promising 25 to 35 bushels per acre. *Grand Traverse:* Plump and well headed, but in danger from wet weather in harvest. *Lapeer:* Berry excellent, and yield better than expected from the amount of straw. *Manistee:* Injured by heavy rains during harvest. *Mecosta:* Winter-wheat yields better than was anticipated, but varies from 5 to 35 bushels per acre. *Shiawassee:* Light in quantity and quality. *Mason:* Much damaged by wet after being cut. *Saginaw:* Shrunk some with rust, but yield more than was expected. *Tuscola:* Harvested in good condition, and the yield in some instances equals 40 bushels per acre. *Alpena:* Very heavy; considerably damaged by rains in harvest. Some fields averaged 40 bushels per acre, after an estimated loss of 10 bushels per acre by rains. *Charlevoix:* Spring-wheat not harvested; some fields of winter injured by rains after the grain was cut. *Ottawa:* A better crop than for years. *Washtenaw:* Mostly secured in good condition, but late; damaged by wet weather. *Branch:* Light yield, inferior quality, harvested in good condition. *Leelenaw:* Winter, about 20 per cent. grew in harvesting; spring, the best ever raised, harvested in good condition.

INDIANA.—*Franklin:* Sprouted and rotted. *Madison:* The great floods of August ruined a large amount. *Elkhart:* Was stored in good condition. *De Kalb:* Badly injured by rust and wet weather. *Floyd:* Sprouted in the shock, but loss not so great as expected. *Howard:* Badly damaged by weevil, and worse by rains. *Morgan:* On the river and creek bottoms was all washed away and that on the uplands badly damaged by sprouting. *Ripley:* What we saved is worthless. *Grant:* Not half a crop; damaged badly by sprouting. *Gibson:* Injured greatly by the rains. *Clarke:* Badly damaged by the rains. *Union:* Almost ruined by rains in harvest. *Warren:* About half a crop. *Brown:* Damaged in the shock. *Clay:* Several thousand acres either swept off or ruined by the overflow, and that saved much sprouted in shock and stack. *Dubois:* Weather-beaten, sprouted, and rusty. *Knox:* The amount destroyed by floods would reduce the estimate 10 to 20 per cent., and all greatly damaged.

ILLINOIS.—*McLean:* A large amount was not cut, and what was is of poor quality. *Morgan:* Used up by the storms. *Alexander:* Badly damaged after harvest by wet weather. *Pike:* What there is is of poor quality, owing to heavy rains while in the shock. *Schuyler:* Damaged by rains. *Madison:* Poorly filled. *Johnson:* A great portion sprouted in the shock. *Henry:* Secured without material injury. *Clinton:* Injured 25 per cent. in the shock. *Jasper:* Much injured in the shock. *Lee:* Yield about 8½ bushels per acre; poor quality. *Marion:* A good crop; half spoiled in the shock. *Pope:* Damaged by sprouting in the shock. *Clark:* Above an average crop put into the shock in good condition, but greatly damaged by rains, and on the streams large quantities lost by unprecedented floods. *Carroll:* Not turning out well. *Mason:* Poor yield and very bad quality. *Menard:* Damaged by the rains. *Perry:* Injured by rains in harvest. *Saint Clair:* Will fall below half a crop in both quantity and quality. *Vermilion:* Poor; injured by rust before harvesting, and all injured, and much destroyed by floods after; not one-fourth of an average. *Edwards:* About one-fifth was uncut, and fully one-fifth was thrown to the hogs. *Effingham:* Damaged in the shock. *Fayette:* Damaged considerably. *Macon:* Badly damaged; one-third rotted in the stock. *Massac:* Injured in the shock 25 per cent. *Mercer:* Injured by growing in the shock and stack. *Ogle:* Injured by rust, blight, and chinches. *Sangamon:* Badly injured by the wet weather.

WISCONSIN.—*Washington:* Winter yields 28 to 30 bushels per acre; spring, 20 to 25. *Ozaukee:* Never a greater yield per acre. *Columbia:* Good. *Fond du Lac:* Damaged by lodging and chinches. *Waukesha:* Damaged by chinches, commencing ten days before harvest. *Dodge:* The condition improved materially after the 1st of August, cool nights and rainy weather checking the operations of the chinch-bugs. *Vernon:* Injured by chinches. *Saint Croix:* Heaviest crop when harvested for years, but sprouting in the shocks. *Calumet:* Spring-wheat averages 27 bushels per acre. *Crawford:* Winter, the largest crop for years; spring was badly damaged by chinches.

MINNESOTA.—*Renville:* Much better than for the last two years. *Steele:* Best crop in yield and quality since 1860, but being injured by rains. *McLeod:* Nearly all stacked in good condition. *Swift:* Unfavorable weather for harvesting. *Waseca:* Never so heavy before. *Wright:* Not so good as when harvested. *Olmsted:* Some growing in the shock and stack. *Pope:* High winds and rain in harvest will seriously affect the yield. *Redwood:* Every indication of a greater average yield than fifteen bushels per acre. *Stearns:* Great fears that the magnificent crop will be seriously

injured in the shock by the prevailing rains. *Wabasha:* Was put into the shock in fine condition, but it commenced raining ten days ago, and it has been impossible to secure it yet. *Carver:* About half shocked and sprouting badly. *Cottonwood:* Was badly destroyed by grasshoppers, and now being badly injured in the shock by wet. *Todd:* One-third damaged either in the shock or stack. *Douglas:* The best crop, when cut, ever raised in the county, but 75 per cent. standing in the shock and threatened with ruin by the rains. *Freeborn:* Damaged in the shock 10 per cent. *Martin:* Average yield, about 22 bushels per acre. *Scott:* A loss of at least 33 per cent. in shock and stack by rains. *Watonwan:* The little that the grasshoppers left nearly destroyed by rains. *Winona:* About one-third in the stack in fair order; the remainder wet and growing.

IOWA.—*Appanoose:* Will not return the seed. *Franklin:* Badly blighted. *Floyd:* Considerable blight. *Hardin:* Badly blighted. *Harrison:* Much injured by rains. *Polk:* Blighted very much. *Shelby:* Damaged in shock and stack. *Woodbury:* Reduced at least one-third by blight, and being much more reduced by continual wet. *Benton:* Blighted and poor quality. *Buena Vista:* Only about 2 per cent. in stack, and almost continued rains. *Cass:* Shortened 50 per cent. by blight and rust. *Fremont:* Greatly damaged by grasshoppers when in the head, and subsequently by hail and wind storms. *Plymouth:* Injured by blight and scab, and now the rains destroying thousands of dollars' worth. *Sioux:* A great portion destroyed by the rains. *Cerro Gordo:* Full 90 per cent. still remains in the field, and much of it sprouting. *Chickasaw:* Being badly damaged by wet weather; all badly blighted. *Des Moines:* Our spring-wheat will all be graded No. 3, or else rejected. *Marion:* Thrashes out small in quantity, and much of it poor. *Pottawattamie:* Will not average over 8 bushels per acre, and poor at that.

MISSOURI.—*Gasconade:* After it was cut 33 per cent. lost by wet weather. *Camden:* All that was not swept away damaged in the shock by sprouting. *Nodaway:* Fall-wheat winter-killed; spring, injured by chinches while growing, and by rains in the shock. *Polk:* Injured by sprouting in the shock. *Moniteau:* The portion of the crop saved badly damaged from swelling and sprouting. *Butler:* Damaged after harvest by rains. *Christian:* Injured by the wet. *Franklin:* Injured in the shock fully 33 per cent. by sprouting. *Harrison:* Injured some by wet weather. *Platte:* Not more than 25 per cent. of the usual yield, but the kernel fine. *Taney:* Damaged 25 per cent. in the shock. *Vernon:* Condition reduced since harvest 35 per cent. by damage in the shock. *Wayne:* Ruined by the wet weather. *Lincoln:* Damaged by rains. *Adair:* A total failure. *Dallas:* Damaged by wet in harvest. *Grundy:* Averaging only 6 bushels per acre. *Laclede:* Not half a crop, and that greatly damaged in the shock. *Maries:* Greatly damaged in the shock. *Montgomery:* Badly damaged by rains. *Perry:* Injured by rain one-eighth. *Saint Francis:* Considerably sprouted in the shock. *Stoddard:* At least one-third ruined in the shock. *Daviess:* Greatly damaged in the shock and stack. *Benton:* Nearly a total failure. *Newton:* Injured some by rust, and badly sprouted by rains. *Dent:* Reduced 50 per cent. since harvest by rains. *Clay:* Utterly destroyed by grasshoppers.

KANSAS.—*Doniphan:* Almost nothing saved. *Republic:* Considerably injured by rain before stacking. *Labette:* Fair when cut, but injured 8 per cent. in the shock by rains. *Jackson:* Berry good, but yield reduced by the grasshopper. *Leavenworth:* Grain good but cut short by grasshoppers. *Lyon:* Badly damaged in the shock. *Clay:* Average 15 to 20 bushels. *Anderson:* Little sown and a light crop. *Washington:* Much damaged by rains in harvesting. *Montgomery:* Damaged 10 per cent. since harvest by wet weather. *Cowley:* Never better. *Woodson:* The figures, 85, indicate the condition when harvested, but the crop was subsequently badly damaged by wet weather.

NEBRASKA.—*Dixon:* Never better. *Pawnee:* Cut short by grasshoppers. *Webster:* A little lighter in yield than last year. *Boone:* Average yield 15 bushels per acre. *Clay:* Light, injured by drought; quality will grade No. 3. *Knox:* Turns out poorly, owing to the ravages of the grasshoppers. *Madison:* Badly injured in the shock by heavy rains. *Antelope:* Good quality, but 10 per cent. injured in the shock and some in the stack. *Gage:* A great many pieces did not pay for cutting on account of weeds.

CALIFORNIA.—*Del Norte:* Some late wheat rusty. *Placer:* Yield far better than anticipated before thrashing. *Stanislaus:* Good quality, weighing 63 pounds per bushel. Not more than one-third of a crop in yield.

OREGON.—*Benton:* Fall-sown, good; spring, cut short by drought. *Grant:* Never before so uniformly good. *Linn:* Shall have 25 per cent. more in bushels than in any former year. *Douglas:* Reduced by extreme heat and drought. *Tillamook:* Improved beyond expectations since the last report.

COTTON.

Our correspondents report the condition of cotton far better than in September of last year, except in the more southern of the Atlantic coast States.

The following are the averages of August and September of both years:

States.	1875.		1874.	
	September.	August.	September.	August.
North Carolina	90	99	87	95
South Carolina	80	84	86	97
Georgia	76	86	77	94
Florida	75	85	77	102
Alabama	87	93	81	90
Mississippi	98	104	74	89
Louisiana	88	99	62	83
Texas	94	93	65	105
Arkansas	99	108	47	87
Tennessee	96	107	52	83

The prevalent droughts of July were succeeded by rains in August, too copious for the best results in the Mississippi Valley, and quite injurious in heavy soils of the eastern belt, causing rust, shedding of leaves and fruit forms, and to some extent rotting of the lower bolls. There is a rank recent growth, which will yield largely with a favorable and long autumn season, or prove a disappointment in case of an early killing frost. In some parts of Texas drought continued for nine weeks, but the seasonable rains since the middle of August have placed the fields in high condition in all except the most severely-parched localities.

Losses from prevalence of insects will scarcely be a factor in calculating the product of the present year. A few counties in Florida and Lower Georgia report the caterpillar; the boll-worm is more numerous in Lowndes, Mississippi, and heard from in a few other counties; lice are mentioned by some correspondents; and in Covington, Alabama, the correspondent reports a new enemy, which he calls "a minute gnat," which harbors on leaves like lice, producing widespread and serious injury.

As compared with September, 1874, the only States now reporting lower condition are South Carolina, Georgia, and Florida; and in the Mississippi Valley the improvement is very marked, particularly in Tennessee and Arkansas, in which the averages were very low in 1874.

A large proportion of the cotton-area of the country is represented in the September returns, which include no less than sixty cotton counties in Texas, and seventy-six in Georgia.

The returns for August showed an improvement of the cotton-crop of 4 per cent. in North Carolina, 1 in Mississippi, and 4 in Arkansas. These States were largely favored with the same conditions of growth which secured their high averages of July. Texas maintained her previous figures, the drought in some counties being counterbalanced by fine weather in others. Tennessee lost 2 per cent., mostly on account of injuries to bottom-crops from excessive rains. In Louisiana the average declined 6 per cent., on account of local drought, though several parishes reported very promising crops. This injurious influence cut down the average of Georgia 11 per cent., of South Carolina 15 per cent., and of Florida 16 per cent. Lice and caterpillars were reported in two or three counties, but no damage to the crop noted.

VIRGINIA.—*Sussex:* Better than for the last seven or eight years. *Richmond:* Fine growth but shedding its bolls.

NORTH CAROLINA.—*Wilson:* The rust has become general, and but little of the cot-

ton will escape it. *Anson:* Late, with some rust. *Alamance:* Plant fine. *Gates:* The constant rains of August caused the weed to grow rapidly and the forms to drop off at least one-third. *Gaston:* A wonderful growth of plant and show of fruit. *Greene:* The two extremes of drought and excessive wet produced rust, which has spread very rapidly. *Onslow:* On the whole, bids fair for a good crop. *Perquimans:* Materially injured by the excessive rains. *Harnett:* Injured by rain. *Montgomery:* Injured by wet; shedding bloom. *Polk:* Too much rain. *Mecklenburgh:* If we have two weeks of dry weather the crop will be as good, or better than for several years. *Robeson:* Injured by excessive rains; rust very prevalent. *Moore:* Rust beginning to appear. *Columbus:* Daily showers through the entire month have caused it to drop forms freely. *Clarendon:* Rust very general and disastrous. *Lenoir:* Doing well. *Duplin:* Since the 12th of August very rainy, causing cotton to shed its forms and rust. *Wayne:* Excessive rains caused considerable shedding, and rust is spreading rapidly. *Davidson:* Too wet for cotton. *Pasquotank:* The best since the war, till now, seemingly, almost ruined by rains. *Surry:* Promising, unless it runs too much to weed. *Cumberland:* Greatly injured by heavy rains in August. *Franklin:* Injured by rains and rust. *Nash:* Luxuriant growth of weed, but a good deal of rust. *Pitt:* Heavy daily rains from the 8th to the 20th caused rust to appear in about half of the county; the other half yet doing well. *Beaufort:* Seriously injured by August rains. *Chowan:* Very much injured by continued wet weather. *Edgecombe:* Still declining from too much wet, and rust beginning to appear. *Tyrrell:* Has had too much rain. *Wake:* Injured by rains in August.

South Carolina.—*Beaufort:* The drought in July proved very destructive to the crop. *Fairfield:* The season favorable for fruiting and maturing. *Horry:* Being injured by rust. *Laurens:* Taking the rust in some localities. *Marlborough:* Compared with last season, 20 per cent. inferior, owing to wet weather. *Newberry:* Injured by rust. *Lexington:* Has improved somewhat. *Edgefield:* Injured by drought and rust. *Union:* Much rust in some localities. *Chesterfield:* Rust more general than I ever knew. *Georgetown:* Has shed a good deal, and is opening badly. *Darlington:* The heavy rains in August have injured the crop to a very great extent, causing rust and throwing-off forms.

Georgia.—*Early:* Has suffered from drought; middle crop mostly lost; top crop now looks promising, but the caterpillar has made a beginning. *Hart:* Present indications all look toward a short crop. *Cherokee:* Rust in some places, which may yet seriously injure late cotton. *Pierce:* Cut down by drought. *Dooly:* Injured badly by dry weather; red and black rust, followed by incessant rains. Will be no top crop or leaves for caterpillars. *Mitchell:* Injured first by drought and since the rains by rust. *Grenada:* A general tendency to rust and blight. *Worth:* Ruined. *Columbia:* Rains too late for cotton. *Telfair:* Ruined by drought; have never seen such a drought. *Harris:* Cut off very much by the drought. *Troup:* That fertilized made a good growth in July, but none in August. *Burton:* Late cotton somewhat damaged by drought in July, but greatly benefited by recent rains. *Henry:* Injured by drought in July; rains in August caused it to shed and take the black rust. *Catoosa:* Stalking largely with extensive bolls. *Muscogee:* In some localities where it was not destroyed by drought too much rain has caused a shedding of squares, and the bottom bolls are beginning to rot. *Dougherty:* The crop poor beyond precedent. *Schley:* Drought through July and part of August too protracted for old cotton, and now the rust in every form is doing considerable damage. *Liberty:* Suffered from drought. *Walton:* Injured by drought, but the weather now favorable, and it is beginning to open finely. *Forsyth:* Suffered from drought in July, recent rains causing many squares to shed. *Gwinnett:* Largely reduced by hot, dry weather. *Bullock:* The rains too late to make much improvement. *Carroll:* The fine prospect blasted by drought; opening pretty freely; picking begun. *Elbert:* A good season through August has sustained the crop. *McDuffie:* Red rust on all the gray lands, and the cotton as dead as if visited by a killing frost. *Appling:* The exceeding hot, dry summer caused cotton to shed its fruit. *De Kalb:* Somewhat retarded by cool weather. *Heard:* The crop very short. *Hancock:* Rainy weather and cool nights have caused cotton to rust, shed, and the bolls to rot badly. *Marvin:* On sandy soil, dying with rust. *Laurens:* Quite short, owing to drought. *Brooks:* Owing to drought and rust the yield cut short fully 35 per cent. *Butts:* Rust has taken it. *Dodge:* The rust has appeared, and is likely to do much damage. *Floyd:* Very seriously damaged by drought from 20th of July to the middle of August. *Twiggs:* Badly damaged by drought, followed by excessive rains. *Whitfield:* A fine weed, well filled with fruit, but late in maturing. *Cobb:* Injured by the drought. *Douglas:* Some rust, but nothing serious. *Jefferson:* The rains set in in time to benefit the late-planted cotton. *Lincoln:* Rust very general; growth almost checked by it. *Pulaski:* Rained every day from the 1st to the 25th, in which time nearly all took rust. *Pike:* Rust is ruining the cotton. *Randolph:* Drought and rust have cut off the crop one-half. *Terrell:* The rains too late to benefit the crop, and the rust is doing great damage.

Florida.—*Madison:* Great damage by drought. *Jackson:* Many farmers say a half

crop cannot be made; the worm is now eating in the fields. *La Fayette:* Ruined by drought. *Gadsden:* Suffered seriously from drought previous to August 1; since then excessive rains have induced general rust. *Columbia:* Early cotton rusting and shedding badly; late looking very well, but caterpillars are making themselves familiar with it. *Suwannee:* A six weeks' drought injured the crop, causing it to rust and shed its fruit badly. *Wakulla:* Very promising, but the hot, dry weather of July caused it to rust and shed its forms on old ground.

ALABAMA.—*Monroe:* Injured by drought, rust appearing on sandy land. *Autauga:* Seriously injured by drought and rust. *Colbert:* Large and fine. *Conecuh:* Rust has invaded every farm. *Dallas:* The general prevalence of rust has injured the crop 20 per cent. *Perry:* Some rust, but general good prospect. *Bullock:* Seriously injured by the drought in July. *Clarke:* On uplands cut off to a greater extent than I ever before knew by the long-continued drought. *Marion:* Injured to some extent by the rains. *Marshall:* Dry weather has stopped the growth of the weed and is improving the bolls rapidly. *Franklin:* A little too wet for cotton. *Wilcox:* Some complaint of rust. *Choctaw:* Taking rust and throwing off leaves, squares, and forms. *Greene:* Season favorable, but some complaints that forms are shedding. *Crenshaw:* The poorest crop since the war. *Lauderdale:* A large weed, but poorly filled; cannot make an average crop. *Covington:* A new enemy has appeared, and the injury is general. It resembles rust, and is taken by many for rust, but on examination I find it is caused by insects, such as I never saw before in cotton. They are minute gnats, and collect on the leaves similar to lice. The exudation, when dry, is a rusty-colored dust, and the whole stalk is involved, causing rapid death. The injury is wide-spread and very serious. *Hale:* Has fallen off since the 1st of August, owing to rust. *Pike:* Red rust on cotton on sandy lands, and black rust on stiff lands. *Shelby:* A kind of dry rust is slowly advancing over all uplands in the cotton, which completely destroys the foliage, tender bolls, and forms. *Jackson:* With a dry and late fall, there will be the largest crop since the war. *Macon:* Rust on low land, and there will be no late cotton. *Montgomery:* Has improved since the rains. *Russell:* Great complaint of rust. *Butler:* Very seriously injured by the summer drought. *Calhoun:* A falling off in August of 28 per cent. *De Kalb:* Doing well. *Lawrence:* Looks well and promising. *Marengo:* On uplands the plant small, but well bolled, and has stopped making; on the bottoms, still blooming, and may make a good yield.

MISSISSIPPI.—*Pike:* Was very fine ten days ago, but much has been overflowed, and is greatly injured. *Newton:* Injured by rust 33 per cent. *Neshoba:* Very fine. *Jasper:* Injured by rust 25 per cent. within three weeks. *Smith:* First injured by drought, then by excessive rains, causing it to rust. *Wayne:* Rust has made its appearance. *La Fayette:* The best crop we have ever known in the county. *Covington:* The rust is injuring the crop worse than the worms ever did. *Noxubee:* Opening rapidly; staple fine. *Lee:* Full of blooms on rich land, but on thinner land black rust is setting in. *Clark:* Greatly injured by the frequent rains, causing the black rust. *Madison:* All rejoicing in the prospect of a good crop. *Wilkinson:* Considerably damaged by rains, causing rust and shedding of fruit. *Adams:* Much damaged by rains; becoming grassy and rotting. *Lowndes:* More boll-worms than since 1867; rust has damaged the crop very much, and is spreading. *Tishemingo:* Not injured by anything except some rust. *Winston:* Has rained a great deal during the last month, and rust has taken the cotton. *Panola:* The past two weeks have been just right for cotton, but only a late season can give us a top crop and mature the middle crop. *Rankin:* On alluvial and fresh land, excellent; on old upland, extremely light—rust and much shedding, owing to continual rains. *Amite:* Will be 120, unless some disaster falls upon it. *Bolivar:* Very full of forms and bolls, but fears that the bottom crop will rot, owing to the many very heavy rains. *Jefferson:* Plenty of rust and rot; rained all through August.

LOUISIANA.—*Caldwell:* Will be shortened at least one-fourth by rust. *Union:* Better than since 1865. *Rapides:* Recent heavy rains and winds have injured the crop. The forms have fallen considerably, and the cotton is lightly bolled. *East Feliciana:* The heavy rains of last week damaged the crop 10 to 15 per cent. *Franklin:* Seriously damaged by rains and high winds in August; affected by both rot and rust. *Madison:* Greatly damaged by heavy falls of rain—from 10 to 20 per cent. *Morehouse:* Shortened very much by drought from June 1 to August 6. *Caddo:* Abundant rain has affected cotton badly with rust and lice. *Cameron:* Damaged by excessive rain at least 20 per cent. *Avoyelles:* Continued rains in August caused the shedding of forms and the rotting of the bottom bolls. *Claiborne:* Injured by rust in a few localities. *Washington:* Continued rains have caused cotton to shed forms and the bolls to rot. *Concordia:* Prostrated by rains and high winds, and shedding fruit. *Jackson:* Picking going on briskly, but the yield not average; the crop will be at least 25 per cent. below that of last year.

TEXAS.—*San Jacinto:* Late, but prospect of a full crop. *Washington:* Cut short some by drought, but quality superior. *Dallas:* The range of yield from 250 to 500 pounds of lint per acre. *Upshur:* Somewhat damaged by drought, yet promises the heaviest crop ever raised, if not damaged by wet. *Palo Pinto:* Promises better than for years.

Milam: Cut short three-fourths by the nine weeks' drought. *Bosque:* Bids fair to be a full average. *Nacogdoches:* In some localities too much rain; some rust. *Rusk:* Has shed the squares some and started a new luxuriant growth, which may mature. *Wood:* Greatly revived by recent rains. *Cooke:* Looks very fine. *Galveston:* Much benefited by recent rains. *Kaufman:* Good prospect for more than average crop. *Burnet:* The drought too severe to admit of expecting a larger crop than last year. *Harrison:* A failure, owing to dry weather. *Bexar:* Copious showers have caused the crop to grow finely. *Caldwell:* Good condition, but small yield. *Gillespie:* Splendid condition. *Grayson:* Promises a better yield by half than last year *Lampasas:* Late rains will increase the products. *Lavaca:* Looking splendid. *Marion:* Much better than was expected a month ago. *Medina:* Largely injured by drought. *Montgomery:* With good weather, heavy crop anticipated. *Somervell:* Present prospect of a yield of 300 per cent. over that of 1874. *Victoria:* The growth affected by drought, but freedom from insects makes the crop nearly an average. *Waller:* Stopped growing from the 26th of May to the 25th of August; the leaves and squares fell off. *Red River:* A heavy crop in prospect. *Smith:* Materially benefited by the August rains; the prospect better than indicated by 110. *Matagorda:* The best early crops much injured by drought, but the stiff lands doing better. *Tyler:* Beginning to take the rust from wet. *Bastrop:* Being gathered rapidly; quality superior. *Jasper:* Injured badly by drought in July, and made worse since by rust. *Hardin:* Injured by drought.

ARKANSAS.—*Garland:* Helped by recent rains. *Baxter:* Looking well. *Bradley:* Condition advanced in August by copious and timely showers. *Dorsey:* The unusual quantity of rain in August will cause cotton to rot. *Independence:* The dry weather for the last four weeks has been of great advantage to cotton. *Arkansas:* Promises a heavy crop all through the county. *Columbia:* Rust on nearly all the crop. *Drew:* Within a few days considerable complaint of rust. *Jefferson:* Better than for years. *Monroe:* Prospect for more than average of crop. *Ouachita:* The rust has attacked, and in some places ruined, the crop. *Yell:* Good. *Crawford:* Looks splendid, but is about two weeks late. *Saint Francis:* Promises to double last year's crop. *Montgomery:* Generally very fine; a little rust in spots. *Sevier:* Rust in some localities, mostly on bottoms. *Boone:* The yield will be above the figures 120 if the frost holds off. *Howard:* Rust has appeared, and threatens to be serious. *Newton:* The prospects flattering.

TENNESSEE.—*Bedford:* The season rather wet for cotton. *Gibson:* General complaint that it has run too much to weed, and bolls are scarce. *Fayette:* A drought of twenty days has injured the crop, causing it to shed blooms and squares. *Obion:* Good.

OATS.

The general condition of the oats crop, reported July 1, was one of unusual thrift, promising an extraordinary yield. In the northern and southern sections of the country that promise has been fulfilled. Especially in New England, the Northwest, and the region around the Gulf, crops superior in quantity and quality have been produced, and for the most part secured in good condition. The higher averages in these States are, Maine and Texas, 106; Vermont, 107; Michigan, 103; Wisconsin, 105; Mississippi, 108; Arkansas, 114. In the Middle and Northwestern States the quality was somewhat damaged, but not seriously, by wet weather; in Vermont and in some localities in the South, it was slightly affected by rust. But in the section between the thirty-fourth and forty-first parallels, and the Atlantic and the Rocky Mountains, vast quantities of a magnificent crop were absolutely lost, and the remainder greatly damaged, by continuous wet weather, with repeated flooding rains, during the period of ripening and securing. The destruction and damage were greatest between the Alleghanies and the western limits of Missouri. Between the 1st of July and the 1st of September, the averages of condition were reduced, in Kentucky, from 105 to 67; Ohio, 103 to 68; Indiana, 110 to 52; Illinois, 103 to 70; Iowa, 105 to 99; Missouri, 112 to 92. Reports from all parts of this section abound in such statements as, "Impossible to harvest oats, owing to storms; hundreds of acres fed to the hogs;" "The storms in harvest destroyed at least one-half of a magnificent crop;" "Rotted on the ground;" "But few cut, and they so badly damaged as to have no substance;" "Not one acre in ten harvested;" "The larger portion of a

very fine crop a total loss, owing to wet weather in harvest;" "All not swept away destroyed in the shock," &c. The army-worm, or a worm so designated, conspired with the wet weather in injuring the crop to some extent in the Ohio Valley, as well as in Virginia and Michigan; but its ravages were quite limited, except in Ohio, where they were severe. In Logan they "severed the oat from the stem, till in some places the ground was almost covered with oats. Fields that promised an abundant crop will not be harvested;" in Hancock, they destroyed fully 60 per cent. of the crop.

The figures for condition in the Middle States and on the Atlantic coast, farther south, were: New York, 98; New Jersey, 84; Pennsylvania, 94; Maryland, 88; Virginia, 79; North Carolina and Georgia, 92. Kansas averages 76, and Nebraska 91; California 94, and Oregon 95. The average condition for the country is 87.

MAINE.—*Oxford:* Good. *Waldo:* Never better.

VERMONT.—*Orleans:* A heavy crop, badly lodged. *Franklin:* Extra crop; a little rusted. *Rutland:* Yield less than expected. *Caledonia:* Rusty.

NEW YORK.—*Tioga:* Damaged by a wet August. *Queens:* Very much injured by rains since they were cut. *Genesee:* Mostly secured in good condition. *Richmond:* Much damaged in harvest by wet. *Erie:* Heavy; much lodged. *Orange:* Much damaged in harvesting by rains. *Sullivan:* Good in quantity and quality.

NEW JERSEY.—*Mercer:* A good crop, damaged by heavy rains in harvest. *Sussex:* Poor crop; harvested in poor condition. *Warren:* Rather light, and badly gathered, owing to wet.

PENNSYLVANIA.—*Bradford:* A first-rate crop; injured 10 per cent. by the wet weather. *Armstrong:* Got up in good condition. *Bedford:* Very good crop secured. *York:* Plenty, but of poor quality. *Beaver:* Badly lodged; many fields will not pay the expenses of cutting. *Fayette:* Very much damaged by storms and wet. *Sullivan:* A large growth of straw, but yield below expectations. *Washington:* Much bleached before gathered, and shelled badly in hauling. *Erie:* A great crop.

MARYLAND.—*Howard:* A poor crop. *Cecil:* Injured by wet weather.

VIRGINIA.—*Powhatan:* Winter, yielded largely; spring, cut short by dry weather. *Middlesex:* Winter, good; spring, almost worthless. *Chesterfield:* Good when harvested, but badly cured, owing to wet. *Floyd:* Damaged by continued rains. *Madison:* Badly damaged, many farmers losing their entire crop. *Pulaski:* Badly damaged by incessant rains. *Bedford:* Badly injured by wet. *Craig:* Damaged by army-worm. *Orange:* Seriously damaged in quantity and quality by the long rains. *Essex:* Cut short by drought, and a large portion of what was harvested spoiled by rains. *Highland:* Good. *Montgomery:* Destroyed by the army-worm. *Richmond:* Much injured by wet. *Culpeper:* Badly damaged in the shock. *Buchanan:* Seriously injured in the shock. *Page:* Almost a failure.

NORTH CAROLINA.—*Person:* Seriously hurt by rains. *Caswell:* Damaged after harvest by wet. *Cumberland:* Greatly injured by rust. *Anson:* Good. *Caldwell:* Short and some sprouted.

GEORGIA.—*Dooly:* A fine crop.

ALABAMA.—*Greene:* The finest crop for a number of years. *Randolph:* Cut off by drought. *Bullock:* Excellent.

MISSISSIPPI.—*Smith:* Never better. *Lee:* The crop almost incredible.

TEXAS.—*Williamson:* Average 45 bushels per acre, and weigh 28 pounds. *Upshur:* Better than for many years. *Red River:* Never better. *Jasper:* Good yield; rust-proof the only kind we can rely on here.

ARKANSAS.—*Garland:* Have done well. *Independence:* Many crops yield 50 bushels or more per acre. *Woodruff:* A grand crop. *Newton:* Good. *Fulton:* Splendid crop; German millet is superseding oats; the yield, compared with oats, is enormous.

TENNESSEE.—*Anderson:* Two-thirds damaged by rains. *Sevier:* What were saved are in a miserably poor condition, owing to wet. *Giles:* Most of the oats damaged after being harvested. *Blount:* One-third of a crop; one-half damaged by wet. *Carter:* Two-thirds badly damaged by rains. *Hancock:* Damaged 25 per cent. by wet weather. *Morgan:* Lost in the field. *Greene:* Badly beat down and rotted. *Wilson:* Damaged. *Marion:* The crop quite ruined by wet after being harvested.

WEST VIRGINIA.—*Tucker:* Very good, but several large crops destroyed by the army-worm. *Raleigh:* Better than average. *Pleasants:* Materially injured by rains. *Grant:* Harvested in bad condition. *Jackson:* The floods swept off at least 15 per cent. *Braxton:* More than an average crop, but nearly one-half lost by continual rains. *Boone:* Almost ruined by the rains. *Randolph:* The army-worm very destructive

Wetzel: Damaged in the shock. *Barbour:* Nearly destroyed by the wet weather. *Cabell:* The wet weather destroyed all. *Summers:* Seriously injured. *Harrison:* Badly damaged. *Tyler:* Floated off in shocks by the floods. *Wayne:* Greatly injured by the rains.

KENTUCKY.—*Fleming:* Damaged at least 50 per cent. by wet. *Clarke:* Greatly injured by wet weather; very few saved. *Kenton:* Badly sprouted. *Owsley:* Poorer than ever before known. *Daviess:* Hardly any saved in good condition. *Edmonson:* Good when harvested, but 25 per cent. or more lost by rains. *Shelby:* Was above an average, but reduced to 50 by losses from wet weather, and the portion saved in a damaged condition. *Marion:* Crop heavy, but all fell down, and was not harvested. *Laurel:* Was average, but could not be harvested. *Clinton:* Injured in the shock. *Scott:* Badly damaged by the rains. *Carroll:* Ruined by the rains in many cases. *Graves:* Wet weather destroyed 25 per cent. *Bracken:* But little of a good crop harvested, owing to the wet. *Breckinridge:* Damaged in the shock. *Owen:* Injured by the rains. *Hardin:* Damaged 60 per cent. *Russell:* The part saved very fine, but three-fourths an entire loss.

OHIO.—*Trumbull:* Much destroyed by the rains. *Logan:* An enormous crop. Much of it leveled to the ground by rains. The farmers could not cut them, for it rained morning, noon, and night. Now came the army-worms, (previously unknown here,) and countless millions of these little volunteers cut them in their peculiar way, just severing the oat from the stem, till in some places the ground was almost covered with oats. Fields that promised an abundant crop will not be harvested. *Henry:* Heavy growth; down early, and did not fill well; also, badly injured in places by the army-worm. *Montgomery:* Damaged. *Coshocton:* Almost impossible to harvest them, owing to rains; hundreds of acres fed to the hogs. *Delaware:* The storms in harvest destroyed at least one-half of a magnificent crop. *Hancock:* Full 60 per cent. destroyed by the army-worm. *Holmes:* Badly damaged. *Medina:* Suffered a great deal from the army-worm, yet fields largely injured by them yield 25 bushels per acre. *Van Wert:* Worms and the wet destroyed a large portion and damaged the remainder. *Williams:* Promised splendidly, but the wet weather and the army-worm destroyed a large portion. *Washington:* Not more than half were saved in good condition. *Pike:* Damaged by rains, after harvesting, 50 per cent. *Athens:* But little of a good crop cut; destroyed by wet.

MICHIGAN.—*Iosco:* Promises unusually well. *Lapeer:* Very heavy; some fields yield 80 to 85 bushels per acre. *Manistee:* A magnificent crop. *Wayne:* Crop harvested, and was never better. *Washtenaw:* Heavy; much damaged by rain in harvest. *Branch:* Very fine, but many late oats destroyed by the army-worm. *Delta:* Short straw, but generally well filled.

INDIANA.—*Elkhart:* A good crop has been housed. *Franklin:* Almost a total loss. *De Kalb:* Injured by wet weather and the army-worm. *Floyd:* Blown and washed down; nine-tenths cut with the scythe and stacked like hay. *Dearborn:* Promised well, but was ruined by the floods. *Howard:* Almost a total loss. *Ripley:* What we saved are worthless. *Hendricks:* Nearly all lost by wet weather. *Grant:* Were splendid till the rains, but not one acre out of fifty saved. *Clark:* Badly damaged by the rains. *Union:* Destroyed by rains and storms. *Warren:* Harvested in bad condition. *Washington:* Not more than one-third of a crop saved, and that in bad condition. *Brown:* Damaged in the shock. *Clay:* Much of the crop turned over to the hogs, and that harvested badly damaged. *Dubois:* About half saved and much injured. *Hamilton:* Very little of the crop saved. *Knox:* Large amount destroyed by the floods and the remainder greatly damaged.

ILLINOIS.—*Morgan:* Used up by the storms. *Schuyler:* Damaged by rains; much of the crop pastured with hogs. *Madison:* Half ruined by heavy rains. *Johnson:* Injured by wet weather. *Henry:* Secured without material injury. *Clinton:* Not one-third cut, and that badly damaged in the shock. *Ford:* Turning out well in thrashing. *Jasper:* Damaged, and many not saved at all. *Marion:* Rotted on the ground. *Pope:* Damaged in the shock. *Clark:* Nearly ruined by the rains. *Carroll:* Average about 45 bushels per acre. *Mason:* Badly bleached and sprouted. *Menard:* Damaged by the rains. *Moultrie:* But few saved, owing to wet and winds. *Perry:* Reduced in quantity and quality by rains 50 per cent. *Vermillion:* A heavy crop; perhaps half saved. *Edwards:* Crop was splendid, but fully one-half could not be harvested. *Effingham:* But few cut, and they so badly damaged as to have no substance. *Fayette:* Not one acre in ten harvested. *Iroquois:* A large crop harvested in bad condition. *Macon:* About one-half the crop cut. *Massac:* Injured in the shock 25 per cent. *Ogle:* Injured by army-worms. *Richland:* Not more than 50 per cent. were harvested, owing to wet. *Sangamon:* Badly injured by wet. *White:* Were above an average, but could not be saved.

WISCONSIN.—*Washington:* Yield 50 to 60 bushels per acre. *Ozaukee:* Never a greater yield per acre. *Columbia:* Good. *Walworth:* First-rate. *Calumet:* Average 70 bushels per acre. *Crawford:* Over a full crop 10 per cent.

MINNESOTA.—*Renville:* Much better than for two years. *Steele:* Best crop in yield

and quality since 1860, but injured by rains. *Waseca:* Never so heavy before. *Pope:* High winds and recent rains will seriously affect the yield. *Redwood:* More damaged by grasshoppers than other crops. *Douglas:* The best crop ever raised, when cut, but 75 per cent. standing in the shock and threatened with ruin by the continued rains. *Martin:* Average yield about 60 bushels per acre. *Scott:* A loss of at least 33 per cent. in shock and stack. *Watonwan:* The little that the grasshoppers left nearly destroyed by rains. *Winona:* Badly destroyed in the shock by rains.

IOWA.—*Johnson:* Got up in good order, and yielding 40 to 50 bushels per acre. *Appanoose:* Good. *Franklin:* Well filled, but badly lodged. *Hardin:* Good; some pieces yield over 60 bushels to the acre. *Harrison:* Much injured by rains. *Scott:* Yield good, but condition bad. *Sioux:* Crop never better, but a great portion destroyed by the rains of the last twelve days. *Cerro Gordo:* The straw so heavy, that three-fourths were prostrated before ripe, and now being seriously injured by rains.

MISSOURI.—*Macon:* Good, but injured by the weather. *Gasconade:* One third lost after they were cut, by wet weather. *Camden:* All not swept away, damaged in the shock. *Nodaway:* Injured by grasshoppers. *Caldwell:* A very heavy crop, but bleached and weedy. *Moniteau:* The larger portion of a very fine crop a total loss, owing to wet weather in harvest. *Franklin:* Damaged by rains more than any other crop. *Harrison:* Fine. *Phelps:* Have improved since the last report. *Wayne:* Ruined by the wet weather. *Lincoln:* Damaged by rains. *Adair:* Poorer than last year by 20 per cent. *Dallas:* Damaged by wet in harvest. *Laclede:* Had a good crop, but almost wholly destroyed by the rains. *Maries:* Were never better, but a large per cent. lost in harvesting. *Montgomery:* Badly damaged by rains. *Perry:* Badly injured by rains. *St. Francis:* Damaged 15 per cent. in the shock. *Stoddard:* Excellent crop, mostly ruined by rains. *Daviess:* Greatly damaged in the shock. *Ralls:* Great losses from rains in harvest. *Pettis:* Considerably damaged by wet. *Newton:* A heavy crop, but injured by rain. *Clay:* Utterly destroyed by grasshoppers. *De Kalb:* Drowned out by rains in harvest.

KANSAS.—*Republic:* Considerably injured by rain before stacking. *Saline:* All crops promising except oats. *Neosho:* A great many spoiled in the shock by wet weather. *Dickinson:* Have suffered much from rust; average but 10 bushels per acre. *Jackson:* Yield reduced by the grasshopper. *Ellis:* Early oats short from drought. *Anderson:* Much damaged by wet weather. *Cowley:* Never better. *Woodson:* When harvested, 105; but since badly damaged by wet weather.

NEBRASKA.—*Pawnee:* Cut short by grasshoppers. *Webster:* Splendid. *Clay:* Light and chaffy. *Madison:* Good crop.

CALIFORNIA.—*Placer:* Damaged by frost in April.

OREGON.—*Grant:* Never so uniformly good before. *Clackamas:* Good throughout. *Douglas:* Reduced by extreme heat and drought.

RYE.

In the northern and southern sections of the country, the rye-crop, when harvested, was nearly if not quite average in quantity, and of fair quality. But in the middle belt, like the other cereals, it was much reduced in quality and somewhat in quantity by the excessive rains. West of the Mississippi, the grasshoppers appear to have had a special relish for this crop. The average condition for the whole country is 91. The range of State averages, in all the States on the northern border and on the coast, except Louisiana, 87, (which produces very little rye,) is above that figure. Those above average are: Arkansas, 112; Texas, 109; New Hampshire and Wisconsin, 102; Connecticut and Alabama, 101; Maine, Delaware, and Mississippi are average. Among the lowest are: Indiana, 78; Ohio, 81; West Virginia and Kentucky, 85; Missouri and California, 86.

MAINE.—*Oxford:* Good.

NEW YORK.—*Queens:* Well filled. *Steuben:* Reduced by drought. *Sullivan:* Much injured in the shock by heavy rains.

NEW JERSEY.—*Sussex:* Not half a crop.

PENNSYLVANIA.—*Indiana:* Housed in a wet condition and badly spoiled.

MARYLAND.—*Howard:* Inferior yield. *Caroline:* Good.

VIRGINIA.—*Pulaski:* Badly damaged by incessant rains. *Buchanan:* Seriously injured in the shock.

NORTH CAROLINA.—*Surry:* Above average in yield and condition.

GEORGIA.—*Rabun:* Harvested and good.

TEXAS.—*Upshur:* Better than for many years.

ARKANSAS.—*Stone:* Better than for many years.
TENNESSEE.—*Wilson:* Damaged by excessive rains.
WEST VIRGINIA.—*Braxton:* Tolerably good. *Randolph:* Nearly ruined by the wet.
KENTUCKY.—*Clarke:* Greatly injured in shock by wet weather. *Daviess:* Badly damaged. *Scott:* Badly damaged by the rains. *Spencer:* Rains destroyed 25 per cent. *Breckinridge:* Damaged in the shock. *Owen:* Injured by the rains.
INDIANA.—*Floyd:* A good crop, harvested before the heavy rains.
ILLINOIS.—*Sangamon:* Badly injured by the wet weather.
MISSOURI.—*Nodaway:* One-fourth destroyed by grasshoppers. *Harrison:* Injured some by the wet weather. *Adair:* Not so good as last year by 30 per cent. *Daviess:* Greatly damaged in the shock and stack.—*Clay:* Utterly destroyed by grasshoppers.
KANSAS.—*Dickinson:* Good, and being largely grown for feed. *Jackson:* Yield reduced by the grasshopper. *Leavenworth:* Cut short by grasshoppers. *Woodson:* The condition when harvested, 100, but since badly damaged by wet weather.
NEBRASKA.—*Pawnee:* Cut short by grasshoppers. *Webster:* Good. *Clay:* Injured by drought. *Madison:* Injured by grasshoppers, but harvested in good condition.

BARLEY.

This crop did well in the Northern States. The range of condition when harvested was, in New England, from 100 to 104; New York, 98; Pennsylvania, 92; Michigan, 103; Wisconsin, 102; Minnesota, 99. It was 80 in California, and 96 in Oregon. The production of barley in the Southern States is too limited to be worthy of mention, except in Texas, where the condition was 108. In the rainy belt the crop was much damaged, though less than wheat and oats. The condition was reduced to 71 in Ohio; 64 in Indiana; 78 in Illinois; 81 in Iowa; 85 in Missouri; 74 in Kansas; 79 in Nebraska. The reduction in the three last-named States is to be partly credited to the grasshoppers.

The average for the country is 85.

NEW YORK.—*Steuben:* Filled well. *Greene:* Mostly secured in good condition.
PENNSYLVANIA.—*Bedford:* Suffered from rain.
TEXAS.—*Red River:* Very good.
TENNESSEE.—*Wilson:* Damaged by excessive rains.
MICHIGAN.—*Lapeer:* Never better.
WISCONSIN.—*Washington:* Yields 40 to 50 bushels per acre. *Ozaukee:* Never a greater yield per acre. *Columbia:* Good. *Calumet:* Averages 60 bushels per acre.
IOWA.—*Scott:* Yield good, but condition bad. *Benton:* Of very poor quality. *Tremont:* Greatly damaged by grasshoppers, hail and wind. *Sioux:* A great portion destroyed by the rains.
MISSOURI.—*Nodaway:* Almost ruined by grasshoppers.
KANSAS.—*Republic:* Considerably injured by rains before stacking. *Ellis:* Thin on the ground, but good berry. *Leavenworth:* Cut short by grasshoppers.
NEBRASKA.—*Pawnee:* Cut short by grasshoppers. *Clay:* Injured by drought.
CALIFORNIA.—*Placer:* Damaged by frost in April.
OREGON.—*Clackamas:* Did well.

BUCKWHEAT.

The only States reporting any decrease in the acreage of buckwheat are Maine and Illinois, 4 per cent.; Maryland, 5; Virginia, 3; West Virginia, 1; and Iowa, 2. Those reporting an increase are Massachusetts, 25 per cent.; New York and North Carolina, 1; New Jersey and Minnesota, 7; Kentucky and Oregon, 5; Ohio, 4; Michigan, 10; Indiana, 6; Wisconsin, 3; Missouri, 20; Kansas, 23; and Nebraska, 28.

In the Northwestern States, the previously thriving condition was extensively and seriously injured by frosts on the nights of August 21 and 22, and again, in a more limited extent and degree, on the 28th and 29th. With this exception the reports of condition are almost universally favorable. In New England, (except Maine, 95,) the Middle States and Virginia the average condition ranges from 100 up to 110, Massachusetts, New Jersey, and Virginia being at the latter figure. Returns

from Arkansas and Kansas average 111; from Missouri, 109; from Nebraska and Indiana, 102. In the Northwest, frost reduced the condition on the first of August; in Wisconsin, from 96 to 43; in Minnesota, from 91 to 83; and in Iowa, from 98 to 93. The condition in Ohio averages 100; in Illinois, 97. The average for all the States producing buckwheat is 98.

NEW YORK.—*Queens:* Promises a good crop. *Steuben:* Has filled well.
NEW JERSEY.—*Sussex:* Promises an extraordinary yield. *Warren:* Looks fine.
PENNSYLVANIA.—*Armstrong:* Abundant and thrifty. *Clearfield:* Prospect of a fine crop. *Bucks:* More than usual sown and very promising. *Indiana:* Very promising.
MARYLAND.—*Caroline:* Looks fine. *Howard:* Wet weather has made it thrifty.
VIRGINIA.—*Clearfield:* Good; much sown. *Highland:* Never better.
WEST VIRGINIA.—*Grant:* Prospect very fair. *Mercer:* Promising. *Hancock:* Prospect of the largest yield for many years.
MICHIGAN.—*Allegan:* Late, but looks first-rate. *Jackson:* The weather for buckwheat all that could be desired; a large growth. *Manistee:* Damaged by frost August 21 and 22 in low places. *Shiawassee:* Slightly injured by frost. *Mason:* Badly injured by frost; will not be half a crop. *Barry:* Slightly hurt in some places by frost. *Ottawa:* One-fourth lost by frost.
ILLINOIS.—*Winnebago:* Killed by frosts in all the valleys on the 28th and 29th. *Moultrie:* More sown than for years. *Effingham:* Mostly ruined. *Ogle:* Injured on low ground by frost.
WISCONSIN.—*Washington:* Ruined by frost August 21 and 23. *Juneau:* Immensely damaged by frost August 28; three-quarters destroyed. *Eau Claire:* Greatly damaged by frost August 22. *Fond du Lac:* Badly damaged by frost. *Sauk:* Badly damaged by frost in many places. *Waukesha:* Damaged by frost. *Browne:* Damaged in many places by frost. *Dodge:* Will not return the seed, owing to frost. *Milwaukee:* On low ground severely injured by frost. *Waupaca:* Destroyed on low grounds by frost. *Adams:* Badly injured by frost; not over one-fifth of a crop left.
MINNESOTA.—*Olmsted:* Badly damaged by frost August 21 and 22. *Pope:* Promises a fair yield.
IOWA.—*Jackson:* Slightly damaged. *Hardin:* A heavy crop sown and looks well. *Howard:* Killed on bottoms by frost August 21 and 22.
MISSOURI.—*Harrison:* Never better. *Maries:* Prospect good. *De Kalb:* Blasted 25 per cent.
KANSAS.—*Dauphin:* A large area and above average. *Douglas:* Looks finely. *Jefferson:* The weather favorable. *Osage:* The best for nine years.
OREGON.—*Clackamas:* A full average.

POTATOES.

The condition of the potato-crop, as a whole, is about 10 per cent. above average; all the large potato-growing States reporting a very favorable prospect. The New England States are all below average, except Massachusetts, 101. The condition of the crop in this section has not materially changed since July, the improvement in some counties being balanced by the decline in others. Maine and Vermont report injuries from rust and rot in some localities. New Hampshire and Connecticut are nearly average, and both show considerable improvement.

The Middle States all show improvement, except New Jersey, 93, which about maintains her July condition, notwithstanding severe injuries from Colorado beetles in several counties. New York and Pennsylvania are above average. Delaware raised her average to 75, having found partial compensation in late rains for the drought of early summer. The white grub in some parts of this section was quite destructive.

On the South Atlantic coast the Colorado beetle was very injurious in parts of Maryland and Virginia. The latter shows improvement, as also does South Carolina. The former shows a decline, as also do North Carolina and Georgia. The condition of this section is considerably below average.

The Gulf States are all below average, except Mississippi, 101, and

all show a decline from the condition reported in July. The decline is greatest in Louisiana, 90, and Texas, 91, where local droughts were injurious to the crop.

The Inland Southern States have not maintained the high condition reported in July, all having declined except West Virginia, which shows a slight improvement. Yet the condition of all these States is full average or above. The dry-rot is noted in some parts of Arkansas and Kentucky. Tennessee shows a small decline from her high condition in July.

The States north of the Ohio River are all above average, and all show improvement, except Wisconsin, 101, and Indiana, 109, which barely hold their own. In Ohio, 112, and Illinois, 125, notwithstanding the injuries from flood and rot in many bottom crops, the increased yield of the uplands has greatly enlarged the crops. Michigan, 118, in spite of early frosts in some localities, reports a very fine crop, in some counties the best ever raised. Frost is also reported as injurious in some counties of Wisconsin. The Colorado beetle is noted in a few places, but the damage is not at all extensive.

West of the Mississippi River there is a marked improvement in all the States, except Minnesota, 97, which has declined 10 per cent. since July, and is the only State in this section below average. Iowa, 120, and Missouri, 112, notwithstanding early frosts in some quarters and excessive rain causing rot in others, promise remarkably fine crops. The departure of the grasshoppers gave the late plantings of Kansas and Nebraska an opportunity to mature under very favorable conditions and to secure a very large amount of food-material very acceptable after the disasters of late years.

On the Pacific coast California, 94, shows considerable improvement, while Oregon, 95, was slightly reduced; unusual heat and drought are reported in some localities.

SWEET-POTATOES.

The States reporting a condition full average or above are New Jersey, 102, Delaware, 100, North Carolina, 100, Mississippi, 114, Arkansas, 109, Tennessee, 100, Illinois, 100, Missouri, 102, and Kansas, 100. The States east of the Alleghany Mountains generally indicate an improvement since July. The South Atlantic and Gulf States, from South Carolina to Texas, show a decline of condition, except Mississippi. Of the Southern Inland States Kentucky alone shows a marked decline—10 per cent. The States north of the Ohio River all indicate a loss, except Illinois, which slightly improved since July. West of the Mississippi River Iowa somewhat declined, but the other States very considerably improved. On the Pacific coast, California averages 94, a gain of 10 per cent. since last report.

MAINE.—*Piscataquis:* Wet and foggy weather in August caused potatoes to rust badly. *Aroostook:* Have rusted badly, and the crop will be light. *Lincoln:* Some complaint of rotting. *Oxford:* Good growth, but showing signs of rot. *Waldo:* Rusting badly. *York:* Affected by excessive wet on low grounds. *Androscoggin:* Early good; late planted killed by rust.

NEW HAMPSHIRE.—*Carroll:* Rusting in some places. *Hillsborough:* Complaint of rot. *Belknap:* Tending to rust in some places.

VERMONT.—*Orleans:* Rusting badly. *Caledonia:* Splendid; quality exellent. *Addison:* Injured with rust.

MASSACHUSETTS.—*Berkshire:* Look fine.

CONNECTICUT.—*New London:* Yielding well, but have commenced rotting. *Hartford:* Much injured by the drought. *Windham:* Show signs of rot.

NEW YORK.—*Tioga:* Look well. *Queens:* Early fair; late better. *Schoharie:* A very large crop. *Genesee:* Appearances of rot. *Richmond:* Considerably damaged by beetles,

and rotting badly in heavy soils. *Washington:* Large white grubs have destroyed whole fields; in some towns rust has checked the crop in midgrowth. *Rensselaer:* Better than for years. *Erie:* Large crop. *Orange:* Very promising. *Sullivan:* Extra good.

NEW JERSEY.—*Atlantic:* Beetle did immense damage. *Mercer:* A large crop notwithstanding the attacks of the beetle. *Sussex:* Very much injured by the beetle. *Burlington:* Early Rose very fine; later varieties injured more by the beetle. *Salem:* Early yielded very well; beetle very destructive on late. *Camden:* Late potatoes suffered very much from the beetle. *Warren:* Early Rose yields well; other varieties not so well.

PENNSYLVANIA.—*Northampton:* Eaten by the bugs; a poor yield feared. *Westmoreland:* Very fine notwithstanding the injury from the beetle. *Armstrong:* Continue to thrive and are abundant. *Cambria:* Remarkably fine, but threatened with rot. *Clearfield:* A very large acreage promising a heavy yield. *Beaver:* Rotting. *Indiana:* The largest crop for years and of good quality. *Sullivan:* Not a better prospect once in a decade. *Lycoming:* Fine and large yield. *Northumberland:* The crop unusually large and fine.

MARYLAND.—*Caroline:* Still troubled with the beetles. Sweet-potatoes will yield largely. *Prince George:* The beetles ruined many fields; those who saved their vines expect a fine crop. *Washington:* Crop will be large.

VIRGINIA.—*Chesterfield:* Irish, above average; sweet, too wet, but may rally. *Charlotte:* Early, splendid; not much attention paid to late kinds. *Northampton:* Sweet-potato crop injured by too frequent rains. *Princess Anne:* The largest crop of sweet-potatoes ever planted, but in bad condition, owing to the wet weather. *Highland:* A luxuriant growth. *King and Queen:* Look fine—both kinds. *Buchanan:* Excellent crop, notwithstanding the numerous beetles.

NORTH CAROLINA.—*Anson:* Both kinds fine in quantity and quality. *Haywood:* Season favorable. *Alamance:* Very fine. *Caldwell:* Irish injured by wet weather.

SOUTH CAROLINA.—*Georgetown:* The rain too late for potatoes; sweet-potatoes will be very short.

GEORGIA.—*Douglas:* Sweet, fine prospect. *Terrell:* Have been benefited by the rains. *Columbia:* Sweet, helped by recent rains. *Pierce:* Improved by recent rains. *Dooly:* Doing finely. *Liberty:* Promising. *Elbert:* Sweet, good. *Butts:* Sweet, affected with something like rust—new with us—which has been very destructive.

FLORIDA.—*Gadsden:* The August rains have brought up the crop of Irish potatoes to a full average.

ALABAMA.—*Lauderdale:* Sweet, fine. *Montgomery:* Sweet, have improved greatly since the rains. *Butler:* Sweet, very seriously injured by the summer drought. *Calhoun:* Early Irish, good; late, a failure, owing to drought, which affects sweet-potatoes. *Conecuh:* Prospect of more than an average crop.

MISSISSIPPI.—*Pike:* Sweet, very fine. *Smith:* Excellent. *Wayne:* The crop of sweet-potatoes will not be as large as last year, owing to drought. *Panola:* Sweet, promising well. *Jefferson:* Fine crop.

LOUISIANA.—*Franklin:* Frequent rains in August have materially advanced the condition of sweet-potatoes. *Madison:* Irish, all gathered; best crop for five years; sweet, very fine.

TEXAS.—*De Witt:* Sweet, badly set back by drought: *Washington:* Sweet, cut short by drought nearly one half. *Rusk:* Sweet, growing luxuriantly. *Wood:* Greatly revived by recent rains. *Angelina:* The first crop of Irish potatoes did well; the second crop just planted. *Burnet:* Sweet, suffering for rain. *Medina:* Injured by the drought. *Somervell:* Sweet, crop 200 per cent. over that of 1873 or 1874. *Red River:* Early Rose, very productive; sweet, good. *Jasper:* Too dry for potatoes, until recently; but two months yet to grow and mature in.

ARKANSAS.—*Garland:* Sweet, helped by recent rains; late Irish potatoes afflicted by dry-rot in the center. *Drew:* Sweet, never before so fine. *Crawford:* Benefited by the late rains almost beyond measure. *Howard:* Irish, rotted badly.

TENNESSEE.—*Grundy:* Promise of a good crop. *Greene:* Irish, excellent; sweet, promising. *Wilson:* Irish, splendid; sweet, fine, but needing rain.

WEST VIRGINIA.—Never better. *Braxton:* Both Irish and sweet promise to be very large, and a large yield. *Mason:* Promise of a large yield. *Cabell:* Early plantings good; late planted do not promise well. *Wayne:* Much injured on low land by high water, but the crop left is the largest ever grown.

KENTUCKY.—*Daviess:* Irish, rotted in the ground badly. *Clinton:* Fine. *Gallatin:* Irish, extraordinarily large and fine crop.

OHIO.—*Trumbull:* Unprecedented in quantity and quality, unless the continued rains cause them to rot in the ground. *Miami:* By far the largest crop ever grown in the county. *Adams:* Rotted a little in the wettest ground, but generally saved. *Monroe:* Will double the quantity of any crop for ten years. *Coshocton:* A full crop. *Delaware:* Increased acreage and an enormous yield. *Hancock:* Largest crop ever grown. *Van Wert:* Promised well, but the rot is destroying them largely. *Geauga:* The most prom-

ising crop ever known. *Gallia:* A few thousand acres destroyed by water on lowlands, but the crop is so extra on uplands as to maintain an average.

MICHIGAN.—*Iosco:* Large crop planted and doing well. *Jackson:* The weather all that could be desired for potatoes. *Manistee:* Beetles not doing much damage. *Mason:* Badly cut by frost August 21 and 22. *Wayne:* Never better. *Washtenaw:* Abundant and extra good. *Branch:* Abundant. *Delta.* Considerably damaged by frost on low ground, August 22. *Leelenaw:* The largest crop ever raised.

INDIANA.—*Elkhart:* Have done splendidly, but threatened with rot. *Franklin:* Rotted some in the wet weather, yet the finest crop for years. *Dearborn:* The estimate, 150, based on the early crops, the late being yet uncertain. *Ripley:* Splendid crop. *Perry:* Excessive rain prevented planting, so that there is but half a crop, and that in bad condition for want of cultivation. *Hendricks:* Late, suffering badly from dry weather. *Washington:* A good crop, but many rotting. *Clay:* Ruined on the overflowed lands, and nearly worthless on the flat uplands. *Dubois:* Fine.

ILLINOIS.—*Pike:* Irish and sweet will be a good crop. *Clinton:* Good, but rotted some. *Ford:* Thirty cents per bushel. *Winnebago:* Early, better than for many years; late, killed by frost in all the valleys. *Clark:* My own crop 100 per cent. above any for years. *Bureau:* A little rot. *Carroll:* Injured by frost in low lands. *Moultrie:* Best for years, but early sorts rotting some. *Peoria:* The largest crop ever known. *Putnam:* All that could be desired. *Effingham:* Early planted, good. *Macon:* Very good. *Massac:* Early, fine. *Shelby:* *All* on flat lands have rotted, yet there will be an immense crop. *McLean:* The yield of early, enormous.

WISCONSIN.—*Ozaukee:* Injured in some places by frost. *Sauk:* Badly damaged by frost in many places. *Walworth:* Better than for many years. *Chippewa:* Late; spoiled by frost, August 22. *Outagamie:* Late, injured on all low grounds by the heavy frost.

MINNESOTA.—*Steele:* The best crop and in the best condition for many years. *Wright:* Very light.

IOWA.—*Shelby:* Late; Peach-blows small, and few in the hill. *Woodbury:* Will be a large crop. *Benton:* Best prospect in ten years. *Howard:* On bottom-lands, killed by frosts, August 22 and 23. *Muscatine:* The prospect exceedingly good. *Harrison:* Fine, but being injured by wet. *Appanoose:* Very good.

MISSOURI.—*Macon:* Never better. *Camden:* Worth 15 cents per bushel. *Chariton:* Large yield. *Nodaway:* Never better. *Caldwell:* Looking remarkably well, and of fine quality. *Franklin:* Large and good in quality. *Harrison:* Both kinds never better. *Maries:* Rotted badly. *Pettis:* The crop much better than for several years. *Newton:* Both kinds good, but some rotting.

KANSAS.—*Doniphan:* All late. *Dickinson:* A heavy crop and large. *Douglas:* Irish, look well. *Sedgwick:* Abundant. *Jefferson:* Favorable weather for late potatoes. *Washington:* Large yield and excellent quality. *Woodson:* Early Rose rotting badly; late potatoes doing well.

NEBRASKA.—*Dixon:* Perhaps the crop will average, through the county, 500 bushels per acre. *Webster:* Very heavy crop. *Clay:* Never better. *Madison:* The best crop raised. *Merrick:* As good a crop as raised anywhere since the world began.

OREGON.—*Clackamas:* Rather light crop, but good size. *Douglas:* Injured by extreme heat and drought.

WOOL.

The wool-clip is of full average weight, or a little above, in nearly all the States. Those deficient are, Massachusetts, 4 per cent.; Georgia and Oregon, 3 per cent.; Illinois and California, 2 per cent.; Virginia, Texas, Arkansas, and Missouri, 1 per cent.; Wisconsin and Tennessee are 2 per cent. above average; New York, Alabama, Mississippi, West Virginia, Kentucky, Ohio, Indiana, Iowa, and Kansas are 1 per cent. above average; the remaining States are full average.

TOBACCO.

The tobacco-crop has greatly fallen off since the last report. From a condition 20 per cent. above average in July our September returns indicate a reduction to 10 per cent. below average. East of the Alleghany Mountains there has been, on the whole, an improvement. Massachusetts and Connecticut show a great advance upon the July condition and are 2 per cent. above average, but this is about counterbalanced by a decline to 2 per cent. below average in Maryland, produced

by the excessive rains of August. New York and Pennsylvania report some improvement, but are still below average. Virginia returns indicate a great improvement and a condition 12 per cent. above average. Further down the coast the continued rains have uniformly depressed the condition of the crop. Florida is full average. The Cuba tobacco of Gadsden County is superior to any crop since the war, both in quantity and quality. The small crops of the Gulf States and Arkansas show improvement, and, on the whole, a condition above average. The great tobacco-region between the Alleghany Mountains and the Mississippi, producing about two-thirds of the census-crop of 1869, shows a rapid decline since July, and a condition greatly below average. The flooding rains that visited this region have inflicted very serious damage upon tobacco as well as other crops. Tennessee has reduced her July average of 106 to 92; Kentucky has fallen from 134 to 86; Ohio, from 98 to 66; Indiana, from 102 to 81; Illinois, from 95 to 75; West Virginia, from 97 to 94; Wisconsin, from 90 to 60. West of the Mississippi River, Missouri, the only large tobacco-producing State, shows a condition 5 per cent. above average, a gain of three per cent. since July, notwithstanding some local injuries by storms. The other States of this section, yielding but small crops, show some improvement, but are below average. Insect-injuries are rarely mentioned in our reports of this crop.

MASSACHUSETTS.—*Hampden:* Now being harvested, and bids fair to prove a remarkably fine crop.

PENNSYLVANIA.—*York:* Benefited by the wet weather.

MARYLAND.—*Howard:* Good planting season and growing weather have favored the crop. *Prince George's:* The promise, August 1, of a full crop has been disappointed, owing to constant rains. *Charles:* The rainy season has seriously injured the prospect. *St. Mary's:* Greatly damaged by late heavy rains. *Calvert:* Continuous rains have stopped the growth, and drowned out a considerable area. *Montgomery:* Crop will be large if frost does not destroy it.

VIRGINIA.—*Powhatan:* Prospect of the largest crop ever grown from the amount planted. *Caroline:* Favorable weather will make the crop considerably over an average. *Pittsylvania:* Quality injured by continued wet. *Cumberland:* Very promising at present, but fears of "frenching" from excessive wet. *Spottsylvania:* Doing well. *Chesterfield:* Much planted, and generally of good growth and color. *Louisa:* Injured by rains, though looking unusually well. *Madison:* Very promising till recently, but injured by excessive rains. *Surry:* Promising. *Transylvania:* Looking very well. *Amelia:* Very fine. *Charlotte:* On well-manured lots heavy, and in a fair way to make a heavy yield. *Halifax:* Greatly damaged by floods, hail-storms, and shedding of bottom leaves. *Lunenburgh:* Very promising. *Craig:* Better than for several years. *Mecklenburgh:* Seriously affected by the long-continued rains. *Orange:* A continuance of the present fine weather will insure a large crop of superior quality. *Rockbridge:* Doing well, but needs sunshine. *Fluvanna:* Very large, and as yet no fire in it.

NORTH CAROLINA.—*Person:* Seriously hurt by long-continued rains. *Caswell:* Seriously damaged by continued wet. *Davie:* Injured in low lands by wet weather. *Stokes:* Has too much sap to make it strictly fine. *Alamance:* Except on wet ground, very fine.

FLORIDA.—*Gadsden:* The crop of Cuba tobacco is measurably housed, and is superior in quantity and quality to any since the war.

ALABAMA.—*Crenshaw:* Doing well.

ARKANSAS.—*Garland:* Helped by recent rains. *Washington:* Improved by the wet weather.

TENNESSEE.—*Robertson:* Has been damaged by rains, but the increased acreage will bring the product to nearly an average. *Trousdale:* Has been injured very much by wet weather, in frenching, and is late; but with favorable September will be 10 to 20 per cent. above 1873. *Obion:* Damaged by wet weather, yet pretty good. *Montgomery:* Cutting the early-planted. *Greene:* Uneven. *Dickson:* Large crop; not as heavy in leaf as usual; very forward, and now being cut. *Macon:* Needs rain. *Wilson:* Greatly benefited by the recent dry weather.

WEST VIRGINIA.—*Mercer:* Too much rain.

KENTUCKY.—*Adair:* A great deal of the crop destroyed by rains. *Cumberland:* Will yield but a poor crop of inferior quality. *Warren:* The season fine and the crop much improved thereby. *Callaway:* Will be light in weight; small on all bottom-lands and a good deal frenched. *Grayson:* Was seriously damaged by the wet weather, but

owing to increased area will yield a full average in pounds, but not in quality. *Logan:* Injured 20 to 25 per cent. by the wet weather, causing it to drown out on bottom and french on uplands. *Taylor:* Badly damaged by rain in July and first part of August; now suffering from drought. *Clinton:* Materially injured by the rains; some crops lost altogether. *Carroll:* Much shortened by drought since the 15th of August. *Graves:* Seriously damaged by wet weather. *Simpson:* The yield per acre will not be more than half an average. *Gallatin:* Now being prematurely cut to save the crop from firing and becoming a total loss. *Owen:* Injured by the rains. *Hardin:* Promised yield of 60 per cent. *Metcalf:* Not more than half a crop. *Monroe:* Greatly damaged by frenching, being lost in the weeds, and on the streams washed off or overflowed. *Russell:* Do not think one plant in ten will make good tobacco.

OHIO.—*Miami:* By far the largest crop ever grown. *Monroe:* The crop will be about half that of 1873.

INDIANA.—*Dubois:* Cutting going on, and the crop curing well.

ILLINOIS.—*Johnson:* Will be better than anticipated a month ago. *Pope:* Looks well, but is late, and consequently will be light. *Effingham:* Injured by water. *Massac:* Badly injured by rains; one-fourth frenched.

MISSOURI.—*Macon:* Good. *Chariton:* Fine on dry lands. *Boone:* Badly frenched; that not so affected is good. *Harrison:* Very fine; a large yield. *Lincoln:* Doing finely since it ceased raining; flattering prospect for a crop good in quantity and quality. *Maries:* Extra fine, but a hail-storm has swept over a part of the county and nearly ruined the crop. *Ralls:* Fully up to an average crop.

OREGON.—*Clackamas:* A good crop.

SUGAR-CANE.

Thirty-six counties in Georgia report an average of 80; the crop was here considerably affected by drought in some counties. Fourteen counties in Florida average 79, with considerable injury from drought. Seventeen counties in Alabama reach 88, the earlier drought being partly recompensed by later rains. Thirteen counties in Mississippi stand 9 per cent. above average, with an increasing area. Pine-lands well fertilized and cultivated produce excellent and remunerative crops in some counties. Nine parishes in Louisiana return an average of 88; and 19 in Texas average 80. The difficulty in both these States was lack of rain, especially in the earlier part of the season.

GEORGIA.—*Dooly:* A fine crop anticipated. *Liberty:* Suffered to some extent from drought. *Jefferson:* The rains were in time to benefit the cane. *Terrell:* Benefited by the rains.

FLORIDA.—*La Fayette:* Badly injured by drought. *Columbia:* Much injured by drought, but will improve with favorable weather.

ALABAMA.—*Crenshaw:* Improving since the rains. *Covington:* Recent rains are bringing out the crop fast, and the promise is fine. *Butler:* Considerably injured by the drought.

MISSISSIPPI.—*Wayne:* Acreage increases every year. Our poor pine-lands, well fertilized and cultivated, produce excellent and remunerative crops.

LOUISIANA.—*Rapides:* Improving every day. *Saint Mary's:* A show for three-fourths of a crop.

TEXAS.—*Upshur:* Doing well. *Wood:* Greatly revived by recent rains. *Jasper:* Has been too dry for sugar-cane.

SORGHUM.

In the valleys of the Missouri and the Mississippi Rivers the promise of sorghum is considerably above average. The highest figures for condition are, in Arkansas and Mississippi, 114; Kansas and Nebraska, 110; Tennessee, 105. These figures show a decided advance. In August, Missouri fell from 106 to 103. Texas rose from 82 to 97; Alabama, from 94 to 99; Iowa, from 84 to 95. There was a similar improvement in the Ohio Valley. In Kentucky, from 91 to 95; Ohio, 94 to 101; Indiana, 89 to 93. Owing to frosts, Illinois fell from 99 to 95; Wisconsin, 102 to 43; Minnesota, 89 to 79. On the Atlantic coast, Delaware and Georgia return 100; Maryland, 104; Virginia, 91; North Carolina, 98; South Carolina, 105.

FRUIT.

The season was disastrous to most of the fruits. Insect-injuries were small in extent, though a considerable variety of these pests is reported in different parts of the country. The meteorological conditions, however, were very unfavorable in many States. The recurrence of severe winter temperature, after the late opening of spring, with subsequent heavy frosts, caught the fruit-buds in a critical condition and wrought great destruction. The severe winter had previously killed a great number of trees, and thus, from a series of unfortunate circumstances, the fruit-yield was greatly curtailed, while those localities which measurably escaped often found the high prices of transportation a serious hinderance to the disposal of their crops in the destitute portions of the country.

APPLES.—Only one State, Texas, 102, reports a full average crop of apples. Arkansas, 99, nearly approximates an average, but all the other States fall below—no report being received from Rhode Island; Maine, 48, reports injuries from tent-caterpillars in a few counties, and a considerable decline from even the low figure of July; Connecticut, 54, has not done much better. In some parts of Vermont apples have dropped considerably from the trees, greatly reducing the high average previously reported to 65; New Hampshire, 74, has also declined, while Massachusetts, 90, reports improvement; New York, New Jersey, and Delaware promise about two-thirds of a crop, while Pennsylvania will discount half of hers. The marked failure is with the early fruit in some counties, while in others fall-apples are equally scarce. Some counties of Maryland had an abundance of apples for home-consumption. The yield ran low in Virginia, 58; North Carolina, 47; and South Carolina, 33; Georgia promises about three-fourths of a crop. In many isolated localities there will be an ample local supply, with limited facilities for marketing. The April freeze was felt as far South as Central Georgia. The Gulf States range from three-quarters average to over average in Texas. Several localities in this region, well situated for market, have secured profitable crops. In the Southern inland States, except Arkansas, nearly average, the condition is about half average. In several counties the fruit rotted on the trees to a considerable extent. North of the Ohio River the condition ranges from 32 in Indiana to 66 in Michigan. The adverse meteorological conditions appear to have been especially severe in this region. West of the Mississippi the condition is generally better, except in Kansas, where grasshoppers injured the trees as well as destroyed the fruit. The condition ranges from 30 in Kansas to 83 in Minnesota and Nebraska, where the fruit, not being so far advanced as in more southern regions, escaped the reaction of winter temperature in April.

PEACHES.—The crop of peaches in New England is considerably above average in those limited areas where it is grown; New Hampshire, Massachusetts, and Connecticut average 105. No reports from the other States of this section have been received. In the peach-growing region of the Middle States the crops have been large, especially in New Jersey, 97, and Delaware, 112, and Maryland, 102; but New York, 88, and Pennsylvania, 41, embrace large areas not favored by such good conditions, and consequently report very low averages. It is noticeable, however, that the counties in New York reporting average crops are mostly in the central portion of the State, and not geographically connected with the peach region of New Jersey. The Atlantic coast reports low averages—Virginia, 30; North Carolina, 16; South Carolina,

18; Georgia, 85. In Walton County, Georgia, it is stated that crops near the water are failures. The Gulf States show a better condition—Mississippi, 108; Louisiana, 98, and Alabama, 87, taken together, will not fall greatly below average; but Florida, 59, and Texas, 43, promise only half crops. Of the Southern inland States, Arkansas, 106, sharply contrasts with Tennessee, 25; West Virginia, 32, and Kentucky, 22. The case is still worse north of the Ohio River—Ohio, 8; Michigan, 18; Indiana, 24; Illinois, 14. The crops of Mississippi Valley, it will be seen, have generally suffered most from unfavorable weather. Missouri and Kansas promise about half crops. The Pacific coast has fared but little better—California averaging 26 and Oregon 72.

GRAPES.—The grape has attained higher condition than either apples or peaches. In New England the crop was late, but in many places it did well. The State averages range from 82 in Vermont to 106 in Connecticut. Delaware is full average, but the other Middle States range somewhat lower. The wet weather of the latter part of summer produced rot and mildew in many counties. The South Atlantic coast ranges from 98 in Maryland and South Carolina to 84 in Virginia. Several counties of this region report that grapes are their only successful fruit-crop. The Scuppernong in North Carolina and southward, as usual, is a success. Of the cultivated grapes, the Concord has probably done well wherever it has had proper culture. In the Gulf States the condition is somewhat higher, approaching average on the whole; Mississippi and Louisiana being above and the other States nearly equal to average. Arkansas, where the Scuppernong is grown, is again in sharp contrast to the other inland Southern States, being 11 per cent. above average, while they range from 12 to 30 per cent. below. Rainy weather caused much loss from rot in many counties. North of the Ohio River the State averages range from 53 in Wisconsin to 88 in Michigan. Complaints of rotting came from various quarters, induced by the very heavy rains, while in other localities the fruit ripened remarkably well. West of the Mississippi River the State averages are between 60 in Kansas and 93 in Iowa. The grasshoppers injured the vines in the early part of summer in some places. A better condition is noted in the northern part of this region than in the southern. The Clinton and Concord are well reported in Dixon, Nebraska. On the Pacific coast the condition is but 2 per cent. below average, while many places had a plethora of cheap fruit. Oregon reports 82, grapes being injured in some places by extreme heat.

MAINE.—*Piscataquis:* Nearly a failure. *Oxford:* Apples were spoiled by the caterpillar in spring. *Sagadahoc:* Apples almost a failure. *Waldo:* Apples almost a failure. *York:* Apples few, but fair. *Androscoggin:* Apples almost a failure, owing to few blossoms and destruction by caterpillars.

NEW HAMPSHIRE.—*Rockingham:* Small crop compared with last year. *Stafford:* While the *condition* is 100, the *product* is far below last year.

VERMONT.—*Orleans:* Apples dropping from the trees; codling-moth at them; and they are wormy. *Franklin:* Apples half a crop. *Addison:* Apple-crop light. *Grand Isle:* Apples less than half crop.

MASSACHUSETTS.—*Plymouth:* The crop of apples very small.

CONNECTICUT.—*Litchfield:* The condition of apples good, but the yield will be less than average. Grapes late, but look well. *New London:* But few apples.

NEW YORK.—*Queens:* Apples falling from the trees in great quantities, and the condition inferior. Grapes but half a crop. *Ontario:* Fruit scarce. *Sullivan:* Generally promises little more than half a crop.

NEW JERSEY.—*Atlantic:* Grapes have rotted in some localities badly. Peach-crop abundant. *Camden:* Grapes mildewed and rotted badly during the extremely wet weather. *Warren:* Apples a very light yield, and very good condition.

PENNSYLVANIA.—*Northampton:* Grapes abundant. *Wayne:* Drought in June and July caused apples generally to fall off. *Cambria:* Little if any fruit in the county.

Clearfield: Very few apples, and no peaches. *York:* Grapes suffering from too much wet. *Beaver:* Fruit a failure. *Bucks:* Early fruit, almost a failure; "Smith's cider" the only fall apple. *Fayette:* Very large yield. *Crawford:* Neither apples nor peaches; but few pears. *Sullivan:* Very rarely so poor a crop of apples. *Washington:* Scarcely any fruit except grapes. *Lycoming:* Very few apples.

DELAWARE.—*Sussex:* The almost incessant rains for the past month have rendered what we had of the peach-crop worthless in market. *Kent:* The peach-crop abundant, but of little profit to the growers.

MARYLAND.—*Prince George:* Fruit very fine, excepting the almost worthless Hale's Early peach; a full crop of grapes, but in my neighborhood, when about to ripen, the skin splits and the juice exudes, ruining most of them. *Dorchester:* Apples and peaches in abundance. *Baltimore:* All kinds good in quality and more abundant than was expected. *Wicomico:* Very large crops of apples, peaches, and grapes, and, except peaches, never better in quality.

VIRGINIA.—*King and Queen:* Many apples; no peaches and few grapes. *Rockbridge:* Grapes have rotted very much. *Scott:* Apples and peaches almost a failure, and grapes a short crop. *Westmoreland:* Peaches have rotted on the tree; grapes injured by the long rains. *Page:* Entire failure, except grapes. *Pittsylvania:* Grapes rotting. *Cumberland:* Apples falling from the trees in great quantities. *Madison:* Apples of good quality, but the crop very small; peaches of fair quality, but scarce; grapes abundant and excellent. *Amelia:* The few apples left by the frosts of April are in most excellent condition; no peaches; grapes have suffered from wet. *Bedford:* Killed by frost, except grapes, which are rotting badly. *Charles:* Apples are much injured, and the peaches all killed by frost. *Henrico:* The grape-crop will be seriously injured by the wet. *Highland:* Apples and peaches almost a failure.

NORTH CAROLINA.—*Mecklenburg:* Apples and peaches a failure; grapes injured by rain. *Transylvania:* Apples are doing well. *Wilson:* The Scuppernong and the Concord grapes are doing very well, especially the former. *Anson:* Apples and peaches a total failure. *Bladen:* Complete failure in all kinds except grapes. *Caldwell:* Peaches a full crop in some parts and a total failure in others. *Madison:* Cultivated grapes are a success, and the wild varieties more plenteous than for many years.

SOUTH CAROLINA.—*Lexington:* Scuppernong grapes are fully up to average in quantity and quality. *Clarenden:* Grapes badly rotted, especially small varieties.

GEORGIA.—*Dooly:* Apples destroyed by freeze in April. *Grenada:* Fruit-crop very abundant; more so than for years. *Walton:* Apples falling from the trees, and apples and peaches both failures near the water.

FLORIDA.—*Gadsden:* The crop of Scuppernong grapes is very fine.

ALABAMA.—*Greene:* The fruit-crop all it could be under the most favorable circumstances. *Montgomery:* Apples, peaches, and grapes have done well. *Randolph:* Apples scarce; white peaches abundant; grapes plentiful and fine.

MISSISSIPPI.—*Lafayette:* Our fruit-crop is very large. *De Soto:* Have sold several thousand dollars' worth of apples, peaches, pears, and grapes.

LOUISIANA.—*Union:* All kinds have done well.

TEXAS.—*Dallas:* Fine; particularly peaches. *Somervell:* Peaches an abundant crop. *Red River:* All kinds in great abundance, and of extra good quality. *Tyler:* Peaches and figs abundant.

ARKANSAS.—*Garland:* Peaches and grapes have done well, better than for five years. Early apples did well, but late will fall short. *Stone:* All kinds greatly damaged by the late frosts; not over half a crop. *Arkansas:* All kinds abundant. *Washington:* About half a crop of apples and peaches; good in quality. *Montgomery:* Fruit plenty; apples fair and large. *Fulton:* A fair crop of all kinds, but apples in some orchards affected with "speck rotting."

TENNESSEE.—*Lincoln:* Apples and peaches almost a failure. *Sevier:* A few apples but no peaches. *Morgan:* Grapes badly injured by continuous rains from June to the 11th of August. *Greene:* Apples few; peaches fewer. Grapes a large crop, but rotted to some extent. *Dickson:* Almost a failure of all kinds except grapes and plums. *Sequatchie:* Apples rotting before ripening.

WEST VIRGINIA.—*Grant:* Grapes have suffered extremely from rot. *Jackson:* No apples and peaches. *Brooke:* Apples, pears, and peaches a failure; grapes large and fine, but some complaint of rot. *Braxton:* No fruit. *Summers:* Apple and peach crops failures.

KENTUCKY.—*Montgomery:* Apple and peach crop an entire failure. *Benton:* Injured by heavy rains. *Callaway:* The few peaches on the trees nearly all dropped off, and apples are rotting on the trees.

OHIO.—*Ross:* A failure, except grapes, which are a fair yield in some localities, but a total failure in others from freeze in April and from mildew. *Ashland:* No apples or peaches. *Geauga:* Apples and peaches a failure; grapes a fair crop. *Lucas:* Apples from one-third to one-half a crop in good condition. *Mahoning:* Grapes nearly a failure, owing to rot. *Athens:* Apples and peaches an entire failure. Grapes greatly injured by frost, wet, and drought.

MICHIGAN.—*Calhoun:* Apples not more than 75 per cent. of a crop. Grapes late, and not a large crop. *Lapeer:* Light crop of apples. *Manistee:* What fruit escaped the June frosts and July hail is doing well, but "few and far between;" codling-moth damaging apples some, but less than usual. *Shiawassee:* Smallest crop of apples ever known. Peach-trees killed. *Saginaw:* Not one-twentieth of a crop. A great many of the trees dead and dying. *Tuscola:* Apples not plenty, but fair. No peaches. Grapes promise fair. *Wayne:* Apples nearly a failure. Grapes affected with yellows in some localities. *Ottawa:* Apples not more than half a crop. No peaches. Grapes half a crop. *Saint Joseph:* Not half enough apples for home consumption. *Branch:* Apples a light crop but fine in quality.

INDIANA.—*Franklin:* Few such failures of apples and peaches in forty years. *Floyd:* Not a bushel of apples or peaches; grapes badly rotted. *Dearborn:* Fruit a complete failure, except some grapes. *Howard:* No apples or peaches. *Hendricks:* Fruit an entire failure. *Grant:* No apples or peaches, and but few grapes. *Washington:* Apples about one-twentieth of a crop; no peaches. *Hamilton:* Apples a failure; no peaches; small crop of grapes.

ILLINOIS.—*Pike:* Grapes good. *Madison:* Apples half crop in quantity but good in quality; peaches killed in the winter; grapes, chiefly Concord, rotting partially. *Johnson:* Grapes rotted before they matured. *Clinton:* Not many apples or peaches. *Pope:* A half crop of apples, but rotting on the tree. *Clark:* But few apples or peaches; grapes above average. *Piatt:* No fruit. *Bureau:* Apples less than a fourth of a crop; grapes fair. *Menard:* Grapes rotted badly. *Putnam:* Apples less than one-fifth of a crop. *Fulton:* Apples very scarce, but the few doing well; grapes badly rotted. *Macon:* Grapes still affected by rot. *Sangamon:* Apples scarce; no peaches; grapes ripening up well. *Warren:* Grapes have rotted to the extent of 33 per cent.

WISCONSIN.—*Walworth:* Fruit a failure. *Dodge:* Will be one-fourth of a crop of apples, and half a crop of grapes if no more injury by frost.

IOWA.—*Harrison:* Apple and grape crop not large, owing to the grasshoppers last year, but the fruit is fine. *Scott:* Condition of apples and grapes good, but the yield far below an average. *Benton:* Grapes destroyed by hail. *Fremont:* Fruit destroyed by a terrific storm of hail and wind.

MISSOURI.—*Gasconade:* Half the grapes lost by wet weather. *Chariton:* Grapes injured by mildew; small crop of apples and peaches. *Harrison:* Apples fine but not so numerous as some years; peaches scarce; grapes fine and plenty. *Platte:* Apples almost a failure, and the few greatly injured by insects. *Clay:* Apples and peaches reduced by the hard winter, and the remainder destroyed by grasshoppers, which entirely destroyed the grapes. *DeKalb:* Small crop of apples and peaches.

KANSAS.—*Linn:* Grapes were destroyed in most localities by grasshoppers. *Osage:* Grapes good but few in number. *Anderson:* Grapes and apples almost a failure.

NEBRASKA.—*Dixon:* The Clinton and Concord grapes hang full of clusters. *Pawnee:* Destroyed by grasshoppers in the spring.

CALIFORNIA.—*San Bernardino:* An abundance of apples; next to no peaches.

OREGON.—*Grant:* A failure, owing to a heavy freeze May 23. *El Dorado:* The grape-crop injured to some extent by the hot weather.

BEANS.

The bean-crop is nearly if not quite average, on the whole, the variations below or above being small. The State averages range from 112 in Nebraska to 71 in Wisconsin. The States full average or above were Maine, New Hampshire, Connecticut, New York, New Jersey, Delaware, Virginia, North Carolina, South Carolina, Florida, Mississippi, Arkansas, Tennessee, Kansas, and Nebraska. These embrace the largest bean-raising States. The others are below average, but their deficit is in most cases very small.

HOPS.

New York and Wisconsin, which together produce from three-fourths to four-fifths of the hops of the United States, have largely increased their acreage, the former 10 per cent., and the latter 7 per cent. Kansas has also engaged largely in hop-raising, having increased her acreage 50 per cent. this year in the counties reporting. An increased acreage is also noted in Michigan, Indiana, Minnesota, Missouri, and Iowa, the increment of the last named being 14 per cent. New Hampshire, Delaware, and Kentucky maintained their last year's area, while the other hop-producing States fell off.

New York and Kansas report the highest condition, 10 per cent. above average. Maine, New Hampshire, Delaware, West Virginia, Ohio, Michigan, Indiana, Missouri, and Oregon, are full average or above The other hop-producing States are below average, ranging from 99 in Pennsylvania to 83 in Minnesota.

HAY AND PASTURES.

The rains injured a large amount of hay by delaying the cutting beyond the proper time, and still larger quantities by damages between cutting and securing. But they had a compensating effect in producing extraordinary second crops, which have generally been secured in good condition. The grasshoppers in some localities were especially destructive upon timothy; but such injuries were compensated by crops of prairie and other wild grass, almost unprecedented in quantity and of unusually good quality. The hay-product in that section is, therefore, not only very large compared with last year, but above average.

Our returns show that the practice of providing against the danger of a deficiency in the ordinary crop by sowing millet and Hungarian grass is on the increase, and with very favorable results. In Lauderdale, Alabama, large quantities of both kinds were sown, producing excellent crops well secured. In Fayette, Mississippi, a large area of millet yielded a very heavy crop. An unusual quantity was grown in Independence, Arkansas, and in Newton it is superseding oats. In Tennessee, Bledsoe reports that large crops were raised, producing more to the acre than anything else; and Morgan, that it is "the only product the farmers can boast of," yielding 3½ to 4 tons to the acre. In Saginaw, Michigan, a quantity three times greater than ever before was sown, with the best results in yield and curing. In Missouri, Clay harvested very little timothy or clover, but "millet and Hungarian grass were substituted, and did well;" in Cass, where the hay-crop was destroyed by grasshoppers, millet yielded a first-rate crop. Vernon produced greater crops of millet and Hungarian grass than ever before, the farmers taking the hint from the fact that grasshoppers, chinches, and drought had conspired to almost entirely destroy timothy and other tame grasses the previous season. Holt met the destruction of timothy by grasshoppers in the same way; and Maries saved, in good condition, a very fine crop of Hungarian grass. In Wyandotte, Kansas, a heavy crop of these grasses was produced; and in Leavenworth, where timothy and clover were totally lost, they were raised in sufficient quantities to bring the figures for hay up to 110.

The States returning a product of timothy larger than last year are, Maine, 107; North Carolina and California, 106; Arkansas, 109; Tennessee, West Virginia, and Indiana, 103; Kentucky and Iowa, 115; Ohio, 105; Wisconsin, 101; Nebraska, 126. The relative decrease is greatest in New Jersey, 63; Massachusetts and Connecticut, 72; and Kansas, 77. Other States range between 79 and 100 per cent. of last year's crop.

The only States in which the condition of timothy, when harvested, was above average are, North Carolina, 103; Mississippi, 104; Arkansas, 106; and Oregon, 101. In Vermont, Wisconsin, and Kansas it was average. It was lowest in Illinois, 64. Indiana was 74; Ohio, 77; other States from 80 to 99.

The States returning a product of hay of all kinds equal to last year's are North Carolina, Georgia, Texas, and Michigan. The crop was greater in Maine, 109; Mississippi, 118; Louisiana, 126; Arkansas, 120;

Tennessee, 111; West Virginia, 103; Kentucky, 114; Ohio, 106; Illinois, 101; Wisconsin, 107; Iowa, 112; Missouri, 105; Kansas, 149; Nebraska, 142; it was most reduced in New Jersey, 63, the next in order being Maryland and California, 69; Delaware, 76; Virginia, 80; New York, 83; Pennsylvania, 84. In the remaining States the extremes are 93 and 99. Reports from all the States, averaged, make the whole product about 5 per cent. less than last year. It is probable that the surplus of other forage-products will fully make up this deficiency.

MAINE.—*Piscataquis:* A bountiful crop; 20 per cent. above that of last year. *Aroostook:* Large yield but poor quality, owing to wet weather. *Oxford:* Good and well secured. *York:* Considerably injured on low ground. *Androscoggin:* More than last year; secured in fair condition.

NEW HAMPSHIRE.—*Cheshire:* An abundant crop of rowen, sufficient to make the forage of all kinds fully up to an average. *Strafford:* While the quantity of timothy, compared with last year, is 80, the quality is at least 110.

VERMONT.—*Orleans:* A full crop secured. *Franklin:* Nearly an average yield. *Rutland:* Good crop. *Windsor:* The first crop of hay less than average, but is supplemented with the largest second crop ever harvested, and secured in perfect condition. *Caledonia:* More second crop than in any previous years.

MASSACHUSETTS.—*Plymouth:* The wet weather in July and August has secured a large second crop of hay.

NEW YORK.—*Tioga:* August a wet month, and the late cut damaged. *Queens:* Harvested in fine order. *Madison:* Less in quantity, but average or above in quality. *Steuben:* Reduced by drought. *Broome:* Very light and much injured in gathering. *Jefferson:* Secured in good condition. *Orange:* The lightest crop harvested in many years. To meet the deficiency a large breadth of fodder-corn was planted and is looking remarkably well. *Sullivan:* About half a crop.

NEW JERSEY.—*Burlington:* All available second crops will be gathered. *Warren:* Very light crop, gathered in good condition.

PENNSYLVANIA.—*Wayne:* Hay-crop light; secured in better than average condition; will not average more than one-third of a crop, owing to drought in June and July. *Armstrong:* Slightly damaged by wet harvest. *Montgomery:* The first crop of hay not average in quantity, but never better in quality; late rains will give a large second crop. *Beaver:* Better than last year in quantity, but not so well saved. *Fayette:* Considerably damaged by wet weather in harvest. *Crawford:* The largest crop for many years. *Indiana:* A very light crop, gathered in a wet condition. *Sullivan:* But half a crop. *Washington:* Timothy considerably damaged by grasshoppers.

MARYLAND.—*Howard:* Cut short. *Baltimore:* Clover, light; timothy, better.

VIRGINIA.—*Page:* Almost a failure. *Floyd:* Damaged by continued rains. *Madison:* Very short crop. *Bland:* A larger crop than for some years. *Pulaski:* Clover damaged by incessant rains. *Wythe:* Much badly damaged in the cock. *Bedford:* Short; think the second crop, if cut, would outyield the first. *Craig:* Very much bleached. *Orange:* A short crop of clover and orchard-grass, but the rains came in time to make a fair crop of timothy. *Charles:* The clover-crop very short, but timothy a fair average. *Highland:* Good. *Montgomery:* Injured by protracted rains; large quantities washed away by freshets.

NORTH CAROLINA.—*Chowan:* Wet weather has much hindered the saving of good hay. *Davie:* Crop injured by wet weather.

GEORGIA.—*Muscogee:* The rains too late for hay. *Elbert:* Good crop. *Glynn:* Injured by the long drought.

ALABAMA.—*Lauderdale:* A large crop of German millet and Hungarian grass sown, and the hay saved is of excellent quality. *Morgan:* The natural grasses are unusually fine.

MISSISSIPPI.—*La Fayette:* A large area of millet sown, and a very large yield.

TEXAS.—*De Witt:* Badly set back by drought. *Kaufman:* In a week or two the prairie-grass will be in fine condition for hay. *Nueces:* Grass growing finely. *Gillespie:* Grass for hay is growing now in fields and prairies. *Victoria:* Almost a failure from the long drought. *Red River:* Abundant. *Goliad:* A short crop of hay, caused by drought; but the recent rains will give an autumn crop.

ARKANSAS.—*Garland:* Did well. *Independence:* An unusual quantity of millet grown this year. *Crawford:* Benefited by the rains almost beyond measure.

TENNESSEE.—*Bledsoe:* Very fine crops of German millet, which makes more hay to the acre than anything else. *Sevier:* Saved in a miserably poor condition. *Morgan:* Most of the hay damaged for the want of sunshine. The Dutch millet is the only product the farmers can boast of. It has yielded 3½ to 4 tons per acre. *Greene:* Grass was good, but rain and floods ruined it largely. *Wilson:* Much the largest hay-crop ever raised. *Fulton:* Only moderate yield. Wild or prairie grass splendid, and many are saving hay from the woods-grass.

WEST VIRGINIA.—*Cabell:* Badly damaged. *Harrison:* On bottom-lands badly sanded and considerable loss. *Tyler:* Stacks floated off by the floods. *Wayne:* Greatly injured in harvest. *Raleigh:* Better than last year 25 per cent. *Pleasants:* Materially injured by continued rains. *Grant:* Put up in damaged condition. *Berkeley:* Rains came too late for the hay-crop. *Jackson:* A good deal damaged by water. *Gilmer:* All bottom-lands were overflowed, and the hay spoiled by being sanded. *Braxton:* Was double that of last year, but cured in a bleached and injured condition. *Mercer:* Average crop gathered, but damaged much by rains. *Upshur:* Considerably damaged by the high waters. *Nicholas:* Grasses ruined by the army-worm. *Barbour:* Damaged by the rains; very little over half a crop saved.

KENTUCKY.—*Callaway:* Good crop. *Shelby:* Much damaged by wet weather. *Laurel:* Saved very wet. *Grant:* The product of timothy was large, but owing to wet weather, was not harvested till late, and in poor condition. Clover-hay destroyed before it could be gathered into the stack. *Logan:* Hay injured 10 per cent. by the wet weather. *Scott:* An average crop, damaged 25 per cent. by the wet. *Carroll:* Clover in many cases ruined by the rains; timothy, though badly damaged, will be above average. *Spencer:* Largely injured by the rains. *Russell:* Have saved more than usual, but it stood too long on the ground and formed much woody fiber

OHIO.—*Hocking:* Badly damaged in harvest by wet weather. *Henry:* Timothy never better, but injured by rain after cutting. *Ross:* Scarce; $10 to $15 per ton in the meadow. *Monroe:* Considerably damaged, yet the yield over a half crop. *Delaware:* Both clover and timothy a good yield but got up in poor condition. *Hancock:* Large crop seriously injured by the wet. *Medina:* Considerably injured by rains; Hungarian grass and millet were largely sown, and being later than clover and timothy, the crops were secured in better condition. *Van Wert:* Timothy promised well, but the rains damaged it; could not be harvested till long after it was ripe. *Washington:* Not more than half saved in good condition. *Pike:* Damaged by rains, 40 per cent. after cutting. *Scioto:* Considerable destroyed by floods.

MICHIGAN.—*Calhoun:* A light crop. *Saginaw:* Three times the millet ever raised here before; a first-rate crop, with fine weather for curing. *Washtenaw:* Secured in good condition, and good in quality. *Branch:* Plenty and good; secured in good order.

INDIANA.—*Franklin:* Very little of the crop good. *Floyd:* Very light crop. *Howard:* Very little clover cut, and timothy stood so long that it was hardly worth cutting. *Grant:* Hay-crop was splendid, but the rains destroyed a large amount. *Clarke:* Badly damaged by the rains. *Washington:* Saved a considerable crop of grass and weeds for hay. *Clay:* The meadows had long been ripe and the seed falling off before they could be cut. *Hamilton:* On an average, poor stuff.

ILLINOIS.—*Grundy:* Damaged one-half in value by excessive rains. *Pike:* Most of the hay damaged by wet. *Madison:* The extraordinary rains caused a second growth of hay, which may be considered as making up for the quality of the first. *Pope:* A large amount of clover uncut; ruined by the rains. *Clark:* Damaged by the rainy season. *Mason:* The prairie-hay will make up the deficiency in timothy. *Menard:* The product large; damaged by the rains. *Jersey:* Turned out well. *Perry:* Reduced in quantity and quality by rains. *Richland:* Many farmers are cutting the wild grasses for winter forage. *Sangamon:* Large product, but most of it in poor condition.

WISCONSIN.—*Columbia:* Good. *Walworth:* First-rate crop. *Brown:* The timothy in nearly all the old hay-fields was winter-killed, but fields of the previous year's seeding produced abundantly. *Saint Croix:* Cut short by dry spring and summer. *Adams:* Timothy and marsh better than for years, and clover unusually good.

MINNESOTA.—*Renville:* Scarce. *Steele:* Prairie-hay not so good as tame hay, which is very fine. *Pope:* Marsh-hay abundant and good. *Nicollet:* Damaged by rains. *Winona:* Badly destroyed in stacks by rains and floods.

IOWA.—*Appanoose:* Timothy very good. *Decatur:* Best time ever known for cutting and curing. *Marion:* Turned out well, but much of it damaged by wet weather. *Pottawatamie:* Abundance of grass, but so much rain that we cannot get it cured.

MISSOURI.—*Newton:* Large yield, but damaged by rain. *Clay:* Very little timothy and clover harvested; millet and Hungarian grass substituted, and did will. *Cass:* Millet and prairie-grass were never better, but the hay-crop destroyed by grasshoppers. *Chariton:* A large crop of hay, and saved in good condition. *Nodaway:* Timothy about half destroyed by grasshoppers, and injured by wet weather; later hay never better. *Caldwell:* Badly injured in harvesting by rains. *Moniteau:* Much of the hay was lost by the wet weather. *Butler:* Good crop, but damaged by the rains. *Franklin:* Badly damaged by rains after cutting. *Vernon:* Timothy and other tame meadows were almost entirely killed last year by drought, chinches, and grasshoppers; but there never before was raised such a crop of millet and Hungarian grass. *Lincoln:* Damaged by rain. *Adair:* More than last year 10 per cent., and of average quality. *Dallas:* Timothy could not be saved until too ripe, owing to heavy rains. *Holt:* Timothy-meadows destroyed by grasshoppers, but prairie-hay superior, and more millet and Hungarian grass than usual. *Laclede:* Splendid. *Maries:* Was extra-good, but late harvested; the finest Hungarian grass ever raised, saved in good time and condition.

Ralls: Timothy suffered much from wet weather. *Worth:* Timothy injured by the grasshoppers eating off the leaves. *Benton:* Prairie-hay better than for ten years; timothy destroyed by wet weather. *Henry:* Timothy-meadows almost destroyed by grasshoppers, but the wild and prairie grasses excellent.

KANSAS.—*Dauphin:* Clover and timothy nearly all destroyed by grasshoppers; prairie-grass as good as ever, but not much left in the county. *Franklin:* Most of the timothy was destroyed by the grasshoppers; nothing can exceed the growth of our prairie-grass; much of the "blue-stem" is 6 to 8 feet high. *Neosho:* The wild prairie-grass is immense; blue-stem, over large tracts of valley-land, is higher than the head of a man riding through it on horseback. *Linn:* Prairie-grass was never known better. *Dickinson:* Prairie-hay being put up in large quantities. *Douglas:* Promise of one of the heaviest crops ever harvested. *Cherokee:* Splendid, and large quantities being put up. *Butler:* Have sometimes seen the prairie-grass heavier, but the quality never was so good. *Ellis:* Very heavy crop. *Leavenworth:* The large amount of millet and Hungarian grass raises the hay up to 110, in spite of the entire loss of timothy and clover. *Wyandotte:* Hungarian millet a heavy crop. *Osage:* The quantity of wild grass double that of last year, and of the best quality. *Washington:* Thousands of tons of blue-grass will be put up; can winter our stock, and that in the grasshopper counties of Missouri.

NEBRASKA.—*Webster:* Very heavy. *Clay:* Will be plenty. *Madison:* Hay from prairie-grass the best for years. *Antelope:* Hundreds of tons lost by rains, but grass plenty, and, with good weather, more than an average crop will be secured.

CALIFORNIA.—*Del Norte:* Haying finished; good condition and heavy product. *San Bernardino:* Hay in abundance, chiefly alfalfa.

STOCK-HOGS.

The number of stock-hogs kept for fattening is generally below that of last year, the only States reporting an equal number being Vermont, North Carolina, and Oregon. As last year witnessed a considerable reduction from its predecessor, the present report does not indicate any superabundance of swine in the country. The New England States show but a slight diminution, except in Massachusetts and Connecticut, where the deficiency will probably be about 10 per cent. The Middle States fall below last year, from 2 per cent. in Pennsylvania to 7 per cent. in New Jersey. The South Atlantic States, except North Carolina, are deficient from 2 per cent. in Maryland to 10 per cent. in Virginia. The Gulf States come short from 1 per cent. in Florida to 13 per cent. in Louisiana. In the inland Southern States the deficiencies run from 6 per cent. in West Virginia to 21 per cent. in Tennessee. In the great pork-producing States north of the Ohio River and west of the Mississippi, there is a very considerable reduction, Ohio and Indiana, 13 per per cent.; Michigan, 8 per cent.; Illinois, 15 per cent.; Wisconsin and Minnesota, 4 per cent.; Iowa, 10 per cent.; Missouri, 31 per cent.; Kansas, 47 per cent.; and Nebraska, 21 per cent. The destruction of feed-crops by grasshoppers caused a heavy export of hogs from the last two States, and the same influence was considerably felt also in Missouri. On the Pacific coast, California falls 5 per cent. short of last year, and Oregon 2 per cent. No State reports an increased number. The average condition as to size and weight also shows a decline from last year, but not to so great an extent as the number. Oregon is the only State that reports an improved condition, and that of only 1 per cent. The States reporting a condition equal to last year are, Connecticut, New Jersey, Pennsylvania, Delaware, and Virginia. The New England States generally are nearly up to last year, the greatest deficiency, 4 per cent., being in Massachusetts. Of the Middle States, New York comes short but 1 per cent. The South Atlantic States also show small deficiencies, that of Georgia, 4 per cent., being the greatest. The Gulf States fall off from 2 per cent. in Florida to 11 per cent. in Louisiana; the inland Southern States from 2 per cent. in West Virginia to 9 per cent. in Arkansas and Kentucky; the States north of the Ohio River from 2 per cent.

in Ohio to 8 per cent. in Wisconsin; the States west of the Mississippi River from 4 per cent. in Minnesota to 19 per cent. in Kansas. On the Pacific coast California is 5 per cent. short, and Oregon 1 per cent. in advance of last year.

INSECT-INJURIES.

Our statistical correspondence, while indicating the usual variety of injurious insects in different parts of the country, gives welcome evidence of the fact that the range of destructive influence, on the whole, has been much narrower than in former years, the losses inflicted being quite inconsiderable in the aggregate. The Colorado beetle has reached New England, but its severest ravages were felt in the Middle States, Maryland, and Virginia. In the West it was comparatively innocuous. The dreaded grasshopper of the transmississippi region seems to be perishing from the assaults of parasites; its demonstrations of destructive power were far less formidable than last year. The grass army-worm, or something resembling it, was especially destructive of the oat-crop in Ohio and a few counties of adjacent States. The dreaded chinch-bug made its power felt in only a few localities. Cotton-insects were heard of in but few places, and their ravages were too trifling to affect the general yield of the crop in any degree worthy of mention. Fruit and grain insects were very sporadic in their manifestations, doing but little general damage. A few unknown insects are noted which, upon a fuller description, will probably be identified with well-known species. The following is a brief summary of the county reports:

COLORADO BEETLE, (*Doryphora decem-lineata.*)—A single county in New England (Cheshire, New Hampshire) reports the presence of this insect with, however, but slight damage. In New York, a light visitation is noted in Oneida, Queens, Schenectady, Washington, Saratoga, Wyoming, Genesee, Jefferson, Rockland, Otsego. In some cases they were far more numerous in village-gardens than on farms. In Richmond they did considerable damage. In New Jersey, Atlantic reports serious injury, until the bugs were driven off by hand-picking and Paris green. In Sussex, after destroying the leaves, they attacked the tubers. In Salem and Camden they were very destructive upon late potatoes. In Burlington they were in the roads and all over the farms. In Mercer the perfect insects were but lightly affected by Paris green, but were easily shaken off into pans and destroyed; the larvæ, however, were readily destroyed by the poison. In Gloucester and Warren they were present in great numbers, being frequently no less destructive to egg-plants and tomatoes than to potatoes. In Pennsylvania they were troublesome in Lycoming, Beaver, Berks, Northampton, Wyoming, Lebanon, and Northumberland. The infliction was, in many cases, very severe, but the farmers stoutly resisted it with Paris green, hand-picking, and other devices, and their efforts were crowned with a good degree of success.

The beetles were very numerous and voracious in Prince George's, Washington, Caroline, Worcester, Baltimore, and Howard, Maryland. They were manfully resisted and the crops measurably saved. The heavy and frequent rains, however, washed the poison from the plants, requiring its frequent renewal. In Prince George's many fields were entirely ruined. An equally severe visitation is reported in several counties of Virginia, viz: Westmoreland, Essex, King George, Prince William, Fairfax, Madison, and Buchanan. Some farmers were chary in the use of Paris green, fearing its poisonous effects upon the pota-

toes; in such cases the crop was nearly swept. In other cases hand-picking alone was successfully resorted to; in others, the pests were so numerous and voracious that the most strenuous efforts were insufficient to check them.

They were numerous in some parts of Jefferson, West Virginia. One county in Ohio, Columbiana, reports them as troublesome, and two in Michigan, Manistee and Menomonee. They were present also in Orange and Ohio, Indiana. In Monroe, Illinois, they covered the potato-crops. Wisconsin reports them in Sauk, Douglas, Ozaukee, and Outagamie. In some places the pests were fewer than last year, and in others more numerous. They were noted in Pope, Minnesota. In Iowa, they were less numerous in Sioux than last year, while Hancock reports a greater number than for three years past. They are also mentioned in the reports from Washington, Missouri; Montgomery, Kansas, and Washington, Nebraska. In the West the visitation was comparatively light, while in the Eastern States it appears to be approximating its culmination.

GRASSHOPPERS.—The *Caloptenus femur-rubrum* is noted in Sullivan, New Hampshire, and Washington, Pennsylvania. In Craig, Virginia, it destroyed tobacco, and was heard from in Jefferson, West Virginia, in Belmont, Noble, and Vinton, Ohio, and in Marquette and Mecosta, Michigan. An insect described as a "small red-headed grasshopper" thronged the meadows of Monroe, Tennessee, where they have been observed for several years, but not so numerously before this year. A very destructive grasshopper is reported in Lincoln, of the same State.

Two counties in Wisconsin, Dodge and Outagamie, report great destruction, the one in wheat and the other in clover, by a species of *Caloptenus* which cannot be identified from the description. In Minnesota the *C. spretus* was very destructive in several counties. They riddled the east half of Renville and made destructive raids through the northeast of Noble. They cut down the crops of Blue Earth 25 per cent. and 33 per cent. in Redwood. They were exceedingly numerous and destructive in Watonwan, Brown, Nicollet, and Cottonwood. They did less damage in Morton, Sibley, and Lyon. They greatly damaged cereals and fruits in Fremont and Audubon, Iowa. Nodaway, Clay, Clinton, Franklin, Henry, Bates, and Platte, Missouri, complain of serious injuries. In Kansas they left tokens of their mischievous presence in Bourbon, Jackson, Miami, Neosho, Shawnee, Wyandotte, Anderson, Atchison, Brown, Johnson, and Marshall. In many cases a threatened visitation was entirely escaped, or left but light injury behind. In Nebraska they were more or less severe in Antelope, Cass, Johnson, Richardson, and Boone. In Hull the insects were largely destroyed by parasites. From two to eleven worms were observed upon the body of a single grasshopper, feeding upon their internal parts, and leaving only an empty shell. In Furnas at least a third of the insects noticed were infested with red parasites. This pest is evidently declining very fast, and the earnest hopes of a cessation of their ravages expressed by our correspondents appear to have a solid foundation in facts.

A correspondent in Le Roy, Coffee County, Kansas, reports a visitation of a severity approaching that of last year. Grasshoppers here cut the wheat in the head, devoured the corn as fast as it came up, and stood guard over the roots. They demolished the potatoes and garden-vegetables by wholesale, even swimming streams to find new ground to forage on. They devoured the fruit, foliage, and even the bark of fruit-trees. They were here also greatly infested with parasites.

CHINCH-BUGS, (*Micropus* [*Rhyparochromus*] *leucopterus.*)—This insect

shortened oats-crops in Halifax, Virginia, and would have been very injurious in Orange but for heavy rains; in Loudoun they were noted in wheat, but not in corn. In Jefferson, West Virginia, they infested wheat and Hungarian grass. Indiana reports them in Madison and Ohio Counties. In Illinois, Henderson, Carroll, Lake, Ogle, Cook, and Edwards suffered considerable loss in wheat, corn, and other cereals; in some cases their numbers and voracity were appalling. In Wisconsin they were very injurious to grain-crops in Juneau, Sauk, Waukesha, Dodge, Green Lake, Iowa, Jackson, Milwaukee, Crawford, Monroe, Vernon, and Walworth. In Washington they made their first appearance, but too late to do much damage. In several cases the advent of cold rains saved crops from destruction. They were destructive also in Clayton, Iowa, as also in Nodaway, Pettis, and Holt, Missouri. In Butler, Kansas, they swarmed in the early season, but the later rains greatly repressed their activity; they were present also in Franklin and Brown. They injured cereal-crops in Johnson, Richardson, and Washington, Nebraska.

GRASS ARMY-WORMS, (*Leucania unipuncta*, prob.)—This insect appeared in Lincoln, Maine, early in August, and destroyed some fields of grain and other crops. In Newport, Rhode Island, they overran several fields, eating all the grass and most of the cereals, including some cornfields. They were here fully as destructive as in 1861. They also appeared in Cambria and Chester, Pennsylvania; in Frederick, Maryland; in Craig, Grayson, and Augusta, Virginia; Tucker, Randolph, and Nicholas, West Virginia. Insects called army-worms were destructive upon the oats-crop of Ohio. In Fulton, where they had previously been comparatively unknown, they came by millions, cutting the stalks of oats and leaving the ground covered with the grain. Hancock lost 60 per cent. of the crop, which was also greatly injured in Henry, Van Wert, Williams, Fulton, Montgomery, Mercer, Auglaize, Crawford, Delaware, Lucas, Union, Warren, Morrow, and Adams. In Licking the general destruction of oats was supplemented by serious injury to the corn. They cut off the leaves and head of the oats just ready to harvest. The insect is described as resembling the cut-worm, but a little lighter colored, being a light brown. In some cases they attacked every green thing. In Monroe and Branch, Michigan, they destroyed not only oats, but grass, corn, wheat, and rye. They are reported also in Franklin, La Porte, Whitley, and De Kalb, Indiana, and in Alexander and Ogle, Illinois.

COTTON-INSECTS.—Reports of insect-injuries to the cotton-crop are very rare. Caterpillars (*Anomis xylinae*, [*Aletia argillacea*, Hub.]) appeared in Early, Georgia, and in Jackson and Columbia, Florida. Bollworms (*Heliothis armigera*) were more numerous than for eight years in Lowndes, Mississippi. Lice (*Aphis*, sp.) were troublesome in Caddo, Louisiana. In Covington, Alabama, an insect, designated as "gnats or lice," never before seen in that region, caused widespread injury. They cause an exudation from the plant, which, on drying, leaves a dusty powder; their punctures cause speedy death to the plant.

MISCELLANEOUS.—Fruit-caterpillars (*Clisio campa*) destroyed many apples in Franklin, Oxford, and Androscoggin, Maine, and in Platte, Missouri. Coddling moths (*Carpocapsa pomonella*) injured apples in Orleans, Vermont; Manistee, Michigan; and Holt, Missouri. The borer (*Ægeria tipuliformis*) injured currant-bushes in Kalamazoo, Michigan. The grape-vine borer (*Æ. polistiformis*) was destructive in Holt, Missouri.

The weevil (*Diplosis tritici*) is reported in Piscataquis and Waldo, Maine; Howard, Indiana; Milwaukee, Wisconsin; and Washington, Nebraska. The curculio (*Conotrachelus nenuphar*) greatly injured plums

in Holt, Missouri. Cut-worms (*Agrotis*, sp.) materially reduced the tobacco-crop in New Haven, Connecticut; they were equally severe upon the corn-crop in Saratoga and Wyoming, New York. Grub-worms (*Lachnosterna*, sp.) cut down corn 25 per cent. in Dukes, Massachusetts, besides damaging pastures considerably. Similar injuries are reported in Washington, New York, and Vernon, Wisconsin. Lice (*Aphis*, sp.) are noted in Richland, Wisconsin, and Holt, Missouri. In Morgan, Tennessee, some farmers were annoyed by a black worm, 1½ to 2 inches long, with two parallel white stripes upon the head; it ate the fodder from the corn-stalks. In Catoosa, Georgia, corn was injured by a worm penetrating the ear from the silk to the butt. A new corn-insect, somewhat resembling a cabbage-louse, is complained of in Columbia, Wisconsin. It lives in the ground and gnaws the bark from the roots. A new green bug injured heads of wheat in Dodge, Wisconsin. In Douglas County, of the same State, a small black bug, half an inch long, slim, and very lively, ate potato-tops very rapidly. Slaked lime was found an effective destroyer of the pest.

Table showing the condition of the crops, &c., on the first day of August, 1875.

States.	CORN.	SPRING-WHEAT.	SPRING-RYE.	OATS.	BARLEY.	BUCKWHEAT.		POTATOES, (*Solanum tuberosum.*)	POTATOES, (*Batatas edulis,*) SWEET.	TOBACCO.
	Average condition August 1.	Average condition August 1.	Average condition August 1.	Average condition August 1.	Average condition August 1.	Acreage compared with last year.	Average condition August 1.	Average condition August 1.	Average condition August 1.	Average condition August 1.
Maine	94	102	99	92	98	96	102	103	.....	.....
New Hampshire	98	100	101	100	99	100	100	99	.....	92
Vermont	97	101	101	105	106	100	93	102	.....	90
Massachusetts	93	100	98	100	100	125	83	92	.....	95
Rhode Island	95	100	110	93	87	.....	.....	101	.....	.....
Connecticut	105	100	.....	104	102	100	96	106	.....	97
New York	95	97	95	104	101	101	97	102	.....	98
New Jersey	109	.....	.....	77	.....	107	100	104	103	.....
Pennsylvania	103	93	93	100	97	100	100	103	99	92
Delaware	100	.....	.....	70	.....	.....	.....	75	100	.....
Maryland	105	.....	.....	83	.....	95	100	84	99	104
Virginia	108	.....	.....	76	.....	97	100	96	99	105
North Carolina	103	.....	102	96	.....	101	102	100	99	111
South Carolina	83	.....	.....	70	.....	.....	.....	95	88	.....
Georgia	85	.....	87	90	.....	.....	.....	91	84	95
Florida	91	.....	.....	89	.....	.....	.....	100	78	106
Alabama	100	.....	.....	89	.....	.....	.....	86	86	97
Mississippi	111	.....	100	117	.....	.....	.....	102	106	107
Louisiana	93	.....	.....	100	.....	.....	.....	96	95	.....
Texas	88	.....	112	111	111	.....	.....	106	89	89
Arkansas	109	.....	.....	111	96	.....	.....	106	100	99
Tennessee	114	.....	92	71	89	100	102	110	102	99
West Virginia	106	.....	.....	96	.....	99	99	107	103	100
Kentucky	102	.....	.....	63	77	105	93	112	87	93
Ohio	91	87	.....	94	83	104	99	117	100	95
Michigan	98	102	102	101	106	110	100	101	.....	.....
Indiana	82	.....	.....	63	63	106	93	97	92	76
Illinois	99	82	.....	78	83	96	96	131	97	72
Wisconsin	89	99	107	111	98	103	96	108	.....	85
Minnesota	82	99	108	97	99	107	91	95	.....	.....
Iowa	87	78	95	100	85	98	98	115	95	.....
Missouri	112	65	78	85	88	120	104	107	107	101
Kansas	113	77	93	66	76	123	106	107	100	99
Nebraska	105	60	107	63	84	128	112	87	84	.....
California	89	68	.....	104	75	.....	.....	81	112	.....
Oregon	101	98	95	103	98	105	94	92	.....	.....

Table showing the condition of the crops, &c., on the first day of August, 1875—Continued.

States.	HAY.			PASTURE.	BEANS.	COTTON.	SORGHUM.	SUGAR-CANE, (*not Sorghum.*)	APPLES.	PEACHES.	GRAPES.
	Average condition of timothy, August 1.	Product of clover compared with last year.	Average condition of clover when cut.	Average condition August 1.	Average condition August 1.	Average condition August 1.	Average condition August 1.	Average condition August 1.	Average condition August 1.	Average condition August 1.	Average condition August 1.
Maine	105	109	105	107	101	.....	.....	.....	52	.....	87
New Hampshire	95	90	96	97	100	.....	.....	.....	69	81	94
Vermont	101	94	99	104	100	.....	.....	.....	75	.....	97
Massachusetts	77	72	86	84	101	.....	.....	.....	94	100	89
Rhode Island	88	57	100	70	100	.....	.....	.....	125	87	105
Connecticut	82	70	81	66	102	.....	100	.....	41	102	117
New York	91	84	94	100	101	.....	.....	.....	61	72	86
New Jersey	74	52	85	96	100	.....	.....	.....	71	106	100
Pennsylvania	81	77	92	95	100	.....	.....	.....	56	52	93
Delaware	60	70	75	60	100	.....	.....	.....	60	140	100
Maryland	76	71	88	88	101	.....	.....	.....	75	93	104
Virginia	84	76	83	97	98	97	105	.....	44	31	90
North Carolina	104	99	98	105	102	99	101	.....	45	18	94
South Carolina	.....	.....	.....	88	88	84	.....	.....	26	23	80
Georgia	87	87	89	84	90	86	100	80	71	68	90
Florida	.....	.....	.....	84	.....	85	.....	89	.....	58	96
Alabama	96	98	95	92	104	93	94	91	76	79	94
Mississippi	75	96	93	104	103	104	101	102	97	104	96
Louisiana	.....	.....	.....	95	87	99	.....	91	101	95	106
Texas	105	.....	.....	89	87	93	82	.....	101	87	99
Arkansas	100	102	102	106	106	108	103	.....	94	96	94
Tennessee	93	95	92	111	100	107	103	110	43	21	92
West Virginia	86	98	85	104	99	.....	93	102	27	24	.....
Kentucky	82	89	78	114	94	.....	91	.....	33	23	69
Ohio	89	66	74	111	99	.....	94	.....	10	3	.....
Michigan	90	95	97	92	102	.....	.....	.....	54	12	78
Indiana	79	76	70	111	95	.....	89	.....	34	43	81
Illinois	81	69	73	119	94	.....	99	.....	51	25	.....
Wisconsin	100	94	100	96	99	.....	102	.....	60	.....	95
Minnesota	88	92	100	89	93	.....	89	.....	86	.....	90
Iowa	100	90	94	113	99	.....	84	.....	70	.....	99
Missouri	92	99	89	120	102	103	106	.....	75	62	75
Kansas	81	75	79	119	104	.....	106	.....	54	66	73
Nebraska	.....	.....	.....	120	100	.....	98	.....	56	.....	83
California	101	174	95	70	88	.....	.....	.....	66	44	104
Oregon	100	98	98	103	95	.....	.....	.....	83	76	101

Table showing the condition of the crops, &c., on the 1st day of September, 1875.

States.	CORN.	WHEAT.	RYE.	OATS.	BARLEY.	BUCK-WHEAT.	POTATOES. (*Solanum tuberosum.*)	POTATOES. (*Batatas edulis,*) SWEET.	TOBACCO.	COTTON.	HAY.		
	Average condition September 1.	Average condition when harvested.	Average condition when harvested.	Average condition when harvested.	Average condition when harvested.	Average condition September 1.	Average condition September 1.	Average condition September 1.	Average condition September 1.	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.
Maine	105	96	100	106	101	95	91	.....	.....	.....	107	98	109
New Hampshire	100	101	102	101	100	102	98	.....	87	.....	92	98	95
Vermont	98	98	97	107	104	103	91	.....	.....	.....	89	100	93
Massachusetts	100	100	92	95	102	110	101	.....	102	.....	72	85	79
Rhode Island	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Connecticut	108	100	101	101	102	103	99	.....	102	.....	72	97	72
New York	99	65	90	98	98	100	106	.....	94	.....	86	94	83
New Jersey	111	90	94	84	.....	110	93	102	.....	.....	63	90	63
Pennsylvania	108	85	92	94	92	103	103	95	98	.....	82	87	84
Delaware	100	92	100	80	.....	100	75	100	.....	.....	85	80	76
Maryland	106	92	94	88	71	101	76	98	98	.....	79	93	69
Virginia	112	86	92	79	.....	110	97	97	112	100	87	89	80
North Carolina	104	97	95	92	.....	.....	93	100	92	90	106	103	100
South Carolina	87	97	.....	91	.....	.....	100	90	.....	80	.....	.....	98
Georgia	90	98	99	92	.....	.....	93	87	96	76	98	91	100
Florida	83	.....	92	89	.....	.....	97	83	100	75	.....	.....	.....
Alabama	105	105	101	93	97	.....	81	86	102	87	.....	.....	99
Mississippi	116	139	100	108	.....	.....	101	114	103	98	100	104	118
Louisiana	85	85	87	98	.....	.....	90	97	.....	88	.....	.....	126
Texas	89	122	109	106	108	.....	91	93	94	94	90	78	100
Arkansas	103	113	112	114	.....	111	99	109	105	99	109	106	120
Tennessee	114	98	98	76	94	99	103	100	92	96	103	91	111
West Virginia	107	74	85	71	95	93	100	98	94	.....	103	99	103
Kentucky	103	80	85	67	65	94	106	90	86	.....	115	87	114
Ohio	97	61	81	68	71	100	112	95	66	.....	105	77	106
Michigan	101	88	99	103	103	99	118	95	97	.....	97	98	100
Indiana	83	61	78	52	64	102	109	90	81	.....	103	74	98
Illinois	95	73	92	70	78	97	125	100	75	.....	96	64	101
Wisconsin	60	98	102	105	102	43	101	.....	60	.....	101	100	107
Minnesota	72	101	99	94	99	83	97	.....	.....	.....	99	94	97
Iowa	92	77	92	99	81	93	120	97	100	.....	115	99	112
Missouri	111	67	86	92	85	109	112	102	105	103	94	88	105
Kansas	109	83	90	76	74	111	108	100	99	.....	77	100	149
Nebraska	93	80	90	91	79	105	139	95	.....	.....	126	94	142
California	95	70	86	94	80	.....	94	94	.....	.....	106	97	69
Oregon	100	106	98	95	96	93	95	.....	92	.....	100	101	94

Table showing the condition of the crops, &c., on the 1st day of September—Continued.

States.	BEANS.	SORGHUM.	SUGAR-CANE, (not *Sorghum.*)	HOPS.		STOCK HOGS.		WOOL.	APPLES.	PEACHES.	GRAPES.
	Average condition September 1.	Average condition September 1.	Average condition September 1.	Acreage compared with last year.	Average condition September 1.	Number for fattening compared with last year.	Average condition as to weight and size.	Weight of fleece compared with an average clip.	Average condition September 1.	Product compared with an average.	Average condition September 1.
Maine	100	.....	.....	97	103	99	99	100	48	.....	87
New Hampshire	100	.....	.....	100	100	99	98	100	74	105	93
Vermont	98	.....	.....	89	94	100	99	100	65	.....	82
Massachusetts	95	.....	.....	.....	.....	89	96	96	90	105	97
Rhode Island	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Connecticut	103	.....	.....	.....	.....	91	100	100	54	105	106
New York	100	.....	.....	110	110	95	99	101	65	88	94
New Jersey	100	.....	.....	.....	.....	93	100	100	61	97	95
Pennsylvania	98	.....	.....	98	99	98	100	100	47	41	99
Delaware	100	100	.....	100	100	97	100	100	70	112	100
Maryland	96	104	.....	.....	.....	98	99	100	88	102	98
Virginia	100	91	.....	96	96	90	100	99	58	30	84
North Carolina	107	98	.....	.....	.....	100	98	100	47	16	92
South Carolina	105	105	.....	.....	.....	91	97	100	33	18	98
Georgia	93	100	80	.....	.....	96	96	97	76	85	95
Florida	105	.....	79	.....	.....	99	98	100	77	59	93
Alabama	98	99	88	.....	.....	95	94	101	80	87	98
Mississippi	101	114	109	.....	.....	95	90	101	95	108	106
Louisiana	.....	97	88	.....	.....	87	89	100	87	98	102
Texas	88	97	80	.....	.....	94	93	99	102	43	99
Arkansas	111	114	.....	.....	.....	90	91	99	99	106	111
Tennessee	105	105	.....	.....	.....	79	96	102	48	25	88
West Virginia	97	93	.....	92	104	94	98	101	52	32	83
Kentucky	94	95	.....	.....	.....	85	91	101	49	22	70
Ohio	93	101	.....	90	105	87	98	101	35	8	74
Michigan	98	87	.....	103	103	92	95	100	66	18	88
Indiana	91	93	.....	108	105	87	96	101	32	24	75
Illinois	88	95	.....	87	94	85	95	98	49	14	79
Wisconsin	71	43	.....	107	92	96	92	102	55	.....	53
Minnesota	91	79	.....	101	83	96	96	100	83	.....	88
Iowa	95	89	.....	114	98	90	95	101	76	.....	93
Missouri	99	103	.....	101	102	69	91	99	76	50	77
Kansas	104	110	.....	.....	.....	53	81	101	30	60	69
Nebraska	112	110	.....	.....	.....	79	95	100	83	.....	91
California	95	.....	.....	116	96	95	95	98	76	26	98
Oregon	99	.....	.....	146	100	98	101	97	86	72	82

EXTRACTS FROM CORRESPONDENCE.

IMMIGRATION.—*Chippewa, Mich.:* A very large immigration of Canadian farmers is settling in our county.

CASTOR-BEANS.—*Vernon, Mo.:* There will be at least 80,000 bushels of castor-beans raised in the county.

MILLET VERSUS OATS.—*Fulton Ark.:* German millet is superseding oats. The yield per acre, as compared with oats, is enormous.

FLAX IN KANSAS.—*Bourbon:* Flax has been very extensively raised and promises well; but the heavy rains for the last two weeks have prevented thrashing, and how it will turn out cannot yet be told. *Cherokee:* There was an unusually large acreage of flax sown, but it has suffered from wet weather. The thrashing-machines can hardly thrash it, as the lint has begun to be raised. Many fields have not yet been cut. *Shawnee:* The acreage of flax 50 per cent. greater than last year, but the yield will not be as much to the acre. The grasshoppers damaged it in the spring about 20 per cent. *Nemaha:* Only about 800 bushels of flaxseed were produced; of the 1,600 acres sown in this county, the grasshoppers destroyed 75 per cent. The remainder did well and was a paying crop. *Woolson:* The flax-crop, which equaled the oat-crop in acreage, has been almost entirely ruined.

FATALITY AMONG HOGS.—*Horry, S. C.:* A disease among hogs heretofore unknown in this country is sweeping some sections almost bare.

COW-PEASE.—*Gadsden, Fla.:* This crop is one of the most valuable of the South for the fattening of stock in the fall. The prospect for an abundant yield is now as fine as I have ever witnessed.

Shelby, Ala.: An extensive and promising pea-crop, it is hoped, will serve to partly extricate our farmers from the difficulty of a failure in the corn-crop, and perhaps enable them to winter their stock.

Jefferson, Ga.: The rain set in in time to benefit the pease. In Georgia the pea-crop is a very important one, being chiefly relied on for fattening hogs for bacon.

Drew, Ark.: Field-peas were never before so fine.

Claiborne, La.: The field-pease crop was never better.

WHEAT FROM THE DEPARTMENT.—*Bandera, Tex.:* This is the second year with Touzelle wheat from the Department. The average yield is 30 bushels per acre. It is decidedly the best winter variety ever introduced into the county. It has escaped the rust when four other varieties have rusted in the same field.

Newton, Ark.: The Clawson wheat received from the Department proves excellent. It is the finest I ever saw. One field of Fultz wheat averaged 25 bushels per acre. The Tappahannock proves generally good; we do not ask for better. The farmers have set aside all other kinds. *Fulton:* Tappahannock wheat is taking the lead in this county, followed closely by Fultz; by some the latter is preferred. In these two kinds of wheat the Department has been of great advantage to this county. Both kinds have increased and spread rapidly, and improve on each sowing.

ADVANTAGE FROM CANNING FRUIT.—*Wicomico, Md.:* The peach-crop,

though most abundant, has not proved remunerative to growers, and would have been lost had it not been for the canning of the fruit, which has been undertaken here on an extensive scale for the first time.

CLIMATE AND PRODUCTIONS IN NEW MEXICO.—*Dona Ana, N. Mex.:* My acquaintance with this valley commenced in March, 1863. The climate made a strong and favorable impression on my mind for its dryness and salubrity. Since then I have found that the invalid here can take out-door exercise on at least three hundred and sixty days in the year, and always in the bright sunshine, if so disposed. The dryness of the atmosphere prevents the rise of malarious vapors from the ground, and there are no swamps and marshes whence poisonous exhalations can come.

The prevailing rain-fall is summer showers, more on the high mountains and plains than in the valleys. It would be exceedingly difficult to determine the mean annual fall for this county, except by observations on each six square miles of territory. Some rain, perhaps snow, may be expected during winter. The spring and fall months are almost invariably rainless. Most rain falls in July. The rainy season, if we can be said to have one, follows the summer solstice. Irrigation is an absolute necessity to the growth of all crops; no crop is ever attempted where the irrigating ditch does not reach. The land in this valley lies so level it can all be bedded and flooded. The Rio Grande is almost the entire source of supply for water in this county, and its very muddy waters pour over the land at each application a rich sediment, that will render the soil as durable as that of Egypt where flooded by the Nile. To secure a continued increase of richness, the farmer need only turn under his stubble and weeds, and apply such yard-manure as he can make.

The year will not average three days in which the plow cannot be run in the cultivation of the land. I have never seen or heard of but one day on which the mercury remained at the freezing-point throughout the day; then three-fourths of an inch of ice formed on still water. The fig-tree lives by the protection of a house. No apple, pear, plum, peach, apricot, or almond tree is tender. Grapes do better if slightly hilled up at the commencement of winter; but the tops of the most tender foreign sorts will not kill by reason of the cold. Summer fairly sets in by the middle of April, after which no frost need be looked for. As the grape-buds do not generally open before the eighth, the grape-crop is seldom hurt. Grapes are grown here in a manner almost identical with the practice at Caboul, as described in the Agricultural Reports of 1860. In fact, our climate and elevation, 4,000 feet, are almost identical with that place. *Oidium* never grows on our vines or fruit, and the root-louse is not here. Apples, pears, and quinces have no rust-specks on their skins, no moss or liverwort on their bark.

The first frosts are expected in October, thus giving to this valley six months without any frost; and with our great heat, ample time is secured for maturing all kinds of fruit not tropical. Corn may be safely planted in March, and the roasting-ears picked by July 1. Alfalfa can be cut the middle of May for green soiling, or for hay the 1st of June. It yields five cuttings. Wheat and rye sown in October could be cut for feed by the 5th of May, and they would ripen by the middle of June. Pasturage in this valley is poor, no good native grass exists, and the pasture-grasses of the States cannot thrive under our bright sun and dry atmosphere. Dairymen would be compelled to keep their cows in yards, where they could be fed on cut food and have plenty of shade. Stock-cattle and sheep are pastured on the high plains and mountains, where they find their feed in the *gramma* and other grasses, the year round. Such pasturage is only limited by distance from water.

The mines and military posts are our only markets for surplus farm-produce, except wool and hides. The mines are rapidly increasing, while the posts are uncertain, variable, and decreasing, as markets. Dona Ana County has mines of silver, copper, and lead, but none are worked at present. The mines of Grant County are producing at the rate of $1,000,000 a year; and to them most of our products are sold.

Freights from and to the East are conveyed six hundred miles by wagons, and at great cost and delay, as the wagons are not unfrequently ninety days on the road. The completion of the Texas Pacific Railway to this valley would add much to the value of our land, increase our comfort and population, remove our isolation, promote knowledge and civilization, and develop all our natural resources and advantages. Every man here is anxious to see that road completed.

The eight grape-vines I received from your Department on the 20th January, 1874, though transplanted last December, have made reeds eight feet long this summer; and those received in March last, single-eye plants, have made good strong reeds from three to six feet. They are still growing vigorously. I have great faith in their succeeding here as well as in the gardens washed by the Mediterranean.

CROPS IN NEBRASKA.—*Dixon:* Our crops are the best that we have had for eight years. Nearly all are splendid. Farmers are in good spirits and look for better times. Somerset oats are a success here, but the Sandy oats fall too easily for our soil.

WASTE OF FLAX-FIBER.—*Meeker, Minnesota:* The culture of flax is of considerable importance to our farmers. It is raised by all who could obtain seed. Many who desired to cultivate it could not for want of seed. It is cultivated wholly for the seed, no account being made of the straw. Thousands of tons of flax-straw are annually burned or otherwise destroyed, which, with proper machinery, could be utilized and become a source of profit to both producer and manufacturer.

FLOODS.—*Wayne, Iowa:* It has rained almost all the time since the 20th of June, taking off nine-tenths of the bridges in the county.

SPECIALTIES IN OHIO.—*Medina:* We have splendid weather for grass, and as dairying is the great specialty in this county, farmers would rejoice were it not for the low price of dairy-products. But what is their loss is the public's gain. Onions also are becoming a specialty in some townships in which are reclaimed swamps, and we could not have better weather than we are now having for that product. It is said that they will be shipped East by cars.

PROFITABLE STOCK-GROWING.—*Tippecanoe, Indiana:* Pasturage is very fine. Stock is doing well. One of our large grazers has sold off his pasture one thousand head at 5 cents per pound gross, weighed at the pasture.

DAMAGES IN ILLINOIS FROM EXCESSIVE RAINS.—*Shelby:* On our extensive river-bottoms corn-fields submerged by the floods have the appearance of stalk-fields in February—all dead. This is doubtless owing partly to the fact that the corn was half torn from the roots, and partly to the sediments that have settled upon it from the water. Over one hundred families have lost *all* corn, wheat, oats, and potatoes. The latter were lost by rot. In fact, *all* potatoes on flat land have rotted, and yet there will be an immense crop.

White: Our county is on the verge of distress. We have had continual wet weather since early in the spring until the last sixteen days,

and now our corn is suffering for rain, because the roots are all so near the top of the ground. All the corn-lands that were low have been submerged, including some never known to be before; also much of the wheat, oats, hay, and vegetables. Many thousands of acres of corn have been lost by the overflow, and many more by the continuous rains. Oats and hay were above average, but could not be saved. The county will not be near self-sustaining.

NOTES ON RESOURCES OF MARYLAND.

Maryland is one of the smaller States, having an area, according to Land-Office records, of 11,124 square miles, Vermont, New Hampshire, and New Jersey being next in size on one side, and on the other Indiana comes nearest, though three times as large, having 33,809 square miles. Its advantages as an agricultural section are probably not well understood, and therefore not sufficiently appreciated, at least by the people of other States. Among these advantages are a medium temperature, a healthful climate, a varied surface, soil of average productiveness, proximity to great markets, good railroad facilities, and remarkable abundance of water-communication. There are soils of great productiveness and durability, and the poorer lands are susceptible of improvement by cheap and abundant local fertilizers, such as fish-chum, sea-weed, and sea-ooze, oyster-shell and other lime, marl, and the fertilizing refuse of neighboring cities brought cheaply by water-transportation. Farms have been increased in value from five to ten fold by these inexpensive means, in connection with clovering, stock-feeding, etc., paying all the time the expenses of such improvement in more remunerative yields. Its shape is irregular, the Potomac and its north branch constituting the southern and western boundaries, while its northern line runs west through nearly four degrees of longitude, and its eastern through nearly two degrees of latitude, this width decreasing to a few miles between Pennsylvania and Virginia, at a point a little west of Harper's Ferry, yet more than a hundred miles distant from the western boundary of the State. The range of elevation is about 3,000 feet, giving additional variety to production and opportunity to its denizens for choice of a sea-shore residence or a mountain retreat. The mean temperature of the year is about 52°; the mean for January varies from 27° to 37°, and for July from 75° to 80°. Rarely in winter does the temperature fall to 10° above zero, though in the past ten years it has a few times fallen a little below zero. Except in a few undrained locations, in the tide-water region, there is exemption from malaria, and the general healthfulness of higher elevations surpasses that of New England, and equals that of the most healthful districts of New York and Pennsylvania. Indeed, the Blue Ridge and the Alleghany Range, from Maryland to North Carolina inclusive, are unsurpassed in salubrity by any section of the United States east of the Rocky Mountains. In this respect the tide-water region will compare favorably with a large portion of New Jersey, and with the State of Delaware, nearly all of which lies alongside of the Eastern Shore of Maryland, and both between the bays of Delaware and Chesapeake.

METEOROLOGY OF MARYLAND.

The meteorology of the State is presented more in detail in the following table, which gives the mean temperature of each month of the year in 1870 at the stations named, with the average for the year, and similar averages for preceding years at the points at which meteorological records were kept, and also the amount of rain-fall of the same periods:

MEAN TEMPERATURE.

Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
	Deg.	*Deg.*	*Deg.*	*Deg.*	*Deg.*	*Deg.*	*Deg.*	*Deg.*	*Deg.*	*Deg.*	*Deg.*	*Deg.*
Woodlawn	38.1	31.9	35.8	51.5	63.0	73.1	77.9	76.0	66.6	56.7	44.5	33.1
Annapolis	39.1	37.7	47.6	53.8	65.3	76.6	81.2	78.7	71.2	60.6	49.1	37.7
Saint Inigoes	43.2	35.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Frederick	40.1	36.7	42.2	56.6	68.2	77.4	.....	.....	.....	.....	.....	.....
Mt. Saint Mary's	36.1	30.9	36.0	51.5	62.6	71.4	76.0	72.7	65.6	55.2	43.4	32.8
Fallston	.....	.....	.....	.....	.....	.....	.....	.....	68.2	56.3	47.0	34.2
Woodstock College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	32.4
Average, 1870	39.3	34.6	40.4	53.4	64.8	74.6	78.4	75.8	67.9	57.2	46.0	34.0
1869	37.1	36.6	39.6	53.9	61.6	72.0	75.8	74.1	65.7	50.6	40.5	38.9
1868	28.9	26.7	41.3	48.0	58.7	70.0	80.5	74.2	66.5	52.5	45.1	31.2
1867	25.6	37.9	37.5	53.4	59.5	71.8	75.5	73.8	68.0	56.4	45.5	31.5
1866	30.2	33.0	40.8	54.5	60.7	73.9	77.0	69.6	65.6	56.6	46.8	32.4
1865	27.5	32.1	46.3	56.3	63.0	75.5	75.7	73.9	74.4	53.4	46.7	36.6
1864	34.0	34.9	37.9	49.3	67.9	70.4	76.1	78.3	67.1	52.2	44.7	33.9
1863	37.2	35.2	37.6	47.7	63.5	67.6	76.7	78.5	61.1	55.6	46.6	35.3
1859	34.2	36.9	48.8	50.8	64.1	69.7	74.5	73.2	66.3	50.4	45.7	33.4
1858	38.6	27.7	39.2	50.9	59.0	73.8	77.2	73.2	65.1	56.8	40.3	38.1
1857	21.9	40.4	38.4	47.5	61.8	72.4	74.3	72.5	66.3	54.2	42.9	38.8
1856	21.9	26.1	33.5	52.9	62.1	75.0	78.9	70.1	66.7	53.8	43.9	31.2
1855	33.8	26.2	39.0	54.7	64.0	70.8	77.0	72.6	67.8	52.0	46.5	35.4
1854	31.8	35.3	43.0	51.0	65.7	72.7	80.0	76.4	70.4	57.1	43.2	31.7

RAIN AND MELTED SNOW.

Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
	Inch.	*Inch.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*
Woodlawn	4.10	3.44	3.21	6.05	5.06	5.81	4.17	3.83	3.56	4.56	2.24	1.84	47.87
Annapolis	3.23	4.52	3.17	5.17	5.33	4.38	5.41	1.77	1.96	3.50	1.82	1.33	41.59
Saint Inigoes	2.45	2.36	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Frederick	3.36	3.42	1.77	5.44	5.06	10.75	.....	.....	.....	.....	.....	.....	.....
Mt. Saint Mary's	3.78	3.70	3.38	5.65	4.37	9.60	3.50	3.28	6.61	1.30	1.83	2.05	49.05
Fallston	.....	.....	.....	.....	.....	.....	.....	.....	4.20	4.20	1.66	2.10	.....
Woodstock College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.22	.....
Average, 1870	3.38	3.49	2.88	5.58	4.96	7.64	4.36	2.96	4.08	3.39	1.89	1.71	46.32
1869	4.35	4.95	4.89	2.54	4.93	2.87	4.02	1.32	3.22	5.61	3.03	6.49	48.22
1868	3.88	2.35	3.13	3.45	6.92	3.46	3.37	4.69	7.10	1.58	5.93	1.91	47.77
1867	1.24	4.65	9.16	2.17	6.59	4.63	3.88	12.97	1.50	4.68	1.96	2.80	56.23
1866	2.27	4.70	1.44	3.65	3.60	8.07	3.99	3.20	8.54	6.53	2.66	3.43	52.08
1865	3.86	4.26	6.39	3.15	6.36	3.78	6.47	3.04	1.81	3.78	4.01	4.96	51.87
1864	2.24	0.71	3.52	6.14	6.19	1.45	1.24	3.61	3.33	2.35	3.15	4.20	38.12
1863	3.98	4.33	3.64	5.13	4.30	2.70	8.05	0.51	0.00	3.21	2.70	4.40	42.92
1859	4.69	3.49	5.42	5.11	3.50	3.60	2.50	2.70	8.40	2.40	1.70	3.70	47.15
1858	1.67	1.64	0.85	3.82	6.70	3.80	3.00	2.60	3.60	3.00	3.80	4.00	38.48
1857	2.88	0.68	1.62	3.12	6.30	8.30	4.40	5.90	1.40	2.40	1.50	6.00	44.41
1856	3.59	0.84	1.78	2.90	3.50	3.00	3.60	5.10	2.20	3.10	2.30	2.80	34.69
1855	3.28	2.07	3.62	1.32	2.60	5.70	3.20	5.70	8.00	3.80	1.50	1.10	41.92
1854	3.79	4.48	1.94	5.10	2.98	3.10	1.81	1.12	3.25	2.99	4.42	4.32	39.30

POPULATION.

The population of Maryland is very small in proportion to its capacity to subsist its people, and yet it is almost as densely settled as Pennsylvania, having 70 inhabitants to the square mile in 1870, while the Keystone State had 76. The total numbers, according to the last census, were 780,894, an increase in ten years of 93,845. The number of the colored class was 175,391 in 1860, and 171,131 in 1870. Of the former number, 87,189 were slaves and 83,942 free. The distribution of population is as follows, Baltimore County having 42 per cent. of the whole:

Counties.	Aggregate.		White.	Counties.	Aggregate.		White.
	1860.	1870.	1870.		1860.	1870.	1870.
Alleghany	28,348	38,536	37,370	Kent	13,267	17,102	9,370
Anne Arundel	23,900	24,457	12,725	Montgomery	18,322	20,563	13,128
Baltimore	266,553	330,741	282,818	Prince George's	23,327	21,138	11,358
Calvert	10,447	9,865	4,332	Queen Anne	15,961	16,171	9,579
Caroline	11,129	12,101	8,343	Saint Mary's	15,213	14,944	7,218
Carroll	24,533	28,619	26,444	Somerset	24,992	18,190	10,916
Cecil	23,862	25,874	21,860	Talbot	14,795	16,137	9,471
Charles	16,517	15,738	6,418	Washington	31,417	34,712	31,874
Dorchester	20,461	19,458	11,902	Wicomico	.....	15,802	11,396
Frederick	46,591	47,572	39,999	Worcester	20,661	16,419	10,550
Harford	23,415	22,605	17,750				
Howard	13,338	14,150	10,676	Total	687,049	780,894	605,497

FARM-PRODUCTION.

The State of Maryland produces a full supply of breadstuffs, and has a small surplus to spare, of quality unsurpassed in the United States. Hay is growing into importance, as the central, northern, and western counties are peculiarly adapted to production of the best grasses and of clover.* Dairying and wool-growing are profitable, and conditions

* In the western part of Alleghany "natural prairie-grass abounds; the pastures are usually timothy, blue-grass, and clover." In Washington, "grasses are rich in fattening qualities; clover, lucerne, and orchard-grass flourish; two to three tons of timothy may be raised to the acre." "Clover, timothy, and herd-grass, or red-top, form the pastures in Montgomery, but unless a rotation of crops is practiced, or the fields top-dressed, briers, sedge, and the ox-eye daisy or Richardson pink obtain possession; blue-grass is found in some pastures where the soil is good." Baltimore county "is not well supplied with natural grasses of good quality; in some localities red-top and blue-grass abound, and in many sections inferior grasses, called wild grasses, are found." Grass-seeds are generally sown in Harford, but "green grass" and clover come spontaneously. White clover, green grass, and herd-grass are found in Cecil, and on low lands along the streams, a variety of meadow-grasses; lands lying out are occupied by a coarse kind of grass called sedge. Clover and timothy are almost exclusively cultivated. Our Queen Anne reporter writes: "On well-improved lands patches of blue-grass root out the clover, and if let alone would soon take entire possession of the field, but is eradicated by a corn-crop. Our meadow-lands naturally produce red-top, wild oats, and a variety of coarse but succulent grasses, of which I do not know the names. Our worn-out lands grow up in sedge, which supplies good early pasture." Our reporter in Anne Arundel County says: "Natural grasses are almost unknown here; crab-grass and woolly-head clover often grow, but are not adequate for pasturage. The soil is well adapted to clover and timothy, producing heavy crops when improved."

Reports from the counties estimate the average length of the pasturage-season at about seven months, at an expense of from $1.50 to $3 per month; Montgomery, six to six and a half months, at $1.50 per month; Baltimore is returned as low as four and a half months, at about $1.50 per month; Cecil, six and a half months, at $2; Kent, seven months, at $3; Saint Mary's, Anne Arundel, and Queen Anne report as high as eight months. From the latter our correspondent writes: "Where a farmer has plenty of woodland, meadow, and old-field pasture, it costs him nothing to raise cattle, as they are not put upon clover until a crop has been cut off or it begins to fall, and they are wintered on coarse provender which they convert into manure."—[Monthly Report Department of Agriculture.]

favorable to their extension exist in nearly all parts of the State. The Eastern Shore is well known to be unexcelled for the production of fruits and vegetables for northern markets. Grape-growing might be an extensive and profitable industry. Tobacco is still a prominent crop, and the reduction in quantity is more apparent than real, the heavy tax having the effect to suppress nearly half the record of production. The following table gives the quantities produced of the principal crops reported in the census:

Products.	1869.	1859.	1869.	1859.	1870.	
	Total.	Total.	Per capita.	Per capita.	Increase.	Decrease.
Wheat ..... bushels.	5,774,503	6,103,480	7.39	8.88	.....	1.49
Rye ..... do....	307,089	518,901	.39	.75	.....	.36
Corn ..... do....	11,701,817	13,444,922	14.98	19.56	.....	4.58
Oats ..... do....	3,221,643	3,959,298	4.12	5.76	.....	1.64
Barley ..... do....	11,315	17,350	.01	.02	.....	.01
Buckwheat ..... do....	77,867	212,338	.09	.3	.....	.21
Tobacco ..... pounds.	15,785,339	38,410,965	20.2	55.9	.....	35.7
Wool ..... do....	435,213	491,511	.5	.71	.....	.21
Pease and beans .... bushels.	57,556	34,407	.07	.05	.02	.....
Potatoes ..... do....	1,632,205	1,264,429	2.09	1.84	.25	.....
Sweet potatoes ..... do....	218,706	236,740	.28	.34	.....	.06
Wine ..... gallons.	11,583	3,222	.01	.....	.....	.....
Butter ..... pounds.	5,014,729	5,265,295	6.42	7.66	.....	1.24
Cheese ..... do....	6,732	8,342	.....	.....	.....	.....
Milk sold ..... gallons.	1,520,101	.....	1.94	.....	.....	.....
Hay ..... tons.	223,119	191,744	.28	.27	.01	.....
Clover-seed ..... bushels.	35,040	39,811	.04	.05	.....	.01
Grass-seed ..... do....	2,609	3,195	.....	.....	.....	.....
Hops ..... pounds.	2,800	2,943	.....	.....	.....	.....
Flax ..... do....	30,760	14,481	.03	.02	.01	.....
Flax-seed ..... bushels.	1,541	1,570	.....	.....	.....	.....
Maple-sugar ..... pounds.	70,464	63,281	.09	.09	.....	.....
Maple-molasses ..... gallons.	374	2,404	.....	.....	.....	.....
Sorghum-molasses .... do....	28,563	907	.03	.....	.....	.....
Beeswax ..... pounds.	3,439	6,960	.....	.....	.....	.....
Honey ..... do....	118,938	193,354	.15	.28	.....	.13

The production of some of the more important crops is thus distributed:

	Bushels of corn.		Bushels of wheat.		Pounds of tobacco.		Tons of hay.	
	1869.	1859.	1869.	1859.	1869.	1859.	1869.	1859.
Alleghany	116,062	161,075	70,404	87,715	.....	2,000	17,263	12,058
Anne Arundel	560,359	630,243	126,451	221,389	3,020,955	6,039,910	2,207	1,743
Baltimore	856,754	1,028,143	264,568	286,351	1,941	8,545	35,791	30,164
Calvert	178,409	272,084	38,623	117,119	3,158,200	6,204,524	371	740
Caroline	342,971	247,455	130,728	57,344	.....	.....	1,013	113
Carroll	716,887	588,725	427,586	323,996	225,800	608,424	30,766	22,988
Cecil	683,683	788,044	365,818	326,667	.....	.....	19,986	18,003
Charles	221,726	319,272	73,028	151,532	2,102,739	4,693,961	987	459
Dorchester	311,039	687,324	122,460	218,422	.....	.....	884	234
Frederick	1,360,420	1,082,903	1,133,623	976,143	274,369	387,100	32,893	32,078
Harford	659,789	735,573	244,835	224,808	.....	.....	16,927	19,284
Howard	415,719	425,727	128,376	151,956	182,980	400,266	7,445	6,801
Kent	723,824	888,900	473,601	312,101	.....	.....	4,286	3,311
Montgomery	638,047	686,843	309,418	341,087	630,000	843,300	12,735	13,167
Prince George's	518,131	699,144	79,706	312,796	3,665,054	13,446,550	6,536	6,328
Queen Anne	605,975	876,405	326,828	291,656	.....	.....	1,302	1,152
Saint Mary's	274,457	437,366	152,630	296,703	2,522,917	5,774,975	662	923
Somerset	251,883	606,733	40,719	138,404	14	260	736	40
Talbot	515,122	679,571	302,078	343,514	.....	1,100	990	794
Washington	737,989	669,322	930,246	882,814	.....	50	29,281	21,352
Wicomico	405,627	.....	12,103	.....	370	.....	30	.....
Worcester	606,944	934,070	20,674	40,963	.....	.....	28	12
Total	11,701,817	13,444,922	5,774,503	6,103,480	15,785,339	38,410,965	223,119	191,744

The total value of farm-productions in Maryland is as follows:

	Total.		Per capita.		Increase.	Decrease.
	1869.	1859.	1869.	1859.		
Annual productions	$35,343,927		45.26			
Orchard-products	1,319,405	$252,196	1.69	.37	1.32	
Market-garden products	1,039,782	530,221	1.33	.77	.56	
Forest-products	613,209		.78			
Home manufactures	63,098	67,003	.08	.09 7-10		.01 7-10
Animals slaughtered	4,621,418	2,821,510	5.92	4.10	1.82	
All live stock	18,433,698	14,667,853	23.60	21.35	2.25	

Number of live-stock.

Counties.	No. of horses and mules.		No. of cattle.		No. of sheep.		No. of swine.		Value of live stock.	
	1870.	1860.	1870.	1860.	1870.	1860.	1870.	1860.	1870.	1860.
Alleghany	4,097	3,706	12,711	13,133	17,232	15,479	8,065	9,975	$829,767	$513,281
Anne Arundel	4,735	4,725	6,928	9,854	5,345	7,267	11,680	16,402	799,384	616,267
Baltimore	9,057	8,890	16,678	16,636	5,511	6,193	18,733	25,280	1,867,543	1,303,873
Calvert	1,893	2,598	4,087	6,418	3,109	4,111	4,723	10,479	284,738	380,338
Caroline	2,683	1,297	5,409	3,364	2,826	1,218	6,672	4,951	412,585	155,113
Carroll	7,011	6,381	14,476	12,730	5,279	5,088	19,265	23,740	1,472,970	784,346
Cecil	5,396	5,114	13,268	15,499	4,579	6,493	9,716	10,968	1,108,396	877,563
Charles	2,467	3,398	6,636	9,629	3,872	5,740	6,978	12,828	384,357	439,283
Dorchester	1,833	2,988	7,682	12,824	4,401	6,540	8,433	18,749	402,849	458,091
Frederick	12,211	11,496	22,095	21,552	9,817	10,389	29,939	40,548	2,054,773	1,534,048
Harford	4,844	5,311	13,306	15,311	5,612	6,305	11,676	16,725	1,152,058	878,736
Howard	3,225	3,171	6,156	6,023	2,516	4,223	8,441	15,626	638,320	455,964
Kent	5,058	4,682	8,736	9,828	6,154	7,563	12,866	11,346	999,742	699,502
Montgomery	5,574	5,819	10,139	11,863	6,812	10,487	13,267	22,823	946,010	852,767
Prince George's	3,966	6,065	6,975	12,183	4,906	8,828	9,045	25,927	659,620	875,317
Queen Anne	4,289	4,959	7,372	10,668	5,373	7,618	9,942	14,848	758,667	627,447
Saint Mary's	2,749	3,801	7,974	11,145	3,982	5,668	11,302	21,728	561,604	546,046
Somerset	1,534	2,669	6,120	11,698	3,199	7,220	7,628	19,236	336,189	466,892
Talbot	3,868	4,242	6,987	9,272	6,044	7,207	9,411	15,691	694,597	601,861
Washington	8,531	8,159	16,333	18,271	9,268	10,460	20,212	29,425	1,311,648	1,056,125
Wicomico	1,972	.....	5,526	.....	5,766	.....	8,822	.....	313,682	.....
Worcester	2,533	3,764	9,765	15,340	8,094	11,668	11,077	20,461	444,199	544,993
Total	99,526	103,235	215,359	253,241	129,697	155,765	257,893	387,756	18,433,698	14,667,853

VALUE OF FARM-LANDS.

The farm-lands of Maryland, returned in 1860 at 3,002,267 acres improved and 1,833,304 unimproved, were valued at $30.18 per acre. In 1870 there were reported 2,914,000 acres improved and 1,598,572 unimproved, averaging $37.75 per acre. The reduction is presumed to arise rather from the abandonment of lands as farms than from incompleteness of the returns. The same cause reduced the area of farm-lands throughout the Southern States, mainly in the item of unimproved land. The increase in value thus appears to have been 25 per cent. in ten years, notwithstanding the changes and disturbances of the war, including the subversion of the labor-system. Not all sections fared alike in these changes. The counties that declined in farm-values are Anne Arundel, Calvert, Prince George's, Charles, and Saint Mary's, though the difference is very slight in most of them.

The highest value is in Baltimore County, $88.98, and the lowest in Wicomico, near the southern extremity of the peninsula. Washington, a rich agricultural region on the Potomac, near the mouth of the Shenandoah, a productive and well-improved county, containing farms some

of which before the war were held at $100 to $150 per acre, was returned in 1870 at $61.58 per acre, a very high average for farm-lands, but less than their real value in this case. The next highest value was $56.34, in Cecil, the northeast corner of the State, a good fruit-region, very accessible. The average in Kent, the next county southward, on the eastern shore, was $53.74; and that in Frederick, next east of Washington, on the northern border, $53.68. Those between $50 and $40 per acre are, respectively, Howard, Carroll, and Harford, the two former west of Baltimore, the latter on its eastern border. Talbot and Prince George's are valued at very near the average for the State. The counties having lands less valuable are, in their order, Queen Anne, Anne Arundel, Montgomery, Caroline, Dorchester, Somerset, Calvert, Saint Mary's, Worcester, Alleghany, Charles, and Wicomico. Alleghany has recently been divided, the western portion being made a separate county, under the name of Garrett.

It will thus be seen the lands of highest price are on the northern border of the State, and those of medium and low price on the eastern and western shores of the Chesapeake. Some of these lands are rich, though, like the tide-water lands of the Atlantic coast generally, a large proportion are only of moderate natural fertility. The facilities for fertilization are remarkable for abundance and cheapness, marl being abundant and near the surface, and sea-weed and fish and oyster-shell lime everywhere accessible and cheap. The following table gives the quantities and prices of lands, as reported by the census, with the value of farm-implements, the latter showing a gratifying increase in this important ameliator of human labor:

Counties.	Acres improved.		Acres unimproved.		Value per acre of farm-lands.		Value of farm-implements.	
	1870.	1860.	1870.	1860.	1870.	1860.	1870.	1890.
Alleghany	106,865	108,388	197,002	180,817	$16 22	$10 91	$128,993	$100,395
Anne Arundel	140,936	144,211	76,022	100,950	29 36	30 64	204,962	189,834
Baltimore	226,040	206,536	101,884	113,021	88 98	70 38	691,153	455,857
Calvert	74,936	81,301	40,047	55,130	18 26	24 97	40,582	64,354
Caroline	109,688	61,101	61,389	31,606	22 60	13 18	112,425	30,315
Carroll	201,533	170,353	56,890	67,145	45 47	31 86	454,590	271,805
Cecil	136,432	141,776	56,910	65,420	56 34	39 42	419,840	287,988
Charles	97,745	106,338	70,950	76,641	15 97	17 68	56,994	89,009
Dorchester	78,265	119,445	63,661	113,482	22 23	15 75	80,540	92,423
Frederick	287,750	271,998	74,781	67,345	53 68	41 63	656,150	441,814
Harford	134,321	139,051	71,995	80,860	45 19	33 80	341,743	268,546
Howard	96,960	110,657	38,120	54,332	45 65	27 36	186,097	139,148
Kent	140,013	132,814	34,924	36,614	53 74	40 59	294,563	132,655
Montgomery	162,143	176,790	80,213	114,814	22 61	20 30	277,808	314,708
Prince George's	125,045	182,468	77,781	99,235	36 27	36 99	159,659	211,971
Queen Anne	141,237	153,113	54,455	62,718	31 59	24 26	201,845	146,075
Saint Mary's	100,656	114,459	94,244	103,062	16 47	20 20	81,735	109,908
Somerset	63,664	118,873	60,419	150,322	22 20	17 18	91,684	91,795
Talbot	106,499	110,483	45,086	55,674	38 58	34 75	155,542	126,950
Washington	178,748	196,503	46,694	43,637	61 58	49 78	504,251	354,938
Wicomico	95,361	.....	90,845	.....	15 47	.....	54,327	.....
Worcester	109,170	155,609	104,260	160,479	16 22	13 47	73,193	90,041
Total	2,914,007	3,002,267	1,598,572	1,833,304	37 75	30 18	5,268,676	4,010,529

The annual production per acre, as deduced from the aggregate value of all farm products and betterments of stock in the several counties is thus presented, each being named in the order of precedence:

	Per acre.		Per acre.
Cecil	$16 77	Prince George's	$10 72
Baltimore	15 25	Alleghany	10 68
Kent	15 07	Queen Anne	10 53
Harford	14 34	Dorchester	10 53
Washington	14 32	Somerset	8 65
Frederick	14 22	Charles	8 42
Carroll	13 49	St. Mary's	8 38
Howard	13 23	Wicomico	7 78
Anne Arundel	13 03	Caroline	7 64
Talbot	11 70	Calvert	7 58
Montgomery	11 38	Worcester	7 53

The last assessment of Baltimore County by the local authorities, in 1865, made the valuation of farms and unimproved lands about $40,000,000. Prices have greatly advanced near the city of Baltimore within a few years. Within a distance of ten to fifteen miles the range is from $100 to $2,000 per acre. Improved farms beyond this limit, with convenient buildings, orchards, &c., command $70 to $200 per acre. Some dilapidated farms are selling below their value, at $30 to $75 per acre. Timber-lands are worth from $50 to $200. Sedge-fields or worn and neglected lands, if not too near towns and railroads, can be got for $30 to $50 per acre. The best soils are of limestone origin, fine for cereals, and worth $75 to $200 per acre. A sandy loam predominates near Baltimore, and is found very suitable for gardening and fruit-growing. A third class is a sandy soil adapted to sweet potatoes and peaches.

From $15 to $20 per acre for medium lands, in 1870, the rates for Montgomery lands have advanced to $20 and $25. Some wild lands can be obtained at $8 to $10. These are in pines or sedge, generally a clay soil, susceptible of improvement at a reasonable outlay. The following description of this county is by Mr. Henry C. Hallowell:

Montgomery County, Maryland, embraces an area of 315,000 acres. It is bordered on the west by the Potomac River, and nearly encompasses three sides the District of Columbia. The Chesapeake and Ohio Canal and the Metropolitan Branch of the Baltimore and Ohio Railroad run through it, and the main stem and Washington branch of the same road are near its northern and eastern borders. Its climate is a pleasant intermediate between North and South, there being sufficient cold to secure an abundant supply of ice and to remove all miasmatic influences from the air. The average of the winters is about 32°, of the summer about 74°, and of the year about 52°. The rain-fall is 44 inches, and the county is remarkably free from hail-storms and tornadoes. Cattle are housed near the last of November, and are turned out to pasture the latter part of April. The surface is rolling, without being hilly. Parr's Ridge gives rise to many fine streams, and throughout there is abundance of water. The Great Falls of the Potomac possess a manufacturing power of vast extent, as yet unused. The soil varies from gravelly, through sandy, to clay and a red loam. In some portions a magnesium-loam crops out, which in other parts is covered by quartz and clay. Fine timber abounds, consisting of oak, chestnut, poplar, walnut, hickory, and maple, the roots of the trees penetrating to the loam. Quarries of sand and other stones are abundant, and some copper and chrome have been mined. It is adapted to fruit of all kinds. Apples, peaches, pears and grapes thrive admirably.

The soil is generally thin, and twenty-five years ago a large portion of the county was uninclosed and uninhabited. It has proved, however, remarkably susceptible to improvement, and a wonderful revolution has been effected. Sections which had been worn out by the cultivation of corn and tobacco, barren and untenanted, washed into gullies and abandoned to pines, scrub-oaks, and sedge, now blossom like the rose, supporting a busy and prosperous population, presenting scenes of rural beauty to the eye, and yielding comfortable incomes to the industrious owners.

There are very many acres of land still unimproved and lying waste, but each added year diminishes the amount. Large tracts within fifteen miles of Washington can be bought at from $5 to $15 per acre. An expenditure of three per cent. of the value of each acre annually for a few years, judiciously combined with careful farming and proper saving of home-made manures, would bring most of it into a good state of cultivation, yielding a comfortable living (after the first year or two) to the family of the occupant, and raising the market-value of the land to from $40 to $50 per acre.

The nucleus of this improvement was probably a section called Sandy Spring, about eighteen miles north of Washington, inhabited principally by members of the Society of Friends, plain, industrious, economical people, with more than average intelligence. The success of their labors was manifested by practical results which soon attracted the attention of observant residents of other portions of the county, and the spirit of improvement, once awakened, spread rapidly, until thousands of hitherto barren acres were reclaimed, and skillful experimenters and careful farmers in many parts of the county equaled and even bid fair to surpass the originators of the movement in their judicious and successful renovation of worn-out lands. This was particularly the case in the section bordering on the Potomac River, where an agricultural society, of which Dr. William Brewer was president, initiated numerous valuable experiments.

The first effort toward arresting the deterioration in the fertility of the soil was made about 1826, by those who directed their efforts toward obtaining a growth of clover by the application of lime. Limestone of a tolerably good quality was found in an adjoining county. This was hauled to the farms, burned, and applied both upon the sod and ploughed ground. A growth of clover being thus induced, (with very varying results, however, upon different farms,) it was turned under, and a gradual improvement in the character and yield of the soil was obtained.

The introduction of ground bone about 1839, and of guano about 1844, effected a revolution in the method of improvement, and the lime-kilns were abandoned. The pioneers in accurate and systematic experiments with the then new fertilizers were Benjamin Hallowell, (formerly of Alexandria, Va.,) Richard F. Bentley, the Stablers, Farquhars, Brookes, and other practical men. Benjamin Hallowell, in the years 1843, 1844, and 1845, tried many experiments with guano, bone, (crushed or ground,) in quantities from 3½ bushels to 30 bushels per acre, ground charcoal, poudrette, and lime. Lime was found to be of little apparent benefit. Charcoal produced no perceptible improvement. Ground bone increased in effect with the amount used, though about 10 bushels per acre was found to be the most profitable application. Peruvian guano was at that day magical in its results, and by it, with the bone, he was able to get his farm into a good sod. This once accomplished, careful farming, and the continued application of fertilizers, and what home-made manure he could obtain, augmented the improvement and increased the annual yield. The guano was applied at the rate of 150 pounds to 300 pounds per acre, with 10 bushels of ground bone, upon the wheat-land when seeded to grass. The field thus treated received no further manuring, save compost or poudrette, in the hill, for corn, until its turn came in rotation to be again seeded. The barn-yard manure was best applied as a top-dressing upon grass. The result of his labors and continued applications by himself, tenants, and sons is shown in the following contrast of the yield of his farm in the years 1845 and 1870. In the latter year, moreover, a large family was being supported, and there was much good stock upon the place, while in the former, some of the articles needed for family use were purchased from neighboring farmers, in addition to the hay and corn necessary for the sustenance of two horses and two cows.

	1845.	1870.
Hay	16 tons	75 tons.
Wheat	41 bushels	360 bushels.
Corn	70 bushels	1,300 bushels.
Pork	1,781 pounds	2,500 bushels.
Other items	$100	$200.
Oats		400 bushels.
Stock sold		$200.

The crop of 1870 was from the same farm, but of course much of it grown upon land that in 1845 was not capable of cultivation from want of clearing, draining, and manuring.

As a further illustration of the results of the renovation of worn-out lands and improvement of that already under cultivation, the following census-returns for 1850 and 1870, for one district of the county, embracing about one-fifth of its area, will be

suggestive. The census was taken each time by the same gentleman, William H. Farquhar, which insures greater accuracy.

	1850.	1870.
Wheat ..... bushels..	23,100	46,700
Rye ..... do....	800	3,410
Corn ..... do....	56,000	107,900
Oats ..... do....	26,600	41,580
Potatoes ..... do....	9,900	77,420
Butter ..... pounds..	38,140	59,140
Hay ..... tons..	1,440	4,209
Value of slaughtered animals	$12,715	$55,560
Total value of farm-products	156,650	390,000
Value of live stock	58,486	184,880
Clover-seed ..... bushels..	.....	273
Value of orchard-products	.....	$11,000

Of the same nine farms in this district, the total value of the productions in 1850 was $10,365, and in 1870 $36,320. The population increased in the same time from 2,786 to 4,700.

These figures show but a part of the wonderful change effected by the improvements alluded to. Land bought for $2.05 per acre, and which was thought by a visitor to the county at the time to be $2 more than it was worth, is now a fertile, beautiful, and popular section, which is not for sale, and would, if sold, perhaps command from $75 to $100 per acre. Turnpike-roads costing from $2,000 to $2,200 per mile have been built, intersecting each other, and leading to Washington, while the earth-roads have been very materially improved. Fine stock of the best breeds have been introduced at a considerable expense. Farmers' clubs, conventions, and associations have been organized, the oldest club having held monthly meetings since its organization in 1844. Our young men rarely leave us, generally taking a portion of the old homestead, and making the part produce as much as the whole once did.

The yield per acre in 1845 on the parts under cultivation was about an average of 20 bushels of corn, 12 bushels of wheat, and from ¼ to ½ ton of hay. It is now about 40 bushels of corn, 20 bushels of wheat, and 1½ tons of hay. Upon some farms, in favorable seasons, there have been raised, per acre, 80 bushels of corn, 40 bushels of wheat, and 2½ tons of hay.

The ease of access to Washington and Baltimore, and the substantial results of the aforementioned attempts to improve the fertility of the soil, the gently undulating character of the country, the healthy location, pure water, and fresh air, have all tended to draw attention to our county, and many citizens of Washington, Baltimore, and other places have purchased farms and settled permanently or for the summer within our limits.

Some farmers who had thought of emigrating to the West have concluded, after visiting the States beyond the Alleghanies, that the same industry, economy, and outlay which would be necessary there would give them equal pecuniary returns here, with all the added advantages of an older civilization and the inestimable privilege of remaining among friends, relatives, and old associations.

Mr. R. T. Bowne, of Harford, reports prices lower than in 1870; farms that brought $40 per acre being now estimated at $30, and wild lands then worth $18 are now estimated at $14. The surface is well wooded and watered, and fine water-powers are abundant. The portion bordering on the Chesapeake is comparatively level, with soil of light loam, and others in which clay predominates; other sections quite undulating. It is estimated that about one-fifth of the farms are for sale at something like the above figures.

One-third of the lands in Carroll can be purchased at the present time at low rates. The "worn-out" or unused fields can be had at about $10 per acre. It is hilly and somewhat rocky, drained by the tributaries of the Patapsco and Monocacy.

Frederick is a fine farming county. The clay soils of Middletown Valley and the limestone of the Frederick and Manor districts produce

almost equally well with good cultivation. A yield of 80 bushels of corn per acre and 40 of wheat have frequently been obtained, and a few extra farms have exceeded these figures. About one-fourth of the farms are now for sale. Really good farms in the best limestone districts command $88 to $90; in clay soils, generally, $65 to $70; red lands and slate soils, $8 to $40; mountain and hill lands, $10 to $20.

Howard belongs to the northern division of the State, lies west of Anne Arundel, between the rivers Patapsco and Patuxent. It has an undulating surface, a variety of soils, and quite a sufficiency of worn-out lands, which might be improved by judicious farming and made profitable. They can be had at $10 per acre. Mr. D. Lawrence, of Howard, thus describes the farming-lands of that county:

Sandy soil with poor capabilities, except under very expensive and protracted and unremunerative treatment; these are, of course, prohibitory in their operation. Such lands are practically out of the market; too poor to live on—not much of this kind, though—and being near railroads, has some value, $8 or $10 for sites, but no agricultural value. 2. Sandy loam clay subsoil, capable by judicious treatment, clovering, plastering, boning, green manuring, of yielding maximum crops—30 bushels wheat, 2½ tons hay, 10 to 15 barrels of corn, 2 hogsheads tobacco, 70 bushels oats, 250 to 300 bushels potatoes. This is the micaceous soil, and includes the old fields and three-fourths of the county under cultivation. It is, in my judgment, the best soil in the world when properly treated. Old fields worth $10 or $12 per acre; good land and buildings, $50. There is not much of the latter, however, comparatively, which makes the average low, as given in my answer to the first question. The third quality is the gneiss-rock soil. This rock contains hornblende, whose decomposition affords lime and feldspar, yielding potash by decomposition; naturally a richer soil than the micaceous, but more difficult to work; a heavier soil, and wherever found in our county showing good culture, good buildings, rural adornment, agricultural life, and refinement. Its location, however, near the railroad and city, acts, of course, powerfully in producing this condition of things. Worth from $30 to $100 per acre, according to location. One-half the owners would sell at an average of $50 per acre for gneiss soil within three miles of railroad; $20 per acre for old fields, (micaceous;) $20 per acre for sandy soil; $30 per acre for micaceous soil, improved. These represent owners' average prices, what they would take, but there are very few sales.

Coming to the western counties, Washington stands very prominently at the front, its best lands worth $80 to $100 per acre, and medium farms about $50; while the unoccupied and unimproved lands of poorer quality command but $10. Some timber-lands are quite valuable. The limestone soils are the most productive. This county extends from the ridge of South Mountain westward, between the Pennsylvania and Virginia lines, the narrowest portion of the State, at one point but a few miles in width. This county and Frederick, which adjoins it on the east, are the best wheat-counties in the State, and it would be difficult to excel them in the United States.

Alleghany is a mountain county, with lands of rough surface, low in price, and productive of hay and grain, and all farm-products of New England and New York. It is a region noted for its "glades-butter" and "mountain-mutton." Some of the valleys are broad and fertile.

Garrett County occupies the northwest corner of the State. It is a new county, its area having been detached from Alleghany. Farms in good cultivation are worth $20 per acre, and wild lands about $8. The postmaster at Oakland, Mr. Ralph Thayer, thus writes of the soils:

We have black mold, the red or chocolate-colored soil, also the pale slate-colored, and in certain sections limestone clay, and on our rivers alluvial formations partaking largely of sand. All the above-described soils produce satisfactory returns when properly cultivated. Wheat from 20 to 30 bushels per acre, rye from 16 to 25, oats from 30 to 40. Buckwheat same as last estimate. Corn from 30 to 50 bushels per acre. Potatoes from 200 to 300 bushels per acre. Timothy and clover thrive and produce well. In the middle and northwestern portions of the county some good tracts are for sale, but what proportion those bear to the amount not for sale I cannot answer.

Mr. Frank A. Bard estimates the value of lands in Anne Arundel, which prior to the war commanded $100 per acre, at $40, and thinks $20 a fair average for the county at present. Wild lands, which are very limited, may be had at $10. A few valuable "truck"-farms will now sell at $100. He deems these lands wonderfully well adapted to small fruits and vegetables, and thinks nine-tenths of the farms in the county are for sale.

The great staple of Calvert is tobacco, but the cultivation of fruits is at present attracting much attention, are very productive, and quite profitable. The prices of lands range from $4 to $40 per acre.

There is a great variety of soils in Prince George's. On the rivers there is a very fertile soil, a dark loam, very easily worked and quite productive. The central ridge, between the rivers, is stiff and clayey, less productive and of lower value, generally covered with oak forests. They produce good crops of wheat and grass when properly enriched. Mr. H. H. Pfeiffer thinks present owners would probably part with half their lands with the prospect of securing good neighbors.

Much of the soil of Charles is a clay loam. The alluvial soils are very productive and easily worked, producing large crops of tobacco and corn. Mr. M. Chapman says that 40 to 60 bushels of corn per acre can be grown on the best lands; a ton to one and a half tons of timothy hay, and 12 bushels of wheat, for the latter of which the soil is less suitable than for some other crops. He thinks one-half the land can be purchased at prices ranging from $3 to $20 per acre.

Lands on the water-courses of Saint Mary's are estimated by Mr. John M. Brome at $30 per acre, and uplands at $10. He says that much of "the soil is alluvial, easily cultivated, clear of stone, easily improved, and healthy as any part of Maryland;" that every fourth farm is for sale at prices ranging from $10 to $60, and that the natural facilities of Saint Mary are "as great as those of any county in the United States." The following account of the topography and resources of this county is received from Mr. H. D. Smith:

A press of business has prevented an earlier compliance with your request for information in regard to the agricultural and other features of that portion of Southern Maryland embraced in the lower part of Saint Mary's County, defined by a line running from Saint Mary's River across to the mouth of the Patuxent River and bound by the Chesapeake Bay and Potomac River to their confluence at Point Lookout. From the "crop country" line southeast, a distance of about ten miles, to the "Ridge," the country is composed mostly of elevated plateaus of land, gradually descending to the east and southeast and northeast on the bay side; soil rather light clay, growing more heavy until the ridge is reached, which is a narrow strip of slightly elevated and sandy land extending across from the Potomac to the Chesapeake. This land would be admirably adapted to gardening purposes, and the "truck" would find a ready sale at the bathing resort five miles away, at Point Lookout. From the ridge to the extreme southern point, or Point Lookout, the soil is dark clay, very "stiff" and almost perfectly level. With proper attention to the opening of ditches it is easily worked and very productive, admirably adapted to wheat and grass; the fence-corners on the roadside showing a fine sod of blue-grass and white clover. Indeed, throughout this whole region, although there is no attention paid to a systematic seeding of the grasses and clover, the old fields soon assume a good mat of green pasturage if not too closely grazed; especially is this the case where lime has been used. There is very little stone or gravel, if any, to annoy the cultivator. The general course of cultivation here is to devote all the manure made on the place, and most of the time and capital, to a small patch of tobacco. Such time as can be spared is devoted to putting in so much corn as the owner can "break up" for the corn, to be followed by wheat, which is sown late to escape the fly. If pasturage is short the wheat is grazed until it shows signs of "jointing," and the stock is turned on again immediately after harvest, and this field is allowed to "rest" by being grazed as long as the grass or clover shows itself. If any grass or clover is sown with wheat it is very sparingly applied. There are a few rare exceptions to this rule of procedure. Within the last two years there have been some experiments tried on a small scale with home-made fertilizers, liberally used,

with a free use of timothy and clover-seed; the result of which will create a change in the system of some of the more enterprising. A great portion of the farms either have some portion of the bay-coast, river, or inlet of salt-water. The winds and tide deposit large quantities of sea-weed and ooze. The inlets are full of a muck rich in marine decompositions, and most of the woods are full of decayed leaves and vegetable matter, in many places 12 to 15 inches deep. Then, again, at seasons the waters are swarming with alewives, a small fish largely used in some localities for the production of oil, the "scrap" of which makes a fertilizer of well-known merit. Oyster-shells can be had in endless quantities. The lime is used in composts of the sea-ooze, leaves, and vegetable matter, which compost is seasoned with the fish-scrap, and applied broadcast to the ground after plowing, and worked in with the harrow. The indications are that in this way, by a comparatively very small outlay, the lost elements of the soils are restored to their original fertility. The dried scrap, under the name of fish-guano, is sold at $15 per ton, and an application of 250 to 300 pounds per acre, (without being composted as above,) when applied to corn, produced a marked improvement over even a liberal application of stable-manure, and when seeded to timothy continued to show like results.

Improved farms, *i. e.*, farms with fair fences and comfortable and spacious buildings, can be bought for $10 to $30 per acre, with all necessary timber. The higher-priced ones are those that have oyster-coves. The waters abound in oysters and other shell-fish, crabs, terrapin, wild fowl, and the best of fish.

The staple productions are tobacco, wheat, and corn. A limited quantity of beef is shipped, and a few sheep are kept on nearly every farm. Sheep do remarkably well here, the stock being very healthy and the wool finding a ready market in Baltimore, and lambs selling in Baltimore and Washington at a high price. The principal timber is white and yellow pine, oak, gum, walnut, beech, and holly. With the exception of the Hessian fly, there are few insects to injure the crops. Fruits are neglected, but enough is cultivated to prove they would do well if tried. Mr. Logan Smith, near Point Lookout, has 500 peach-trees in full bearing and looking thrifty and in good health, although neglected. An examination of most of the apple-trees seen in my tour failed to discover a case of the borer's ravages, that almost universal pest of the southern apple-orchardist. I saw several specimens of very old pear-trees, probably planted more than one hundred years, much neglected, but still bearing fruit; also saw several "damsons" with no visitations from the "little turk." The health of the region is good, very little malaria, and typhoid fever is unknown.

In conclusion, the result of my observations here for the past year induces me to believe there is no more desirable locality for the establishment of an agreeable and pleasant home than Southern Maryland, and especially the lower portion of Saint Mary's county. The healthfulness, cheapness, and quality of land, and ease of cultivation, great variety of productions of which the soil is capable, abundance of fertilizers, the multitude of luxuries of land and sea, convenient and cheap communication with city markets, the delightful climate, cool salt sea-breezes of summer and open winters, certainly make it a favored region for the agriculturist of wealth or limited means who desires to live under his own vine and fig-tree.

It will be seen from the table that not only the prices of land in the Eastern Shore section are quite high in the northern part, though low at the southern extremity of the peninsula, but the value of annual production is highest in Cecil of any county in the State, and nearly as high in Kent. It is a region of great resources and large capabilities, in which climate and water-transportation play an important part.

Cecil is at the head of Chesapeake Bay, and is intersected by Elk and North Rivers. The soil of the northwestern portion is granitic. Mr. A. De Witt thinks values have declined since 1870, prices now ranging from $10 to $100. There is some marsh-land, valued at $15 to $20, for pasture. The best land is in the western border, and on bottoms, but all requires fertilizing.

Kent lies between the Chesapeake and the line of Delaware, with the Sassafras River as its northern boundary and the Chester as its southern. It has a rolling surface and a soil of medium quality, susceptible of high improvement. Mr. John W. Collins estimates the usual yield of wheat at 12 bushels, running from 6 to 25. He thinks two-fifths of the land could be bought reasonably.

Queen Anne is a central county of this belt, lying between Chester River on one side and Caroline and Tuckahoe on the other, with an undu-

lating surface, free from rocks, reasonably fertile, with abundant underlying deposit of marl. Prices have declined somewhat since 1870. A red-clay soil yields 20 bushels of wheat, 40 bushels of corn, and from 1½ to 2 tons of hay; a heavy white-clay, 15 bushels of wheat and 1½ tons of hay; and a yellow soil is found to be especially adapted to fruits. One-sixth of these lands, mostly unimproved, could be bought at $15.

Caroline and Talbot come next on the south, separated by the Tuckahoe. Talbot is on the Chesapeake, and the Choptank separates it from Dorchester on the south. Three-fourths of the lands of Caroline could be purchased at prices ranging from $10 to $100. The tracts are not offered in parcels, and purchasers are mostly from Pennsylvania and Vermont. Mr. Howes Goldsborough says a red-clay soil, which is easily improved, has produced 60 bushels of wheat per acre. Improved farms range in value from $20 to $125 per acre. Dorchester has a clay-loam soil, light in one section and stiff in another, productive with judicious fertilizing. Prices of farms range from $10 to $50 per acre. Three-fifths of the lands of Worcester, which are very similar to the above, are for sale at $3 to $25 per acre. One-fourth of the farms of Somerset are for sale at $5 to $40. Mr. G. W. Parsons thus writes concerning Wicomico:

From observation and inquiry, I conclude the average cash-value of farm-lands in this county to be $11 per acre, against $15 in 1870. Average value of wild and unimproved lands, $9; in 1870, $12. Lands have depreciated fully one-half since 1867, and nearly one-third since 1870. There are many varieties of soil in this county. Along the Nanticoke River, on the northwest, for from one to three miles, the land is sandy, and gradually changes to yellow clay and loam, with stretches of black soils or "savannas" at intervals, running down to the many creeks which are tributary to the Nanticoke. This river, with the creeks and Wicomico River, are bordered with marshes, which furnish good pasturage. The sands produce splendid watermelons and corn; the clays, wheat and corn, with clover; and the black lands, corn, oats, and clover. The central portion of the county is light sand, sand and clay, and loam; brings corn, truck, small fruits, peaches, and, though naturally the poorest, is the most profitable portion of our land. The eastward portion of the county, bordering along the Pocomoke River, is black swamp-land; brings excellent crops of corn and oats, and in many localities clover and other grasses. Requires drainage and lime to make it produce splendidly. Perhaps one-half the land in this county is for sale. Farmers have made the mistake of holding too large farms. They are finding it out, and are disposed to farm only what they can do well. The prices of land will vary as to soil and location and quality of timber. Good-timbered land is valuable when located near water-course or railroad, and will vary from $20 to $50 per acre. Farms, partly under cultivation and part wild, vary from $5 to $20 per acre in the country, while within three miles of this town farm-lands sell, according to size of tract, from $20 to $150 per acre.

FACTS FROM VARIOUS SOURCES.

FRAUDS IN THE JERSEY-CATTLE TRADE.—Henry Fox, esq., United States consul at Plymouth, England, whose jurisdiction includes the island of Jersey, transmits to the Department of Agriculture a letter from Charles P. Le Cornu, vice-president of the Royal Jersey Agricultural and Horticultural Society, inclosing the following extract of the proceedings of that society at its session of May 15, 1875:

The secretary having read to the meeting a letter from Mr. N. Pike, of Winthrop' Kennebec County, State of Maine, United States of America, as well as the Augusta Maine Farmer of April 17, 1875, in which it is reported that 3,000 cattle are annually sent from this island to the United States of America; it was proposed by E. Nicolle, esq., seconded by A. Le Gallois, esq., and

Resolved unanimously, That a representation be transmitted by the president of this

society to the vice-consul for the United States Government in this island, with a request that it be transmitted to the Minister of Agriculture, showing that, whereas, from the statements above mentioned, it would seem that a fraudulent traffic has been carried on by *soi-disant* importers of Jersey cattle, the number said to have been introduced into the United States being considerably in excess of the whole number exported from this island within the period specified; that from the said statements it must be presumed that other than Jersey-bred cattle are introduced into the United States as such—a practice which if not checked would soon prove seriously detrimental to the reputation of an insular stock, producing disappointment to the purchaser, and ultimately tending to stop the legitimate trade which has long existed between American purchasers and breeders in this island.

Further, with a view to check any fraudulent traffic of the sort and to enable such as may desire to obtain the pure stock from this island, it was

Resolved, That the assistance of this society be given to any person or constituted body whose application to it is officially recommended.

FRA. LABEY,
Hon. Secretary.

STATUS OF AGRICULTURE IN ENGLAND AND AMERICA.—The Liverpool Daily Courier, in a highly commendatory notice of the reports of this Department, notes the remarkable contrast in the popular estimate of agriculture in England and the United States. It says:

American agricultural interests are well cared for, being watched over by a State Department which in various ways manifests deep solicitude for the farmer's welfare. On the other side of the Atlantic it is not so fashionable as here to ridicule the cultivators of the soil or the breeders of cattle. Here [in England] the notion is steadily developing that it is commerce, and not agriculture, which provides food for the millions, and the farmer is considered a selfish non-entity, who is regardful only of his own interests, a weakness to which manufacturers and merchants never descend. In America, farming is recognized as a useful occupation, and will continue to be thus esteemed till the great Republic is planted as thickly as England with smoke-begrimed factories and cottages. The State Department which watches over American agriculture is not a paternal institution to worry farmers, but it collects and disseminates very valuable information over the vast area of the States. Its monthly and annual reports are not simply great arrays of figures, laboriously gathered and piled into bewildering columns, which tell only half the story they were intended to convey, and this long after the statistics can be of much practical use. They promptly provide useful returns and hints. The meaning of the figures is made apparent so that the agriculturist can deduce important lessons. Estimates of experts as to actual facts are supplied. In England there are many journals devoted to agriculture, but the information does not bear the official stamp, and is not invariably trustworthy, while the figures from the British Statistical Department reach the public much too late. A monthly system as well as the annual one would be a boon to British agriculturists as well as to others.

ENGLISH STALLION-PURCHASING SUBSCRIPTION.—Lord Calthorpe has inaugurated a project for raising £10,000 in annual subscriptions of £100 for five years, to accumulate a fund for the purchase of ten or more per annum of thoroughbred sires of sound constitution and good action, such as no private capitalist would find it profitable to purchase. These stallions are to be placed each year in a district to be selected by a judicious committee, and travel through it for the purpose of serving half-breed mares only. At the end of five years, fifty choice stallions, purchased by the association, would have begotten five thousand foals of superior mares. This would have a powerful influence in elevating the breed of horses in the country.

UTILIZATION OF SEWAGE IN ENGLAND.—The local committee on hygiene in Croydon, Surrey County, England, have, after long discussion, pronounced in favor of the irrigation system in the disposal of sewage. Experiments upon the farm of Beddington, extending over fourteen years, show that upon land advantageously situated, surface irrigation permits the purification of sewage-waters without injury to the sanitary condition of the neighborhood. A population of 55,000, using about 20,000 water-closets, furnish a vast amount of organic manure, which, with a fixed proportion of rain-water, is carried by a large drain about

half a mile from the city into large reservoirs of filtration. A paddle-wheel furnished with screens pierced with nails and turned by the motion of the drain-water, seizes the paper, rags, &c., and allows the finer detritus to deposit itself in a blackish sediment in the farm-trenches and upon the surface of the fields and meadows. The malarial exhalations are neutralized by chemical methods.

MEAT-PRODUCT PER ACRE.—Mr. J. J. Mechi, one of the leading scientific farmers of England, considers meat-making one of the main points of his agricultural success. He regards it as an essential part in good farming, to make meat and manure in summer as well as in winter. This, however, cannot be done without shelter for animals, combined with good ventilation to protect them from flies and other insects; with proper provision for this necessity, he has succeeded in putting on both growth and fat in summer-time. He acknowledges that there is no profit in feeding stock at market-prices, but where a farmer has sufficient capital and knows how to use it, he will find stock-feeding profitable, on account of its sure product of the best and cheapest manure he can obtain. Mr. Mechi finds his margin of profit in the very large grain, root, and green crops which he is thus able to raise at a cost below market-prices. He gives the following balance-sheet of his live-stock operations for 1874 on his farm of 175 acres at Tiptree:

January 1, 1874:			
Value of live-stock, including poultry	£737	19	0
Corn and hay, the produce of the farm, consumed during the year, estimated at market-prices	177	5	0
Corn, oil-cake, malt, culms, bran, &c., purchased	431	5	3
Grinding corn, medicines, veterinary, &c	21	0	0
Live-stock purchased during the year	239	8	6
Green and root crops of 25 acres raised and consumed	88	6	2
Total	1,695	3	11
January 1, 1875:			
Value of live-stock, including poultry	£926	2	0
Fat meat sold	691	19	2
Wool sold	43	14	10
Poultry sold	33	7	11
Total	1,695	3	11

The increase in value of the live-stock and poultry at the end of the year was £188 3*s.*, or £51 5*s.* 6*d.* less than the amount paid for new animals during the year. This deficit shows the extent to which the whole live-stock value, old and new, was reduced, and must be deducted from the aggregate sales to show the net meat-product of the year. This will leave £684 8*s.* 6*d.*, which, at 9*d.* per pound, gives an average of 104 pounds of meat per acre, worth £3 18*s.* The total cost of feed, including produce raised on the farm and purchased from without, amounts to £717 16*s.* 5*d.*, from which deducting the wool sold, £43 14*s.* 10*d.*, there remains £674 1*s.* 7*d.*, or £3 16*s.* 4½*d.* per acre as the actual cost of production, leaving a margin of only 1*s.* 7½*d.* per acre to pay for labor and attendance, which is estimated at £100 in the aggregate, or 11*s.* 5*d.* per acre. Mr. Mechi's profit, then, must have been in the raising of his home crops, and in the fertilizing elements added to his land by his abundant product of manure.

FRENCH FARM-PRODUCTS OF 1874.—The first half of 1874 was marked by high prices and a large importation of cereals, but the subsequent six months witnessed a reaction, which extended into 1875, toward low prices and large export. The large crops of last year in Europe, com-

pared with preceding failures, account for this change. The movement of the year is indicated by the importation of 4,500,000 quintals of wheat during the first six months, and the export of 1,500,000 during the remainder of the year. The fine barley-crops of Sarthe, Mayence, and the Loire Valley were largely purchased by the English brewers, while less valuable grain was imported from the Danube and Algeria to supply the home demand.

The British Isles and Belgium largely absorbed the abundant fruit-crop. The export of fresh vegetables was 25 per cent. greater than in 1873. Salad and cabbage were shipped by rail even to Russia.

The greatest portion of French agricultural products were marketed in England. Of 29,000,000 kilograms of eggs, of poultry, and wild fowl exported, England took 27,500,000; and 28,333,000 kilograms of salt butter of a total export of 32,333,000 kilograms. There was also a considerable export of fresh butter and of cheese; but at the close of the year the prices of cheese had fallen 10 per cent.; of eggs, 7 per cent.; of butter, salt and fresh, 6 per cent. Milk-products had received a great impulse in 1872, but the increased cost of forage, the deficiency of grain, and the ravages of epizootic maladies greatly restricted production, and would have had a still more depressing effect but for the strong English demand raising prices.

Of live stock, the imports of beeves amounted to 24,483 head, against 57,623 in 1873; and 46,868 cows, against 51,958 in 1873. Of sheep, the imports amounted to 1,139,179, a decrease of 339,572 from 1873. On the other hand, the exports of beeves amounted to 25,358, an increase of 6,485; and of cows, 24,575, an increase of 5,899. The great scarcity of forage in 1874 emptied the French stables and sheep-folds of all beasts not indispensable for market and farm stock, but choice fat animals held their own remarkably well.

The average losses from depressions of market-price of different classes of farm-animals, according to the official estimate of the national commission, were as follows: Sheep, 9 per cent.; lambs, 16 per cent.; beeves, 9 per cent.; bulls, 23 per cent.; bullocks, 25 per cent.; cows, 17 per cent.; heifers, 25 per cent.; calves, 5 per cent.

Of horses, the export of 1873 was 22,096, which increased in 1874 to 22,680. The average of ten years, from 1862 to 1871, was about 9,000. Light draught-horses are especially in demand by foreign purchasers. France, in 1873, exported 3,886 horses to Germany, and received in return 3,023; in 1871 this export rose to 4,579, and the import to 3,323.

The foreign-trade movements of the first six months of 1875 have also been published, from which it appears that the import of cereals had fallen from 196,261,000 francs to 72,981,000 francs; wood for building, from 38,000,000 to 29,000,000; flax, from 30,000,000 to 28,000,000; oleaginous fruits, from 19,000,000 to 18,000,000; guano and other fertilizers, from 20,000,000 to 15,000,000. The export-trade shows an aggregate of 41,000,000 francs in wool, a decline of 7,000,000; farm-animals fell off from 23,000,000 francs to 21,000,000. An increased export is shown of wine of 141,500,000 francs against 122,000,000; of cereals, 121,000,000 against 37,250,000; of brandy, 42,000,000 against 18,000,000; of poultry-eggs, 26,250,000 against 22,000,000; of raw sugar, 26,000,000 against 19,333,000 in the first six months of 1874. Butter remained nearly stationary, reaching about 38,000,000 francs in both periods under review.

ALFALFA IN TEXAS.—One of our statistical correspondents, Mr. W. W. Ross, of Dallas County, Texas, finds that alfalfa admirably withstands the drought of summer and the cold of winter. He mowed a field three times last season—April 10, May 3, and June 4—and obtained two

tons per acre at each cutting, or six tons per acre for the season. He thinks it admirably adapted to the black prairie-land of that region. It keeps green all winter, and affords pasture to all kinds of live stock, except hogs.

THE FRENCH WINE-CROP.—Notwithstanding grave apprehensions expressed by men of intelligence and of high position in France in regard to the wine-producing interest, the crop of 1874 has aggregated 63,000,000 hectoliters, or 1,664,000,000 gallons, being nearly 640,000,000 gallons more than in 1873, and nearly 450,000,000 above an average yield. The high prices induced by the short crops of 1872 and 1873, together with the heavy burdens of taxation necessitated by the Franco-Prussian war, greatly restricted wine-consumption, but with the marketing of the large crop of 1874 consumption greatly increased. The prospect of a large crop in 1875 tended still further to depress prices. In some parts of Central France, favored by circumstances, wine-makers realized from 35 to 40 francs per hectoliter, (27 to 32 cents per gallon,) but in some portions of Southern France prices of wines marketed during the late floods sunk to one-fourth and even one-eighth of the above. But the ravages of the *Phylloxera* caused a prompt reaction. The product of whole departments, such as Vaucluse, was totally ruined, while others were seriously and even permanently injured. At one time the whole wine-interest of Southern France was threatened with destruction. This region is usually counted on for a third of the crop. In 1874 five departments yielded about 19,000,000 hectoliters, or nearly 502,000,000 gallons. Of these the largest product was in Hérault, amounting to 15,000,000 hectoliters, (397,000,000 gallons.) Aude yielded 3,000,000 hectoliters, (nearly 80,000,000 gallons.) These two departments alone furnished a fourth of the crop of 1874. These southern wines, however, are not satisfactory in quality, while those of Lower Burgundy, Cote-d'Or, Beaujolais, Bordelais, and Dordogne show an improvement over the yield of 1872 and 1873.

The short crop of 1873 caused a decreased export of wine in casks and bottles, in the Gironde alone, of 216,163 hectoliters, (8,333,000 gallons.) The decline in the exports in casks to different countries ranged from 4 to 9 per cent.; of wines in bottles the decline was 8 per cent., and of sweet wine 10 per cent. Of other wine-regions the decline amounted to 476,225 hectoliters, (12,500,000 gallons,) bottled sweet wine falling off 112,940 hectoliters, (nearly 3,000,000 gallons.) The French National Commission notes with pleasure the products of French vineyards, but does not dissemble the fact that the products of Spain and Italy are entering into formidable competition with the southern departments.

AGRICULTURE IN ALGERIA.—Algeria extends along the south Mediterranean coast about six hundred miles, with an area of 116,000,000 acres, or 181,000 square miles. Of this region, what is called the Sahara Desert occupies five-sixths; the remaining sixth, called the Tell, is the maritime, agricultural, and colonized zone, producing the plants of Southern Europe, such as cereals, vines, olives, mulberries, oranges, dates, and other fruits.

A French scientific agriculturist, M. Moll, has given the results of a personal tour of observation in a work entitled "Agriculture and Colonization of Algeria." He criticises the French policy of occupying the country, not for strong concentrations upon the coast, but for failure to make adequate efforts also to occupy the interior. This of course could be done only by military power and a military government. A civil government over such a country is simply an impossibility. The peculiar

character of the population—Moors, Kabyles, Jews, Arabs, &c.—demands special adaptation of means to ends in fixing a foreign colonial establishment upon the soil.

M. Moll is one of the originators of the great agricultural reforms which have been effected in France during a quarter century past, and has endeavored to apply to the consideration of Algerian agriculture the results of his enlightened labors. He would restrain the tendency to crop-raising fostered by the colonial authorities, and rehabilitate the pastoral *régime*. He advises the raising of large flocks for a good market from the spontaneous grasses of the country, together with tree-culture and the re-afforesting of denuded areas. In the southern deserts there are oases, garden-spots, where intensive culture may reach its highest results, but in the great breadth of the territory, where communications are difficult, flocks and herds alone can find a subsistence. The maritime region, the Tell, is susceptible of more systematic culture. Labor is here abundant and the facilities for irrigation considerable.

In the three departments of Algiers, Oran, and Constantine, 1,096 allotments of land were appropriated by colonists in 1875, of which 896 were village-allotments, and 200 in farms. These allotments were also divided into civil and military, according to the legal status of the colonist. Of these, 263 were awarded to emigrants from Alsace and Lorraine; 488 to emigrants from other parts of old France; and 345 to Frenchmen and Europeans born in Algeria.

Rent-unions in Bengal.—Co-operative association has assumed a remarkable phase in the "rent-unions" of Bengal, India. This institution subsisted under the presidency of the notorious Warren Hastings, and even then presented a troublesome case for his very summary methods of administration. On late years it has become quite a power in Indian politics.

The Indian landed system is one of a feudal character, derived from the old native *régime*, whether Hindoo or Mohammedan, and retained in many provinces by the English authorities. The zemindars or primary government tenants, in law, are under but little practical restraint from the most grinding oppressions of the cultivators of the soil. To counteract the reckless greed of the zemindars, the farmers have organized rent-unions, which are inaugurated in each rural district in a very characteristic manner. In every Bengal village the popular party is organized under a *punchayet*, or assembly of five head-men. When, in the judgment of this body, it is found necessary to resist fresh impositions of the zemindary interest, a union is established. It is designated as *vidroti dal*, which means literally an opposition league. The ryots or farmers are then invited to join it, but there is always a considerable minority that refuse to co-operate with the movement. The majority are secured before any open demonstration is made, and bind themselves in solemn deeds of writing to give their best energies to the work. The campaign is opened by a petition to the magistrate to protect the ryots from alleged oppressions of the zemindars. The latter have generally a very vulnerable record, and greatly dread judicial investigation, and hence often haul down their colors and abandon abuses complained of on condition of suspension of operations by the union. If, however, the zemindar is impelled by pride or policy to resist their demands, the ryots fix upon a tariff of rents which they promise each other not to exceed. This tariff is generally the old rate, leaving out the attempted illegal enhancement. If the zemindar fails for six months to enter suit to enforce his additional exactions, his subsequent proceedings are barred

by a statute of limitations. If suit is brought claiming merely the rent and deposit, together with the enhancement which might be justifiably claimed from the enhanced value of land or other circumstance, the enhancement is sure to be disallowed. If he attempts to bolster up his claim by false accounts, which are sure to be detected by the defendant's lawyers, the feeling of the court turns against him, and he is limited to barely what the ryots are willing to pay. Hence, the process of the courts finds little favor in the eyes of the zemindary interest. The sympathy of the courts appears to be strongly with the popular interest.

The zemindars then resort to questionable strategy. They attempt to create dissension among the ryots and even to buy up the headmen. Sometimes the cashier of the union embezzles the funds, but this exposes him not only to legal prosecution, but also to the dread of popular indignation. If everything else fail, the zemindars import mobs, generally from the Jessore district, to crush the ryots. Generally the latter are too powerful, and the mobs are dispersed. In an appeal to the police, the zemindars, from the peculiar structure of Anglo-Indian jurisprudence, generally have the advantage.

The question of suppressing these unions by law has been seriously entertained by Anglo-Indian officials, but such a course would most probably be defeated. Official observers say that the effect of these unions is beneficial to public order; that though they lead to many collisions, they prevent a still greater number. Riots are most frequent in those districts where the sway of the zemindary interest is least impeded by unions. The whole difficulty arises out of a false system of social organism—that of crown tenancy of the lands. Even antiquated Indian civilization is outgrowing the swaddling-bands of feudalism. Allodial land-ownership, giving the soil as far as possible into the hands of actual cultivators, is the true policy.

The weight of opinion is in favor of sustaining the independence of the ryots, and of still further protecting them against the exactions of the zemindars.

LIVE-STOCK MOVEMENTS AT CHICAGO.—George T. Williams, secretary of the Union Stock-Yards Association of Chicago, has furnished the Department with a statement showing the receipts and shipments of live-stock during the first six months of 1875, from which the following figures have been condensed:

Of cattle, the total receipts were 466,833 and the shipments 378,563; of hogs, the receipts were 2,002,484 and the shipments 911,598; of sheep, the receipts were 226,785 and the shipments 149,117; of horses, the receipts were 9,098 and the shipments 8,822.

Of cattle, the great mass of the receipts was by roads from the West and South, and the shipments mostly eastward. Thus, the Chicago, Rock Island and Pacific road brought in 87,501 head and carried away only 2,261; the Illinois Central brought in 82,222 and carried away only 9,431. The heaviest receipt, 139,952 head, was by the Chicago, Burlington and Quincy, while the shipment was only 2,861; the Chicago and Northwestern imported 66,834 and exported 1,886; the Chicago and Alton brought 55,574 and took away 6,052. Of the exporting roads, the Pittsburgh, Fort Wayne and Chicago brought in only 905 and carried eastward 101,897; the Michigan Central imported only 1,039 and exported 91,089; the Lake Shore and Michigan Southern brought 2,199 and took away 156,973. The business of the other roads was very small. April was the month of largest receipt and shipment, the former amounting to 92,374 and the latter to 82,888.

Of swine, the largest receipt for the six months, 730,988, was by

the Chicago, Burlington and Quincy road, and the largest shipment, 323,426, by the Michigan Central. The largest monthly receipt, 508,347, was in January, and the largest shipment, 171,505, was in April.

Of sheep, the largest total receipt, 78,977 head, was by the Chicago, Burlington and Quincy road, and the largest shipment, 46,418, was by the Pittsburg, Ft. Wayne and Chicago. The largest monthly receipt and shipment was in January, the former amounting to 58,162 and the latter to 41,898. The movement was very small during May and June.

Of horses, the largest total receipt, 2,722, was by the Chicago, Burlington and Quincy road, and the largest shipment, 5,266, was by the Lake Shore and Southern Michigan. The largest monthly receipt and shipment was in March, the former amounting to 2,784 and the latter to 2,781.

CROPS IN NEBRASKA.—A correspondent, under date of August 16, writes, respecting the condition and yield of crops in Dodge and adjoining counties, as follows:

Corn promises the greatest crop ever grown in the State. The stalks are 10 to 13 feet high, with from 1 to 7 ears on a stalk, and fully averaging 2, large in size and well filled. As a proof of the general expectation of the yield, I will state that 75 bushels of new black oats of splendid quality, weighing 41 pounds per bushel, machine measure, which I hauled last week, brought only 25 cents per bushel. I am satisfied that, unless some disaster happens to the corn-crop, both that and oats will settle down to 15 cents the coming winter. Wheat on bottom-lands is injured by rain, in quality, 25 per cent., but runs 25 per cent. above average in quantity; on uplands it is superior every way. Oats are enormous in yield and very fine in quality, but difficult to harvest, as they were beaten down by storms when just about ripening, and can only be cut one way. Rye, superior in quantity and quality, was harvested in good weather and is safe in stacks. Potatoes are the heaviest in yield and best in quality ever grown here. Our Early Rose cook almost into meal. They are worth only 25 cents now. The crop of hay is so heavy and thick on the ground that serious fears are felt that the annual prairie-fires may be more destructive than usual. Garden-stuff is, beyond all precedent, enormous in yield and good in quality, but is a drug in the market.

Although the air was filled with grasshoppers for two weeks, but very few lighted, and those that did had no appetite, evidently sick from the presence of the red mite which infested them in all cases.

Unless the price of grain, &c., falls to lower rates than ever before in this State, the farmers of this section will nearly regain all that they lost in the last two years.

SOUTHEASTERN ARKANSAS.—One of our statistical correspondents in Southeastern Arkansas, in urging the claims of that section as a field for emigration, gives the unqualified assurance of a perfect freedom of political sentiment and action. He explodes the popular error that the country is "swampy, miasmatic, and mosquito-infested." With a due proportion of fine river, bayou, and creek bottom, this region is high, dry, and undulating. The hills and ridges have a fertile surface, underlaid with sand and gravel. The valleys are alluvial and very productive. The salubrity of the country is shown by the large number of very old people, notwithstanding prevalent unhygienic habits. Pulmonary affections are rare.

Every farm, garden, or orchard product of the temperate zone can be raised here. The long seasons admit of two crops per annum, and of three crops within fifteen months. The bottom-lands will bring large crops of cotton or corn, while the uplands are very rich, and respond quickly to high culture and fertilization. A splendid wheat-crop has just been harvested, of five times the acreage of any previous year. Fine fruit is raised here, though the capacity of this culture has been but imperfectly developed. Wild and cultivated grapes grow in great luxuriance. The Scuppernong of the South grows here with a vigor unsurpassed in any other part of the Gulf States; Ives's Seedling, Norton's Virginia, the Delaware, and other cultivated varieties have been satisfactorily tested. It is believed that wine-production could here be

made successful. Apples, peaches, pears, plums, and small fruits are abundant and good.

The mildness of the climate, and the excellence of native grasses, render stock-raising a very remunerative business. Animals need shelter for only a small portion of the year. Cattle and sheep can be raised more cheaply than in Texas, and a thousand miles nearer the market.

Game and fish are still abundant. Deer, wild turkeys, squirrels, hares, partridges, water-fowl, &c., offer great attractions to sportsmen, though bears are becoming scarce. The rivers and smaller streams swarm with trout, pike, buffalo, perch, &c. Timber in great variety and profusion can yet be had, suited to all purposes. The water-privileges are excellent, being easily adapted to any kind of manufacture. Good water is accessible in wells of moderate depth.

Railroad facilities are already extensive and increasing, while water-transportation is found in all parts of this region. Social order has become more stable. The population is mostly native American, largely recruited from the North. The colored element amounts to about a third of the whole. All the leading religious denominations are strongly represented, and a public-school system of advanced ideas has been organized.

The price of land is very low, from $2 to $6 per acre for choice tracts. Farms often sell for less money than is realized from a single crop of cotton grown upon them. These can be had on accommodating terms. Capital invested in manufacture is exempted from taxation for seven years. Our correspondent believes that the advantages of this region are fully equal to those of sections more thoroughly known.

LARGE YIELDS OF WHEAT.—From seed obtained from this Department a farmer in Warwick, Cecil County, Maryland, raised 132 bushels of Fultz wheat on three acres of land, or 44 bushels per acre.

It is reported that in Dallas County, Texas, Mr. James Horton has thrashed out 3,300 bushels of wheat, produced on 100 acres, and Mr. George Penn 4,000 bushels, produced on 150 acres.

A correspondent reports that a farmer in Escambia, Delta County, Mich., harvested and thrashed 2¼ bushels of "nice" Clawson wheat from a quart of seed, or 72-fold.

REDUCTION OF STOCK-HOGS.—A correspondent in Van Wert County, Ohio, reports many farmers in that region as selling off their stock-hogs in anticipation of a scarcity of corn following the late floods.

GRAPE-CULTURE IN NORTHERN OHIO.—A correspondent sends us the statistics of grape-culture in Ottawa County according to the assessor's returns for 1874, showing 1,596 acres in grapes, producing 5,601,684 pounds, and 433,552 gallons of wine. These figures, he is confident, fall much below the facts.

PLANTING FORESTS IN TEXAS.—Mr. A. McKinney, of San Felipe, Austin County, Texas, contributes some very interesting facts in regard to timber-culture upon the prairies of that State. The richest lands have a very inadequate supply of timber even for fire-wood. The soil of these vast savannas possesses all the elements of heavy forest-growth, and young timber planted would have a rapid and healthy development but for two obstacles hitherto insurmountable. Of these the first is the fire that so often sweeps the prairies, the dry grass furnishing the material for the annual combustion of all incipient tree-growth. The occupancy of these lands by a regular farming population would remedy this difficulty.

Another obstacle to tree-culture is found in the ravages of cattle.

They do not appear to eat the young trees, but use them as a counter-irritant against the stings of flies, mosquitoes, and other troublesome insects. They scratch themselves against every rock and shrub above ground. "If a surveyor puts down a stake six inches above the surface, cattle will even lie down to rub at it till it is literally worked out of the ground." Young trees have no chance of growing unless protected by fencing. It is hoped that a low bushy tree, which our correspondent calls "weesach," and which is covered with hard, sharp thorns, defying the attrition of animals, may yet be found available as a hedge-plant. It seldom grows more than 20 feet high, has short, crooked trunk and limbs, and when cut down sprouts from the root from five to fifty shoots for every one cut off. Its wood is hard and durable as fence-posts, and it furnishes excellent fuel. It is an evergreen, with a yellowish tinge of foliage, and bears a small pod of seeds, which are eaten by cattle and sheep and scattered in their droppings. The seed grows with very little interference from animals. Our correspondent is inclined to think that they will not germinate unless passed through the digestive apparatus of the animal, and suggests that scalding, a process used in the case of the black locust-seed, would have the same effect in inducing germination.

No effort has yet been made to grow hedges of this tree, nor is it ascertained whether it will bear transplanting. It grows luxuriantly around San Patricio and other points in Western Texas, but it is not a prolific propagator like the Osage orange. The young plants are hardy and very thorny, requiring no seed-bed nor early culture, and flourishing as well in close dead soil as on plowed ground. Twenty trunks have been observed from a single root, each one furnishing an excellent fence-post. For this purpose and for fire-wood this tree could be profitably grown on a large scale, provided an available method of propagation could be devised. The weesach, mesquite, Bois d'arc, black and yellow locust, horny locust, white thorn, prickly ash, &c., can be grown without much interference from cattle, and fire could be avoided by annual plowing. As to the rapidity with which such hedge-plants could be made available our correspondent concludes as follows:

> I also think that even on raw prairie hedges could be grown in four years' time to turn stock. As the weesach will start and grow often in a hard, tramped road or cow-pen, without culture or other attention, it would be the very article, if we could utilize it. Would it not be worth while to try the Bois d'arc, the honey-locust, and the white thorn? Ground inclosed by such hedges could be quickly set with other growths of timber. The black walnut, butternut, pecan, hickory-nut, cottonwood, box-elder, sycamore, mulberry, even pine and cedar, &c., could be planted and grown with success and great profit. Were men disposed to make the experiment, a small outlay of labor and means and five years' time would tell the tale. There are millions upon millions of acres of rich prairie-lands now lying idle that ought to be brought into culture and made to contribute to our country's wealth. An object so desirable can only be accomplished by a successful method of forest-culture. Were all who reside on the prairies now disposed to try timber-culture it would lead to ultimate success, and become a means of great profit. As for ourselves we purpose a trial of it.

WHEAT-CULTURE IN TENNESSEE.—Mr. J. H. Crichlow furnishes the Department with a very suggestive and elaborate tabular statement embracing one hundred and thirty-seven enterprises in wheat-culture by farmers miscellaneously located in different parts of Rutherford County, Tennessee. The area covered by these crops aggregated 2,721 acres, producing, on the whole, 33,404 bushels, or $12\frac{1}{4}$ bushels per acre. Though our correspondent regrets his inability to make a fuller report, his very careful analysis of his materials gives at least an approximate idea of the status of wheat-culture in that part of Tennessee. The statement will be found below.

The maximum yield, 30 bushels per acre, was on 17 acres of oats stubble seeded with amber wheat, variety not designated, at the rate of a bushel per acre. Several cases averaged about 24 bushels of White-beard, amber, Tappahannock, Fultz, blue-stem Mediterranean, &c., some of them occupying a considerable acreage. Generally, an increase of acreage is accompanied by a depressed average. One farmer, on 120 acres, the largest area noted, averaged 13 bushels per acre of Tappahannock; another averaged 18 bushels of Walker wheat on 50 acres, and 14 bushels of Tappahannock on another 50 acres. A farmer just outside of the county averaged 19 bushels on 96 acres. In nearly half the cases noted the wheat was seeded upon cotton-land; corn-land was seeded in almost as many cases, while a few followed oats, clover, pasture, &c. About half the crop of the county was good and the other half inferior, mostly smutted. Where the seed had been soaked in a solution of bluestone this malady was avoided. This preparation will hereafter be more generally used. The effect of the preceding crop upon the growing crop was slight, as the same kind of land produced both large and small crops. The seed sown varied from 3 pecks to 5 pecks per acre.

Wheat report from Rutherford County, Tennessee.

Party growing.	Variety.	Amount sown per acre.	Number of acres.	Yield per acre.	Total bushels.	Last year's crop.
W. R. Jones	Blue-stem Mediterranean.	1⅛	15	24	360	Cotton.
M. B. Jordan	Blue-stem Mediterranean.	1	11	18	198	Cotton.
M. B. Jordan	Walker	1	21	11	231	Cotton.
R. E. Jorman	Boughton	1	12	17	204	Cotton.
R. E. Jorman	White chaff bearded.	1	20	12	240	Wheat.
R. E. Jorman	Mediterranean	1	12	12	144	Corn.
Favor Cason	White bearded	⅝	20	24	480	Clover.
Favor Cason	Amber	⅝	10	24	240	Clover.
E. L. Matthews	Tappahannock	1	24	10	240	Cotton and clover.
E. L. Matthews	White bearded	1	10	12	120	Clover.
E. C. Portee	Boughton	1	15	7½	112	Cotton.
C. M. Brooks	Mediterranean	1	22	11¼	248	Oats and millet.
William Mitchell	Blue-stem Mediterranean.	1	16	20¼	324	Clover, cotton, and corn.
William Mitchell	White Mediterranean.	1	10	17½	175	Cotton.
William Mitchell	Ballard	1	80	7½	600	Clover and cotton.
W. N. Jordan	Boughton	1	10	10	100	Corn.
Meek Snell	Boughton	1	18	9	162	Cotton and corn.
Thomas Spain	Tappahannock	1¼	30	9½	285	Cotton.
Thomas Brown	Walker	1⅛	5	8½	43	Corn.
S. B. Smith	Tappahannock	1	26	14½	377	Corn and clover.
William Ellington	Reed	1	8	12½	100	Cotton.
Rufus Smith	Tappahannock	1	4	21	84	Cotton.
Mrs. W. H. Smith	Reed	1	9	11½	104	Corn.
John Woods	Boughton	1	23	18	414	Cotton.
John Woods	Walker	1	20	10	200	Corn.
John Woods	Mediterranean	1	6	13	78	Corn.
George A. Brown	Reed	1	15	8	120	Cotton.
E. Rosenfeld	Tappahannock	1	28	13	364	Cotton.
E. Rosenfeld	Mediterranean	1	28	13	364	Cotton.
J. F. Jenkins	Boughton	1	25	10	250	Cotton.
J. M. McCulloch	Reed	1	8	10	80	Cotton.
J. M. McCulloch	Mediterranean	1	40	8	320	Corn.
Mat. Pitts	Mediterranean	1¼	25	10	250	Corn and cotton.
William Fox	Reed	1	40	11¼	450	Corn.
Evander Lytle	Walker	1¼	18	12¼	220	Corn.
Evander Lytle	Golden chaff	1¼	13	12½	163	Corn.
Evander Lytle	White bearded	1¼	22	14¼	315	Cotton.
Evander Lytle	Boughton	1¼	16	15½	248	Cotton.
Henry Bone	Red	¾	6	12	72	Corn.
Henry Bone	White	¾	4	12	48	Corn.

Wheat report from Rutherford County, Tennessee—Continued.

Party growing.	Variety.	Amount sown per acre.	Number of acres.	Yield per acre.	Total bushels.	Last year's crop.
Alexander Hartman	Amber	1	17	30	510	Oats.
King H. Howse	Mediterranean	1	12	12	144	Cotton and oats.
Mrs. Julia Howse	White	1	27	5	135	Cotton and oats.
George Busley	Walker	1	24	11	264	Corn, cotton, and wheat.
A. P. Lowe	White bearded	⅞	30	11	330	Corn.
P. A. Lyon	Boughton	⅞	20	21	420	Corn.
J. B. Palmer	Boughton	1⅛	12	12	144	Corn.
J. B. Palmer	Reed	1	30	7	210	Cotton and corn.
J. B. Palmer	Tappahannock	1	40	7	280	Clover and cotton.
W. B. Lillard	Missouri	1¼	12	16	192	Corn.
W. B. Lillard	Tappahannock	1¼	12	15	180	Cotton.
W. B. Lillard	Mediterranean	1	10	12½	125	Cotton.
Abner Dement	Reed	1	21	13½	284	Corn.
John Dement	Reed	1	30	9½	285	Wheat and corn.
William P. Henderson	Tappahannock	1	16	13	208	Corn and cotton.
W. B. Garrett	Walker	1	30	14¼	427	Corn and cotton.
J. M. Alexander	Boughton	1	16	8	128	Corn and cotton.
W. L. Davis	Reed	1	21	12½	263	Cotton.
W. L. Davis	Amber	1	30	9¼	277	Corn.
W. P. Pitts	Mediterranean	1¼	8	10	80	Corn.
P. M. Rowlett	Mediterranean	1	7	12½	90	Cotton.
Joshua Jordan	Mediterranean	1¼	10	11	110	Corn.
Joshua Jordan	Tappahannock	1¼	18	7	126	Cotton.
S. R. Sanders	Mediterranean	1	15	20	300	Clover.
S. R. Sanders	Missouri red	1	6	15	90	Cotton.
S. R. Sanders	Missouri red	1	13	13	169	Wheat.
S. R. Sanders	Missouri red	1	5	15	75	Corn.
B. F. Alexander	Boughton	1	24	16	384	Corn.
J. W. Sparks	Tappahannock	1¼	18	23⅓	402	Corn.
J. W. Sparks	Missouri	1¼	30	15	450	Corn.
J. W. Sparks	Tappahannock	1¼	20	12½	250	Corn.
J. H. Barton	Reed	1	9	10	90	Cotton.
Joseph Dill	Reed	1	45	14½	653	Wheat and corn.
N. J. Lyon	Tappahannock	1	8	10	80	Corn.
N. J. Lyon	Bearded	1	8	9	72	Corn.
B. D. Fletcher	Boughton	⅞	18	11	198	Cotton.
J. T. Leach	Walker	1	15	11	165	Cotton.
J. T. Leach	White Eakin	1	5	18	90	Cotton.
George Zumbro	Walker	1⅛	18	6	108	Cotton.
Thomas W. Cox	Boughton	1	6	12½	75	Corn.
W. G. Mathis	Mediterranean	1	18	16½	297	Corn and oats.
W. G. Mathis	Reed	1	24	14½	348	Corn.
John Burnett	Mediterranean	1	5	16	80	Cotton.
John Burnett	Reed	1	12	14	168	Corn.
J. Bun Johns	Boughton	1	5	12½	63	Cotton.
J. Bun Johns	Missouri red	1¼	10	7	70	Clover.
M. B. Kittrell	Walker	1	30	13½	405	Corn.
A. T. Smith	Walker	1	18	11	198	Cotton and corn.
Jack Lytle	Boughton	1	52	10½	546	Corn.
Jesse Vawter	Boughton	1	15	13⅓	200	Cotton.
R. A. Jones	White bearded	¾	15	10⅔	160	Cotton.
S. H. Singleton	Blue-stem Mediterranean.	1	35	12	420	Corn and cotton.
S. L. McAdoo	Odessa	1	6	20	120	Cotton.
S. L. McAdoo	Walker	1	27	16	432	Corn.
S. L. McAdoo	Reed	1	25	9½	237	Cotton.
E. B. Wade	Fultz	¾	14	11	154	Cotton.
B. T. Wade	Amber	1	4	9	36	Clover.
B. T. Wade	Walker	1	12	10	120	Clover.
J. S. Smith	Boughton	1	4	10	40	Corn.
J. S. Smith	Missouri red	1	8	10	80	Cotton.
John Brashear	Boughton	1	27	9½	251	Cotton.
John Brashear	Golden chaff	1	13	7¾	101	Corn.
W. F. Bone	Amber	1	10	13	130	Cotton.
W. E. Jones	Mediterranean	1	15	11	166	Corn and cotton.
G. T. Wells	Mediterranean	1	7	15	105	Cotton.
G. T. Wells	Walker	1	14	17	238	Cotton.
G. T. Wells	Boughton	1	19	13⅓	256	Cotton.
W. M. Byrn	Mediterranean	1	18	11	198	Corn.
J. C. Hood	Reed	1	14	11	154	Corn.
J. E. Stockird	Mediterranean	1	7	12	84	Oats.
J. E. Stockird	Amber	1	7	12	84	Oats.
W. L. Patterson	Tappahannock	1	22	10	220	Cotton.
W. L. Patterson	White bearded	1	24	23	452	Corn.
Jacob Hall	White bearded	1	5	13	65	Cotton.
Jacob Hall	Tappahannock	1	5	11	55	Cotton.
Jacob Hall	Walker	1	5	11	55	Corn.

Wheat report from Rutherford County, Tennessee—Continued.

Party growing.	Variety.	Amount sown per acre.	Number of acres.	Yield per acre.	Total bushels.	Last year's crop.
Childress & Tarpley	Mediterranean	1	40	18	720	Corn.
Childress & Tarpley	Tappahannock	1	50	11¼	567	Cotton.
Jack Todd	Mediterranean	1	15	12	180	Oats.
John W. McCulloch	Mediterranean	1	10	8½	85	Cotton.
B. T. Johnson	Boughton	1¼	100	7½	750	Cotton.
Samuel Donnel	Odessa	1	83	13½	1,120	Clover.
K. Carlton	Fultz	1	3¾	24⅔	92	Corn.
K. Carlton	Amber	1	21	18	378	Cotton.
J. L. Stroop	Reed	1	32	15	480	Corn.
W. F. M. Betty	Reed	1	10	9	90	Corn and cotton.
D. H. Sneed	Boughton	1	8	11	88	Corn.
D. H. Sneed	Mediterranean	1	5	10	50	Open.
D. H. Sneed	Orleans	1	7	12	84	Corn.
D. H. Sneed	Boughton	1	12	10	120	Corn.
B. W. Henry	Odessa	1¼	75	14	1,050	Cotton, corn, and wheat.
R. B. Jetton	Tappahannock	1	120	13	1,560	Corn.
John W. Childress	Walker	1	50	18	900	Cotton and clover.
John W. Childress	Tappahannock	1	50	14	700	Cotton and clover.
Samuel Watkins	Red bearded	1¼	20	17½	350	Pasture.
Thomas H. Hays	Boughton	1	7	19¾	136	Cotton.
Thomas H. Hays	Walker	1	7	23½	165	Corn.

Number of reports, 137; number of acres, 2,721; total number of bushels, 33,404; average yield per acre, 12¼ bushels.

CONTINUOUS WHEAT-GROWING WITH COMMERCIAL FERTILIZERS.—The experiment made in England of growing wheat with little regard to rotation, and none whatever to fertilizing with farm-manures, by means of deep steam-culture and abundant use of commercial fertilizers, has been frequently referred to in this report. The custom is to sell the ripened crops standing, the ripening occurring early in August. Mr. Middleditch, at Blunsden, near Swindon, has sold the product of 550 acres, of which 350 were wheat, for over £5,000, or $25,000. The Rivett cone-wheat brought $58.75 per acre; oats, $56.87; winter-beans, $50. Mr. Prout's crops, at Sawbridgeworth, Hertfordshire, on his farm of 450 acres, realized $54.22 per acre for all crops: wheat, $53.14; barley, $45.42; oats, $55.94; clover, $76.95. The purchaser has, of course, the expense of harvesting. At this price, standing, the yield must have exceeded 40 bushels per acre, unless it was of the very highest quality. This is about the usual yield of the farms in a course of a dozen years.

RUSSIAN APPLES, ETC.—The secretary of the Rock Point Farmers' Club, Marion County, Oregon, reports as follows: "Those Russian apples received from the Department are doing finely. None of the trees are yet bearing. The Italian plum is liable to winter-kill here, but the German prune is at home, and a finer fruit would be hard to find."

A SEVERE LOCAL DROUGHT.—Under date of September 6, the secretary of the agricultural society in Austin County, Texas, reports that the protracted drought still continues in the northern part of that county, though rains are falling in the southern part and in the adjoining counties. Springs and wells are all drying up, and the milch-cows have to be turned from the inclosures and driven miles away in search of water. One of the adverse consequences is a failure of milk and butter.

MARKET-PRICES OF FARM-PRODUCTS

FOR AUGUST AND SEPTEMBER, 1875.

The following quotations represent, as nearly as practicable, the state of the market at the beginning of each month.

Articles.	August.	September.
NEW YORK.		
Flour, superfine ..... per barrel..	$4 90 to $5 40	$4 85 to $5 50
extra State ..... do.....	5 85 to 6 40	5 65 to 6 50
extra to choice western ..... do.....	5 85 to 8 50	5 65 to 8 50
common to fair southern extras. do.....	6 00 to 6 75	5 80 to 6 85
good to choice southern extras. do.....	6 80 to 8 50	6 90 to 8 50
Wheat, No. 1 spring ..... per bushel..	1 45 to 1 47	1 44 to 1 45
No. 2 spring ..... do.....	1 34½ to 1 42	1 26 to 1 37
winter, red, western ..... do.....	1 48 to 1 54	1 44 to 1 48
winter, amber, western ..... do.....	1 48 to 1 54	1 44 to 1 48
winter, white, western ..... do.....	1 52 to 1 58	1 46 to 1 58
Rye ..... do.....	1 00 to 1 10	98 to 1 00
Barley ..... do.....	1 20 to ———	1 05 to ———
Corn ..... do.....	81 to 89	73 to 80½
Hay, first quality ..... per ton...	19 00 to 24 00	19 00 to 21 00
second quality ..... do.....	15 00 to ———	16 00 to ———
Beef, mess ..... per barrel..	8 00 to 9 50	8 00 to 9 50
extra mess ..... do.....	10 00 to 10 75	10 00 to 11 00
Pork, mess ..... per barrel..	21 00 to 21 15	20 90 to 21 00
extra prime ..... do.....	16 00 to ———	16 00 to 16 25
prime mess ..... do.....	18 00 to 19 25	19 25 to 19 50
Lard ..... per pound..	12⅝ to 13⅞	12¾ to 13⅝
Butter, western ..... do.....	17 to 24	22 to 32
State dairy ..... do.....	22 to 35	23 to 32
Cheese, State factory ..... do.....	10¼ to 12¼	9⅓ to 11¼
western factory ..... do.....	9⅓ to 11⅓	8 to 10¼
Sugar, fair to prime refining ..... do.....	8⅛ to 8⅓	7⅞ to 8⅜
Cotton, ordinary to good ordinary ..... do.....	12⅛ to 13¾	12¼ to 12⅞
low middling to good middl'g. do.....	14¼ to 15½	13¼ to 15⅞
Tobacco, lugs ..... do.....	8½ to 11	8 to 11
low leaf to medium leaf..... do.....	11 to 15½	11 to 15½
Wool, American XXX and picklock.. do.....	55 to 60	50 to 54
American X and XX ..... do.....	50 to 52	43 to 48
American combing ..... do.....	54 to 63	55 to 65
pulled ..... do.....	30 to 52	27 to 46
California, spring clip ..... do.....	23 to 34	22 to 32
California, fall clip ..... do.....	18 to 24	18 to 22
BOSTON.		
Flour, western superfine ..... per barrel..	5 00 to 5 25	5 25 to 5 50
common western extras ..... do.....	5 75 to 6 25	6 00 to 6 50
red wheats, good to fancy northwestern ..... per barrel..	6 00 to 9 00	6 25 to 9 00
white wheats, good to fancy western ..... per barrel..	6 50 to 9 00	7 00 to 9 25
southern family ..... do.....	7 00 to 8 50	7 50 to 9 25
Wheat ..... per bushel..	——— to ———	1 27 to 1 60
Corn ..... do.....	90 to 93	80 to 86
Oats ..... do.....	67 to 76	47 to 62
Rye ..... do.....	1 10 to ———	95 to ———
Barley ..... do.....	Nominal.	Nominal.
Hay, eastern and northern ..... per ton...	16 00 to 22 00	17 00 to 23 00
choice western ..... do.....	——— to ———	——— to ———

Market-prices of farm-products—Continued.

Articles.	August.	September.
BOSTON—Continued.		
Beef, mess ..... per barrel..	$10 00 to ———	$10 00 to ———
extra mess ..... do.....	12 00 to ———	——— to $13 00
family ..... do.....	16 00 to $17 00	17 00 to 17 50
Pork, prime ..... do.....	16 50 to 17 00	16 00 to 17 00
mess ..... do.....	21 50 to 22 00	22 00 to 22 50
Lard ..... per pound..	14 to 15	14½ to 15
Butter, New York and Vermont ..... do.....	18 to 27	20 to 30
western ..... do.....	16 to 28	18 to 33
Cheese, New York and Vermont factory do.....	10 to 12	9½ to 11½
western factory ..... do.....	9 to 11	9 to 11
Sugar, fair to good refining ..... do.....	8⅛ to 8⅞	8 to 8¼
Cotton, ordinary to good ordinary ..... do.....	12⅜ to 14¼	12⅜ to 14¼
low middling to good middling..do.....	15 to 16¼	14⅜ to 15⅜
Wool, Ohio and Pennsylvania..... do.....	45 to 53	41½ to 50
Michigan ..... do.....	43 to 47	43 to 45
other western ..... do.....	43 to 46	40 to 45
pulled ..... do.....	20 to 50	25 to 50
combing fleece ..... do.....	55 to 59	41 to 57
California ..... do.....	14 to 38	12 to 27
PHILADELPHIA.		
Flour, superfine ..... per barrel..	4 25 to 4 50	4 75 to 5 00
Pennsylvania extra to choice...do.....	4 50 to 6 50	5 25 to 7 00
western extra to choice ..... do.....	5 00 to 6 75	6 25 to 7 50
Wheat, red ..... per bushel..	1 30 to 1 36	1 35 to 1 48
amber ..... do.....	——— to ———	——— to ———
white ..... do.....	1 40 to 1 45	1 50 to 1 63
Rye ..... do.....	1 05 to 1 10	90 to 95
Barley ..... do.....	——— to ———	——— to ———
Corn ..... do.....	84 to 87	78 to 82
Oats ..... do.....	58 to 66	43 to 74
Hay, baled, prime ..... per ton..	23 00 to 25 00	23 00 to 25 00
baled, common to fair shipping..do.....	20 00 to 22 00	20 00 to 22 00
Beef, western mess ..... per barrel..	7 00 to ———	7 00 to 9 00
extra mess ..... do.....	8 00 to 9 00	8 00 to 9 00
Warthman's city family ..... do.....	16 00 to ———	16 00 to ———
Pork, mess ..... do.....	21 25 to 21 50	21 00 to ———
prime mess ..... do.....	17 50 to ———	18 00 to ———
prime ..... do.....	15 00 to 15 50	15 00 to 15 50
Lard ..... per pound..	14¾ to 17¾	13¾ to 17⅓
Butter, choice Middle States ..... do.....	24 to 35	26 to 39
choice western ..... do.....	20 to 23	20 to 30
Cheese, New York factory ..... do.....	9 to 12	8 to 12
Ohio factory ..... do.....	10 to 10¾	7 to 10¾
Sugar, fair to good refining ..... do.....	8⅛ to 8⅝	7⅞ to 8¼
Cotton, ordinary to good ordinary ..... do.....	11⅝ to 13⅞	11⅛ to 14⅝
low middling to good middling..do.....	14¾ to 16⅜	14⅓ to 15¼
Wool, Ohio X and XX ..... do.....	50 to 52	45 to 47
other western ..... do.....	48 to 52	44 to 48
tub-washed ..... do.....	50 to 58	50 to 58
pulled ..... do.....	38 to 45	26 to 45
combing ..... do.....	32 to 65	58 to 65
BALTIMORE.		
Flour, superfine ..... per barrel..	4 25 to 5 00	4 75 to 5 50
extra ..... do.....	5 25 to 6 00	5 75 to 6 75
family and fancy ..... do.....	6 50 to 8 50	7 00 to 9 00
Wheat, red ..... per bushel..	1 20 to 1 40	1 15 to 1 48
amber ..... do.....	1 40 to 1 45	1 50 to 1 55
white ..... do.....	1 25 to 1 40	1 20 to 1 50

Market-prices of farm-products—Continued.

Articles.	August.	September.
BALTIMORE—Continued.		
Rye ..... per bushel	$0 93 to $1 03	$0 75 to $1 05
Oats ..... do	60 to 68	40 to 52
Corn ..... do	83 to 92	71 to 87
Hay, Middle State ..... per ton	23 00 to 28 00	25 00 to 30 00
Pork, mess ..... per barrel	21 75 to 22 00	22 00 to 22 25
extra prime ..... do	16 00 to 16 25	16 50 to ———
Lard ..... per pound	14½ to 14¾	14½ to 14¾
Butter, western ..... do	16 to 22	18 to 25
eastern ..... do	16 to 23	18 to 35
Cheese, western factory ..... do	11 to 12	10 to 11½
eastern factory ..... do	13 to 14	11 to 13
Sugar, fair to good refining ..... do	8 1/16 to 8 5/16	7⅞ to 8¼
New Orleans grocery grades ... do	8⅜ to 8½	8⅜ to 8⅜
Tobacco, lugs ..... do	8 to 12	8 to 11
common to medium leaf .... do	12 to 14½	10 to 14
Cotton, ordinary to good ordinary ..... do	——— to 13½	——— to 13½
low middling to middling ..... do	14 to 14½	14¼ to 14⅝
CINCINNATI.		
Flour, superfine ..... per barrel	4 75 to 5 00	5 25 to 5 50
extra ..... do	5 90 to 6 15	6 00 to 6 25
family and fancy ..... do	6 10 to 7 75	6 40 to 8 50
Wheat, winter, red ..... per bushel	1 00 to 1 50	1 25 to 1 50
hill, (amber) ..... do	——— to ———	1 30 to 1 40
white ..... do	1 45 to 1 50	1 30 to 1 40
Rye ..... do	95 to 1 10	85 to ———
Barley ..... do	1 15 to 1 30	1 15 to 1 45
Corn ..... do	71½ to 74	70 to 75
Oats ..... do	66 to 70	30 to 50
Hay, baled, No. 1 ..... per ton	18 00 to 22 00	23 00 to 24 00
lower grades ..... do	9 00 to 14 00	20 00 to 22 00
Beef, plate ..... per barrel	——— to ———	——— to ———
Pork, mess ..... do	20 50 to 21 00	20 75 to 21 25
Lard ..... per pound	13¼ to 15⅜	12⅜ to 15½
Butter, choice ..... do	20 to 24	28 to 31
prime ..... do	18 to 20	24 to 25
Cheese, prime to choice factory ..... do	10 to 10½	10½ to 11
Sugar, New Orleans, fair to good ..... do	8⅜ to 9¼	——— to 9½
prime to choice .. do	9½ to ———	9½ to ———
Tobacco, lugs ..... do	19 to 20	15 to 20
leaf ..... do	12 to 30	28 to 30
Cotton, ordinary to good ordinary .... do	11⅜ to 12¼	——— to ———
low middl'g to good middl'g .. do	13⅜ to 14⅝	——— to ———
Wool, fleece-washed, common to fine .do	40 to 52	43 to 40
tub-washed ..... do	——— to ———	——— to ———
unwashed, clothing ..... do	28 to 32	25 to 32
combing ..... do	35 to 38	34 to 38
pulled ..... do	33 to 38	31 to 37
CHICAGO.		
Flour, choice white winter extras .per barrel	6 50 to 7 25	6 50 to 7 50
common to good extras ..... do	6 00 to 6 50	6 25 to 6 50
choice spring extras ..... do	5 50 to 6 00	5 75 to 6 25
patent spring ..... do	6 75 to 8 50	6 75 to 8 50
spring superfines ..... do	3 75 to 4 12½	3 75 to 4 25
Wheat, No. 1 spring ..... per bushel	1 25⅝ to 1 26	1 22 to 1 25
No. 2 spring ..... do	1 22⅜ to 1 24½	1 13¼ to 1 14¼
No. 3 spring ..... do	1 16 to 1 16⅝	1 07 to 1 17

Market-prices of farm-products—Continued.

Articles.	August.	September.
CHICAGO—Continued.		
Corn ..... per bushel..	$0 62 to $0 71¼	$0 61¾ to $0 63¼
Rye, No. 2 ..... do.....	80 to 82	65 to 81
Barley, No. 2 ..... do.....	1 07½ to 1 08	1 10 to ———
Oats, No. 2 ..... do.....	52 to 52½	34 to 35
Hay, timothy ..... per ton..	14 00 to 19 00	16 00 to 19 50
prairie ..... do.....	9 00 to 16 50	11 50 to 15 50
Beef, mess ..... per barrel..	8 25 to ———	8 50 to ———
extra mess ..... do.....	9 25 to ———	9 50 to ———
Pork, mess ..... do.....	20 75 to ———	20 50 to 20 75
prime mess ..... do.....	——— to ———	——— to ———
extra prime ..... do.....	14 25 to ———	14 00 to 14 25
Lard ..... per pound..	13⅛ to 13½	12⅞ to ———
Butter, choice to fancy ..... do.....	23 to 28	25 to 29
medium to good ..... do.....	16 to 20	18 to 21
Cheese, prime factory ..... do.....	10 to 11	10½ to 11½
Sugar, brown, common to choice ..... do.....	——— to ———	7⅝ to 9¼
Wool, tub-washed ..... do.....	40 to 53	40 to 53
fleece-washed ..... do.....	38 to 43	39 to 41
unwashed ..... do.....	25 to 33	26 to 33
pulled ..... do.....	——— to ———	——— to ———
SAINT LOUIS.		
Flour, winter, common to choice ... per barrel..	4 25 to 7 50	4 25 to 7 50
spring ..... do.....	3 75 to 5 00	3 75 to 5 00
Wheat, white winter ..... per bushel..	1 20 to 1 28	1 28 to 1 38
red winter ..... do.....	1 12 to 1 38	1 08 to 1 46
spring ..... do.....	1 03 to 1 20	1 05 to 1 15
Corn ..... do.....	65 to 72	60 to 70
Rye ..... do.....	85 to 1 03	72 to 80
Barley ..... do.....	1 25 to 1 50	1 18 to 1 30
Oats ..... do.....	52 to 60	29 to 40
Hay, timothy ..... per ton....	12 20 to 22 00	18 00 to 21 00
prairie ..... do.....	10 00 to 13 00	7 00 to 12 00
Beef, mess ..... per barrel..	14 00 to 15 00	14 00 to 15 00
Pork, mess ..... do.....	20 00 to 21 00	20 50 to 21 00
Lard ..... per pound..	12 to 14	13 to 15
Butter, prime to choice dairy ..... do.....	27 to 28	27 to 28
country packed ..... do.....	16 to 20	18 to 22
Cheese, Ohio factory ..... do.....	13 to 13½	13 to 13½
New York factory ..... do.....	13 to 13½	13 to 13½
Tobacco, lugs ..... do.....	6 to 9	6 to 9
leaf ..... do.....	8 to 14	8 to 14
Wool, tub-washed ..... do.....	51 to 53	50 to 51
fleece-washed ..... do.....	37 to 47	37 to 47
unwashed ..... do.....	30 to 38	30 to 38
Cotton, ordinary to good ordinary .... do.....	12½ to 14½	12½ to 14½
low middling to good middling. do.....	15 to 16¼	15 to 16¼
NEW ORLEANS.		
Flour, superfine ..... per barrel..	4 75 to 5 00	5 25 to ———
extra ..... do.....	5 62½ to 6 75	5 50 to 6 50
choice to fancy ..... do.....	7 00 to 7 75	6 75 to 8 00
Corn, yellow ..... per bushel..	86 to ———	86 to 89
white ..... do.....	92 to 94	92 to 94
Oats ..... do.....	65 to 70	40 to 60
Hay, choice ..... per ton....	26 00 to 28 00	26 00 to 27 00
prime ..... do.....	23 00 to ———	26 00 to ———
Beef, Texas ..... per barrel..	10 00 to 11 50	10 00 to 11 50
western ..... do.....	16 00 to ———	16 00 to ———
Fulton market ..... per half barrel..	11 00 to 12 50	11 50 to 12 00

Market-prices of farm-products—Continued.

Articles.	August.	September.
NEW ORLEANS—Continued.		
Pork, mess ..... per barrel..	$22 50 to ———	$22 25 to $22 50
Lard ..... per pound..	14 to $0 15	14¼ to 15⅓
Butter, choice Goshen ..... do.....	30 to 33	32 to 34
choice western ..... do.....	20 to 22	22 to 24
Cheese, choice western factory ..... do.....	11 to 12	11 to ———
New York cream ..... do.....	——— to ———	17½ to 18
Sugar, fair to fully fair ..... do.....	8¾ to 9¾	9¼ to 10
prime to strictly prime ..... do.....	9¾ to 10	10 to 10½
clarified, white and yellow ..... do.....	9¾ to 11	10½ to 10¾
Cotton, ordinary to good ordinary ..... do.....	11 to 12	11½ to 12⅔
low middling to good middling .. do.....	13 to 15	13⅓ to 15
Wool, lake ..... do.....	33 to 33½	28 to ———
SAN FRANCISCO.		
Flour, superfine ..... per barrel..	5 00 to 5 50	5 25 to 5 50
extra ..... do.....	6 00 to 6 50	6 00 to 6 25
family and fancy ..... do.....	6 75 to 7 00	6 50 to 7 00
Wheat, California ..... per cental..	2 00 to 2 15	2 00 to 2 15
Oregon ..... do.....	2 00 to 2 10	2 00 to 2 15
Barley ..... do.....	1 40 to 1 60	1 40 to 1 65
Oats ..... do.....	1 75 to 2 25	1 75 to 2 05
Corn, white ..... do.....	1 50 to 1 55	1 50 to 1 55
yellow ..... do.....	1 45 to 1 50	1 40 to 1 50
Hay, State ..... per ton...	12 50 to 17 50	12 50 to 18 00
Beef, mess ..... per barrel..	8 50 to 9 50	8 00 to 9 00
family mess ..... per half barrel..	6 50 to 8 00	7 50 to 8 00
Pork, mess ..... per barrel..	22 00 to 23 00	22 00 to 23 00
prime mess ..... do.....	16 50 to 17 00	16 50 to 17 50
Lard ..... per pound..	15 to 16½	15 to 16½
Butter, overland ..... do.....	20 to 27	20 to 22
California ..... do.....	25 to 35	30 to 45
Oregon ..... do.....	20 to 22½	20 to 25
Cheese ..... do.....	12½ to 15	12½ to 15
Wool, native ..... do.....	12 to 15	10 to 15
California ..... do.....	15 to 27	15 to 27
Oregon ..... do.....	15 to 25	15 to 27

LIVE-STOCK MARKETS.

Articles.	August.	September.
NEW YORK.		
Cattle, extra beeves ..... per cental..	$13 00 to $13 50	$13 00 to $13 50
good to prime ..... do.....	12 00 to 12 75	11 50 to 12 75
common to fair ..... do.....	11 25 to 11 75	10 75 to 11 25
average of the market ..... do.....	11 75 to ———	11 25 to ———
Texans ..... do.....	6 50 to 11 50	7 25 to 9 50
milch-cows ..... per head..	40 00 to 100 00	45 00 to 75 00
veal calves ..... per cental..	6 00 to 10 00	7 00 to 10 00
Sheep ..... do.....	4 25 to 6 25	4 50 to 6 50
Swine ..... do.....	——— to ———	8 37½ to ———

Live-stock markets—Continued.

Articles.	August.			September.		
PHILADELPHIA.						
Cattle, prime beeves ..... per cental..	$7 25	to	$7 87	$7 50	to	$ 8 00
fair to good ..... do.....	6 00	to	———	5 75	to	7 25
common ..... do.....	3 75	to	5 75	4 00	to	5 50
Sheep ..... do.....	4 50	to	6 00	4 00	to	6 00
Swine, corn-fed ..... do.....	11 25	to	11 50	11 50	to	12 50
BALTIMORE.						
Cattle, best beeves ..... per cental..	5 72	to	7 12	6 25	to	6 75
first quality ..... do.....	4 50	to	5 62	4 75	to	6 25
medium or good quality ..... do.....	3 75	to	4 50	3 50	to	4 75
ordinary ..... do.....	3 25	to	3 75	2 75	to	3 50
general average ..... do.....	5 50	to	———	4 50	to	———
most of the sales ..... do.....	5 00	to	6 00	4 00	to	5 12
milch-cows ..... per head..	35 00	to	42 00	30 00	to	42 00
Sheep ..... per cental..	4 00	to	5 50	4 00	to	5 50
Swine ..... do.....	10 25	to	11 00	10 00	to	11 50
CINCINNATI.						
Cattle, good to prime butchers' steers ..... per cental..	5 75	to	6 00	5 00	to	5 50
fair to medium ..... do.....	4 25	to	5 50	3 25	to	4 75
common ..... do.....	2 50	to	4 00	2 25	to	3 25
milch-cows ..... per head..	40 00	to	55 00	20 00	to	50 00
veal calves ..... per cental..	5 00	to	6 50	4 50	to	6 50
Sheep ..... do.....	3 25	to	4 50	3 00	to	4 50
Swine ..... do.....	7 60	to	7 90	6 50	to	8 40
CHICAGO.						
Cattle, extra-graded steers, 1,400 to 1,550 pounds ..... per cental..	———	to	6 60	6 40	to	6 75
choice beeves, 1,250 to 1,450 pounds ..... do.....	6 00	to	6 30	5 75	to	6 25
good beeves, 1,150 to 1,300 pounds ..... do.....	5 75	to	5 85	5 00	to	5 60
medium, 1,100 to 1,250 pounds ..... do.....	5 00	to	5 55	4 25	to	5 00
inferior ..... do.....	———	to	———	2 25	to	4 00
Texans ..... do.....	3 15	to	4 40	2 25	to	3 75
Sheep ..... do.....	2 75	to	5 00	3 00	to	5 12½
Swine ..... do.....	5 75	to	8 00	6 50	to	8 75
SAINT LOUIS.						
Cattle, good to choice native steers. per cental..	5 50	to	6 75	5 50	to	6 25
common to fair natives ..... do.....	3 25	to	4 75	3 25	to	5 25
inferior and common ..... do.....	1 50	to	2 87	2 50	to	3 00
Texans, fair to choice ..... do.....	2 50	to	4 25	1 75	to	4 25
Sheep ..... do.....	3 75	to	6 25	2 85	to	4 25
Swine ..... do.....	6 60	to	8 00	6 00	to	8 00
Horses, plugs ..... per head...	40 00	to	75 00	40 00	to	75 00
plain ..... do.....	80 00	to	110 00	80 00	to	110 00
street-car ..... do.....	75 00	to	125 00	75 00	to	125 00
heavy draught ..... do.....	130 00	to	170 00	130 00	to	170 00
good drivers ..... do.....	100 00	to	150 00	100 00	to	150 00
extra ..... do.....	175 00	to	180 00	175 00	to	180 00
Mules, 14 to 15 hands high ..... do.....	75 00	to	120 00	75 00	to	120 00
15 to 16 hands high ..... do.....	120 00	to	180 00	120 00	to	180 00
extra ..... do.....	175 00	to	200 00	175 00	to	200 00

Live-stock market—Continued.

Articles.	August.	September.
NEW ORLEANS.		
Cattle, Texas beeves, choice.....per head...	$40 00 to $46 00	$40 00 to $46 00
first quality.....do.....	30 00 to 35 00	30 00 to 35 00
second quality.....do.....	20 00 to 25 00	20 00 to 25 00
western beeves .....per cental..	—— to ——	—— to ——
milch-cows .....per head..	30 00 to 100 00	35 00 to 100 00
calves .....do.....	7 00 to 9 00	7 00 to 9 00
Sheep .....do.....	2 00 to 5 00	2 00 to 5 00
Swine .....per cental..	5 00 to 10 00	5 00 to 10 00

FOREIGN MARKETS.

WHEAT.—The weather in England was unexpectedly favorable for the gathering of cereal crops, and the fears on that head have been dispelled, but only to give way to another cause of public anxiety. The more the character of the new crop becomes known, the more complaints of its quality are rife. It is a matter of general congratulation that it has been saved in such good order. The English Agricultural Gazette says that less than 7 per cent. of its county correspondents report the yield of wheat above average, and that the wheat-fields are unusually "dirty," "knocked about," "dusky," "stained," and "prematurely dead," especially in Staffordshire and Warwickshire, through which the editor had made a journey. Of the returns 6½ per cent. show a condition above average, 36 per cent. average, and 57½ per cent. below average.

The annual volume of reports issued by the firm of Barthelemy, Estienne & Co., of Marseilles, in treating of the French crops divides the departments into five classes. In fifteen departments, embracing an acreage of nearly 6,000,000 in cereals, the wheat-crop is good; in twenty-six departments, with a cereal acreage of nearly 12,000,000, the condition is moderately good; in fifteen other departments, with an acreage approximating 7,000,000, the crop is only middling; in twenty-four departments, with 7,750,000 of cereal acreage, the condition is poor; in eight departments, with a cereal acreage of over 2,000,000, the condition is bad. In Holland, Belgium, and the wheat-growing region of which Hamburg is the market, the samples of the new crop were of unusual excellence and weight. At the August session of the Vienna Corn Exchange it was stated, as the result of statistical inquiry, that the average harvest of Austria, Germany, Southern Italy, Northern Russia, Denmark, Norway, and Sweden is rated as only middling, while a condition more or less inferior is stated in regard to the crops of Hungary, France, Switzerland, Upper Italy, Southern Russia, Roumania, the British Islands, and Prussian Silesia. In spite of the low valuation it was estimated that Austria and Hungary together would export from 5,500,000 to 6,000,000 centals. Advices from New York stated the American crop at 300,000,000 bushels, of which 65,000,000 were available for export. The information from France and Russia being from superficial inquiries, was not regarded as definitive.

Yet, with a prospect of short home-crops, below average in quality, prices in England were unsettled and showed a tendency to depression.

The cause of this indecision, doubtless, was the general uncertainty in regard to the extent and immediate availability of foreign supplies. As the news from America and Australia became more indicative of large yields in those quarters, and as the first reports of depressed yields in Eastern Europe were modified by subsequent advices, the tone of English farmers and holders became less confident and the hope of a remuneration for short crops by higher prices was reluctantly surrendered. The English wheat-farmer has no very cheering prospect of recovering the losses of the last few years. The French farmer has but little, if any, more encouragement than his English neighbor.

The sales of English wheat during the last week in August amounted to 37,979 quarters, at 53*s.* per quarter, against 28,027 quarters, at 57*s.* 2*d.* during the corresponding week of 1874. The London averages were 52*s.* 4*d.* on 1.084 quarters. The imports into the United Kingdom during the week ending August 21 amounted to 1,568,046 hundred-weights. The following week opened in Mark Lane, London, upon a small supply of English wheat, but with large foreign arrivals, more than half of which were from America. Both foreign and native had given way and prices fell off from 1 to 2 shillings per quarter, with a very limited trade. Essex and Kent, white, brought 42*s.* to 53*s.* per quarter; ditto, red, 42*s.* to 49*s.*; Norfolk, Lincolnshire, and Yorkshire, red, 42*s.* to 49*s.* Of foreign wheats, Dantzig mixed was quoted at 53*s.* to 57*s.*; Königsberg, 49*s.* to 54*s.*; Rostock, 48*s.* to 53*s.*; Silesian, red, 47*s.* to 50*s.*; ditto, white, 50*s.* to 53*s.*; Pomeranian, Mecklenberg, and Uckermark, red, 48*s.* to 50*s.*; Ghirka, 46*s.* to 49*s.*; Russian, hard, 44*s.* to 46*s.*; Saxonska, 48*s.* to 50*s.*; Danish and Holstein, red, 45*s.* to 50*s.*; American, red, 46*s.* to 50*s.*; Chilian, white, 51*s.*; Californian, 53*s.*; Australian, 52*s.* to 56*s.*

In Liverpool, Canadian white wheat, August 27, was quoted at 11*s.* 3*d.* to 11*s.* 6*d.* per cental; red club and golden drop, 10*s.* 9*d.* to 10*s.* 11*d.*; American white, 11*s.* 3*d.* to 11*s.* 6*d.*; ditto, No. 1 spring, 10*s.* 4*d.* to 10*s.* 6*d.*; ditto, No. 2 spring, 10*s.* to 10*s.* 3*d.*; Egyptian, 8*s.* 6*d.* to 11*s.* 6*d.*; Californian, 11*s.* 2*d.* to 11*s.* 10*d.*; Oregon, 11*s.* 7*d.* to 11*s.* 9*d.*; Chilian, 10*s.* 11*d.* to 11*s.*; Australian, 11*s.* 9*d.* to 12*s.*

In Paris, wheat ranged from 44*s.* to 50*s.* per quarter. The Journal Pratique d'Agriculture, of August 19, gives the average price of the French wheat-markets at 26.47 francs per quintal, a rise of 24 centimes from the previous week's quotations. The highest regional average—28.34 francs—was in the southeast; and the lowest—25.10 francs—was in the northwest. During the week ending August 28 six French country-markets had advanced; 32 were reported from calm to firm; 56 had declined, and 8 others showed the same tendency. The center and west had marketed the largest amount of grain. Tenant-farmers were especially anxious to realize money for their rents, which generally fall due at Michaelmas. Marseilles was paying 47*s.* 6*d.* per quarter for Ghirka wheat, and 43*s.* 10*d.* for Varna. Of 91 vessels with Black Sea wheat 69 were for Marseilles and 16 for England. At Bordeaux, old wheat was held at 47*s.* 9*d.* per quarter and new at 45*s.* At Brussels, native wheat brought 51*s.* and foreign 49*s.* per quarter. At Hamburgh the new wheat offerings were very fine, weighing 60 pounds per bushel, and bringing 53*s.* to 54*s.* per quarter. At Berlin and Saint Petersburg, wheat was quoted at 46*s.*, and at Buda Pesth, in Hungary, at 47*s.*

FLOUR.—In London at the opening of the last week in August there was but a small supply of English flour, but a good supply of foreign, mostly in barrels, betraying its American origin. A paralysis seemed to have come upon the trade, which improved very slightly, if at all, toward the close of the month. The best town-households ranged from

43*s.* to 47*s.* per sack of 280 pounds; best country-households, 38*s.* to 40*s.*; Norfolk and Suffolk, 35*s.* to 37*s.*; American, 24*s.* to 29*s.* per barrel of 196 pounds. The imports into the United Kingdom during the week ending August 21 amounted to 137,474 hundred-weights.

In Liverpool, English and Irish superfines were quoted (August 27) at 37*s.* to 39*s.* per 280 pounds; ditto, extra, 40*s.* to 42*s.*; French, 43*s.* to 52*s.*; Trieste, 54*s.* to 67*s.*; Chilian, 36*s.* to 39*s.*; Californian, 41*s.* to 45*s.*; American, western and extra State, 26*s.*6*d.* to 28*s.*6*d.* per barrel; Baltimore and Philadelphia, 21*s.*6*d.*; Ohio and extra, 29*s.* to 31*s.*6*d.*; Canadian and extra, 29*s.* to 32*s.*

The flour-trade of Paris during the week was quiet, no change of prices being noted. For consumption the quotations ranged from 57 francs to 61 francs per 157 kilograms, or 36*s.* 7*d.* to 39*s.* 2*d.* per 280 pounds. The "eight marks" brand, for August, closed at 60.75 francs per 157 kilograms, or 39*s.* per 280 pounds; superior flour, 58.75 francs, (37*s.* 9*d.* per 280 pounds.)

MAIZE.—A heavy import of maize is noted during the last week of August in London, which was slowly disposed of at a decline of 1*s.* per quarter. Near the close of the month there were over 20,000 quarters on hand, with a drooping tendency. White was quoted at 32*s.* to 34*s.* per quarter; yellow, at 31*s.* to 35*s.*

In Liverpool, American mixed brought 33*s.* 3*d.* to 33*s.* 6*d.* per 480 pounds; Galatz, 35*s.* to 35*s.* 3*d.*; Trieste, 33*s.* to 34*s.*

At Paris, good maize brought 21.50 francs per 100 kilograms, or 37*s.* 3*d.* per quarter.

At Hamburg mixed American and small Hungarian yellow maize were firm at 35*s.* 6*d.* to 36*s.* 6*d.* per 480 pounds, free on board.

MONTHLY REPORT

OF THE

DEPARTMENT OF AGRICULTURE

FOR

OCTOBER, 1875.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1875.

CONTENTS.

MONTHLY REPORT.

DEPARTMENT OF AGRICULTURE, STATISTICAL BUREAU,
Washington, D. C., October 20, 1875.

SIR: I submit herewith for publication a digest of the monthly statistical returns for October; the centennial address of the Commissioner of Agriculture; an entomological record; microscopic observations; and minor statistics.

Respectfully,

J. R. DODGE,
Statistician.

HON. FREDERICK WATTS,
Commissioner.

DIGEST OF CROP REPORTS.

WHEAT.

The wheat-crop of the present year is a short one, and the deficiency is augmented by a marked deterioration in quality.

The little grown in New England is as small a quantity as ever, but not much reduced. The Middle States have about two-thirds of the crop of last year, though the decline is unequal, being greatest in New York and becoming less in degree with lower degrees of latitude. Virginia is the last State in this direction to show a reduction in yield; all the other Southern States have increased their production, some of them 50 to 75 per cent. None of the States east of the Mississippi, except Wisconsin, appear to have equaled the crop of last year. Minnesota is credited with an increased production, notwithstanding the ravages of grasshoppers and the losses from sprouting in the shock. The other prairie States, as far as reported, show a decrease, but the extension of area, both in reported and unreported counties, may make up in some degree this deficiency on a final canvassing for aggregate estimates. The Pacific coast crop is also short.

The average for the entire territory reported the present month is about 80 per cent. of last year's production. If this indicates the total depreciation, it amounts to nearly 62,000,000 bushels, and gives a crop of 246,000,000 bushels. But the quality is also lower than last year, and the depreciation is heaviest in what are known in a special sense as wheat-growing regions. In quality, the crop averages 84, or 14 per cent. below sound condition. This is equivalent to a further reduction of the crop, though it means poorer bread rather than less of it.

The losses by sprouting and rotting in shock or stack produced in

many places a panic, which stimulated exaggeration, and the natural result is the ultimate conclusion that "the loss is not so heavy as was expected." It is bad enough, however, when shipments of wheat from Maryland to Ohio are necessary to make a mixture that will produce a passable flour. The wheat of best quality is to be found in Delaware, Maryland, the South, the Pacific coast, and in New England. That of the West averages lower than usual in every State, and among the lowest averages are those of Indiana, West Virginia, Ohio, Kentucky, and Illinois.

The following brief extracts are appended:

MAINE.—*Piscataquis:* Reduced 25 per cent. by weevil and rust. *Androscoggin:* Very fine. *Waldo:* Injured by rust and midge. *York:* Did not meet expectations when thrashed.

NEW YORK.—*Genesee:* Nearly a failure, and the little we get poor in quality. *Onondaga:* The yield better than was expected, and the berry fair.

PENNSYLVANIA.—*Bucks:* Yielding worse than anticipated, and the quality not No. 1. *Bedford:* The fine quality injured by growing in the shock. *McKean:* Sprouted badly. *Elk:* A much larger acreage than usual, very heavy yield, and quality superior; by all odds the largest crop ever raised.

MARYLAND.—*Calvert:* Much badly sprouted. *Howard:* The yield, on thrashing, proves far superior to the small expectation. *Wicomico:* Excellent in quality.

VIRGINIA.—*Rockingham:* A much better yield than promised, but injured in quality by the rains. *Carroll:* A total failure. *Stafford:* An immense amount damaged by the rains, but yet the quantity is larger and the quality better than last year. *Halifax:* The quality injured by the wet weather. *King George:* About one-third of the crop lost by the excessive rains. *Prince William:* Fultz wheat ahead in yield, but Tappahannock in quality. Drilled wheat stood the winter best and gave the best yield. *Charles City:* Very much injured in quantity and quality by the rains. *Chesterfield:* Quality good except where injured by the rains. *Essex:* Much injured by sprouting in the shock. *Highland:* Much injured in the shock. *Culpeper:* Fully one-half damaged, and most of it lost altogether. *Madison:* Many crops badly damaged in the shock. *Westmoreland:* All not thrashed when the rains commenced, seriously damaged. *Wythe:* The crop was very fine, but could scarcely be secured, owing to wet weather, and fully one-half is not fit for bread.

NORTH CAROLINA.—*Greene:* Much more damaged than was expected when harvested. *Hertford:* The absence of our old enemy, rust, resulted in a better crop of wheat than usual. *Person:* Damaged in the stack. *Yancy:* All more or less injured in the shock.

ALABAMA.—*Randolph:* The crop more than double that of last year, and the quality superior. *Calhoun:* Much better than last year, and quality superior.

MISSISSIPPI.—Twenty bushels to one last year.

TEXAS.—*Coryell:* About 100,000 bushels of good quality raised. Price, $1 cash per bushel. *Caldwell:* Over 20,000 bushels raised; the largest acreage and yield since the war. *Collin:* The crop thrashed out remarkably fine. *Titus:* The acreage was much larger than in any previous year, and the quality exceeds any former crop.

ARKANSAS.—*Columbia:* At least ten times as much as usual raised. *Cross:* A larger crop than ever before known. *Stone:* Heaviest yield for many years. *Fulton:* Increased acreage and yield. *Jackson:* The first year any wheat has been shipped to market since the war. *Sharp:* Considerably damaged in the field by rains. *Marion:* Never the like produced before. *Perry:* The very high figures arise from the fact that the amount sown was extraordinary, more than double that of the previous year. *Franklin:* The product fully tenfold greater than last year and of a very good quality.

TENNESSEE.—*Lincoln:* Sixty per cent. of the crop more or less injured by rains before thrashing. *Giles:* Acreage and yield much larger than since the war, but damaged by rains. *Greene:* Extensively damaged in the shock. *Smith:* Injured in the shock. *Blount:* Damaged in the shock. *Carter:* Very badly damaged in the shock. *McMinn:* Not so badly damaged in the shock as was thought before thrashing; grain full and plump. More wheat shipped from this county than in any one year since the war. *Dickson:* Damaged in the shock 15 to 20 per cent. *Wilson:* Product 50 per cent. greater than last year, but the quality not so good; damaged by the rains. *Putnam:* Was a very good crop, but much sprouted in the shock. *Robertson:* Damaged 50 per cent. in the shock. The Amber, and particularly the Fultz, less damaged than the white varieties.

WEST VIRGINIA.—*Pocahontas:* Not more than one-half a crop, badly damaged. *Barbour:* Spoiled by the wet season. *Fayette:* So much sprouted in the shock that farmers find it difficult to get seed that can be relied on. *Mercer:* Lighter than expected, and

considerably damaged by rains. *Raleigh:* Injured by the wet weather. *Doddridge:* Nearly destroyed by the rains. *Wetzel:* A light crop, and much of it in a damaged condition. *Boone:* One-half or more of what was not carried away by the flood rotted in the shock.

KENTUCKY.—*Allen:* Greatly damaged in the shock. *Lincoln:* Not damaged to the extent supposed. *Spencer:* Twenty-five per cent. destroyed by the rains. *Bath:* The quantity and quality greatly reduced by the rains. *Fayette:* About two-thirds of what was harvested was lost by the rains, and the remainder greatly damaged. *Metcalf:* A good crop, more than half damaged before it could be thrashed.

OHIO.—*Medina:* Turns out much better than was expected. *Pickaway:* The quality is so bad that our millers are importing wheat from Baltimore to supply their trade. *Franklin:* Impossible to save any except the very earliest in good condition. *Noble:* One-fourth of the crop grew in the shock and washed off. *Sandusky:* Quality inferior, but much better than was expected. *Washington:* A great portion saved in poor condition. *Hancock:* Injured by the rains. *Delaware:* Injured by the wet. *Harrison:* Great damage by the wet weather. *Seneca:* Quality injured by the rains. *Athens:* Very short crop of inferior quality. *Richland:* Quality was excellent, but sprouted.

MICHIGAN.—*Grand Traverse:* Damaged fully 50 per cent. by rains in harvest. *Lapeer:* Quality excellent. *Tuscola:* Has exceeded all expectation in quantity and good in quality. A small field of Clawson wheat is reported to have yielded at the rate of 52 bushels per acre, without extra treatment. *Shiawassee:* Light and much shrunken, but harvested in good condition. *Benzie:* Considerable sprouted. *Montcalm:* Darker color than last year. *Newaygo:* Nearly all thrashed, and turns out 15 to 36 bushels per acre. *Ottawa:* The best crop in twenty years in yield and quality, yielding in some instances 30 to 35 bushels per acre, and weighing 62 pounds to the bushel. *Alpena:* Winter-wheat yielded 40 to 50 bushels per acre in fields of 10 and 12 acres. *Hamilton:* Badly damaged; will not pay expenses.

INDIANA.—*Tipton:* Scarcely fit to eat; badly eaten by the midge and chinches before harvest, and damaged by rains after. *Carroll:* Very much injured in yield and quality by the wet weather. *Howard:* But a small portion saved in merchantable condition. *Ripley:* Very poor; damaged by the rains. *Madison:* A light crop; damaged at least one-third by the floods. *Franklin:* Only a part of a very poor crop saved, and that very much sprouted; it is unfit for flour. *Pike:* Fultz wheat sown by Mr. James Barker averaged 38½ bushels per acre, and weighed 62½ pounds to the bushel. *Gibson:* At least 22 per cent. lost or damaged by the wet weather. *Grant:* Half a crop.

ILLINOIS.—*Carroll:* Light yield and poor quality. *Pope:* Plump grain, but injured in the shock. *Mercer:* Poor in quality. *Fayette:* Four-fifths, more or less, damaged by the rains. *Shelby:* Makes but a third-rate flour. *Fulton:* Poor in quality. *Mason:* Light and poor. *Montgomery:* Badly damaged; a great deal musty. *Lee:* Average yield of 9 bushels per acre, of fair quality. *Edwards:* Not quite so badly damaged as was anticipated.

WISCONSIN.—*Waupaca:* Very good. *Juneau:* Spring wheat was badly injured by chinches, except that sown where clover had been turned under the previous year. This is a noticeable fact. *Walworth:* Will not exceed 12 bushels per acre. *Crawford:* Turned out better than expected.

MINNESOTA.—*Chisago:* Considerably damaged by rains. *Mower:* The yield unprecedented; the damage from rains at least 10 per cent. *Redwood:* Not damaged as much as was feared; not over 10 per cent. will be classed as "rejected;" all of a plump, clear, bright berry. *Fillmore:* Reduced 15 per cent. in quantity and quality by wet weather. *Olmsted:* Injured in the shock and stack. *Rock:* Berry fine and plump. *Steele:* A deterioration of 10 per cent. from a very fine quality by the wet weather. *Stevens:* Better yield than for some years. *Dodge:* Not damaged as much as was supposed.

IOWA.—*Marion:* Quality inferior. *Hardin:* Considerably blighted and injured in shock and stack. *Harrison:* Greatly injured by blight and wet weather. *Montgomery:* Injured in the stack. *Muscatine:* Light, shrunken, and discolored. *Delaware:* Damaged in the shock and stack. *Greene:* Materially injured in shock and stack. *Howard:* No such trying time for grain in the shock ever before occurred in the county. Many are waiting for grain to freeze dry before thrashing. *Washington:* Poor in quality and damp in stack. *Des Moines:* Utterly useless for making bread. *Hancock:* Badly shrunk and bleached. *Johnson:* But little over half a crop, of poor quality. *Franklin:* Berry light; damaged by rain. *Monona:* Had 75 acres of wheat on new breaking on Missouri bottoms; but will have to buy my flour for bread. *Shelby:* All more or less damaged in the stack. *Jefferson:* The most complete failure I ever saw. *Madison:* Yield light, and quality No. 3 or "rejected." *Cerro Gordo:* Quality inferior. *Ida:* Badly damaged in the shock and stack.

MISSOURI.—*Jefferson:* Yield good, but fully one-third damaged. *Oregon:* Considerably damaged by the wet weather. *Camden:* Was a clear loss of 40 per cent. of the crops by the excessive rains, and the remainder badly damaged. *Greene:* Greatly damaged by the rains. Many persons having wheat on low grounds had not a sheaf left—all washed away. *Crawford:* Scarcely a crop in the county not more or less sprouted

Morgan: Badly damaged. *Perry:* Heavy product, but damaged one-sixth by the rains. *Iron:* All more or less damaged by wet harvest. *Ozark:* Damaged by wet. *Adair:* May be called a total failure; the little we saved not fit for flour. *Cole:* Plenty, but spoiled in the stack.

KANSAS.—*Reno:* Sown early, on deep-plowed land, has averaged as high as 47 to 55 bushels, while shallow plowing, drilled late, has run as low as 8 bushels per acre. *Labette:* Looks more favorable as we progress in thrashing. *Montgomery:* Yield increased from 300,000 bushels last year to 500,000 this year, but the quality not so good. *Cowley:* Product, 150,000 bushels, a full average of 20 bushels per acre. One of our farmers raised 6,000 bushels, averaging 25 bushels per acre.

NEBRASKA.—*Burt:* Coming out of stack in poor condition. *Merrick:* Good crop; some damaged by wet weather. *Clay:* Yield and quality better than last year, but damaged by wet. *Otoe:* Reduced in quantity and quality by the wet weather. *Knox:* The Michigan white, introduced this spring, yielded 16 bushels per acre, while the beardless, the variety commonly cultivated, yielded 10 to 12.

CALIFORNIA.—*Del Norte:* Very fine. *Contra Costa:* The yield was satisfactory and the quality good. *Placer:* Yielded much better than was anticipated before thrashing. The quality superior. *Sonoma:* Very plump and full.

CORN.

The condition of the corn crop, as reported on the 1st of October, is exceptionally high. Its average status in several of the States is above the standard of good condition; *i. e.*, in extra thrift and productive vigor. This is the case in all the Southern States except Louisiana and Texas; in all the Middle States except New York; and in Missouri and Kansas in the West. In the remaining States, with few exceptions, the averages are higher than usual of late years, after the customary ravages of insects and withering of drought. Wisconsin appears to have sustained most injury from frost. In the Ohio Valley States the extraordinary promise of September has been somewhat reduced by frost in low lands, or in the area planted late and slow in maturing. There will be a large quantity of unmerchantable corn soft and loose on the ear, and a considerable proportion of unsound fodder. The crop will be comparatively large in quantity, but poor in quality, except in the Southern and Pacific States. Some injury from frost, between September 20 and 30, resulted as far south as Tennessee in the West, and from Maine to Virginia on the Atlantic Coast. In the South, the principal losses resulted from storms. The equinoctial in Texas was very destructive in the southern part of the State. Worms caused some damage in Florida, and drought was injurious in portions of the State.

A return of quantities harvested will not be made till next month, when the comparative result will be better understood. The following extracts from correspondence are given:

MAINE.—*Piscataquis:* Full average, and 30 per cent. better than last year. *Androscoggin:* Very good. *Sagadahoc:* Considerably injured by frost. *Waldo:* A good growth, but injured by early frost. *Franklin:* Injured by the cold weather in September. *Cumberland:* Injured by frost in some places. *York:* Ten per cent. injured by the frost; ears well filled and the kernel plump.

NEW HAMPSHIRE.—*Carroll:* Large yield. *Rockingham:* Some pieces injured by frost.

VERMONT.—*Grand Isle:* Late, and not well ripened.

NEW YORK.—*Queens:* Cutting up in fine order, with a heavy crop of stalks for fodder. *Wayne:* Badly damaged by severe early frosts; the poorest crop in twenty years. *Richmond:* Splendid in yield and quality. *Genesee:* Injured by frosts. *Steuben:* Matures slowly and unevenly. *Washington:* Ripening well. *Wyoming:* Somewhat injured by frost. *Onondaga:* A light crop; the frosts too early for late corn. *Delaware:* Favorable weather for ripening.

NEW JERSEY.—*Camden:* Much damaged by frost. *Gloucester:* Very backward, but now ripening rapidly and almost out of danger.

PENNSYLVANIA.—*Bucks:* Bids fair for a fine crop. *Clearfield:* Very materially reduced in quality, though not in quantity. *Bedford:* Good growth, but late. *Delaware:* Seldom better. *Armstrong:* Late corn damaged by frost, September 24. *Indi-*

ana: The largest crop ever raised; all in the shock. *Lawrence:* Will be considerable soft corn, owing to frost. *Elk:* A very heavy growth; all injured more or less by frost. *Franklin:* Yield large, and the quality good as can be.

DELAWARE.—*Kent:* Fine yield.

MARYLAND.—*Worcester:* The largest crop for ten years. *Washington:* Never better. *Harford:* The finest crop for years. *Howard:* One of the best crops ever raised. *Wicomico:* Much above average. *Baltimore:* The best crop for many years. *Cecil:* Never better.

VIRGINIA.—*Pulaski:* Maturing well. *Rockingham:* Extra good, and being shocked in fine condition. *Campbell:* Excellent crop. *Rappahannock:* Very good. *Warwick:* The crop now matured is the largest for ten years. *Carroll:* Never better. *Stafford:* The crop very large. *Halifax:* Matured; the largest crop for several years. *King George:* The best crop for years, with promise of superior quality. *Orange:* Magnificent crop. *Charles City:* Not as good as was supposed. *Floyd:* Injured by early frost. *Matthews:* The yield above average, but the condition below; a great deal of rotten corn, owing to the excessive rains. *Spottsylvania:* The largest crop since the war. *Chesterfield:* More forward than formerly. *Essex:* The best crop for many years; quality excellent. *Greenville:* Some late fields have suffered from frost. *Goochland:* Prospect for a large crop. *Highland:* Better than in former years. *Page:* Favorable weather for maturing. *Accomac:* A larger crop than for ten years. *King and Queen:* Very fine crop. *Madison:* Very fine, but ten days late. *Elizabeth City:* The yield better than for many years; the quality medium. *Mecklenburgh:* Unusually good on high lands; on low, moderate. *Wythe:* The crop far above average. *Fluvanna:* Unusually well made.

NORTH CAROLINA.—*Forsyth:* Very fine; worth 50 cents per bushel. *Gaston:* Good on upland and exceedingly good on well-drained low grounds. *Pasquotank:* Very much injured by the excessive rain, yet average. *Tyrrell:* The heaviest and best crop for years; the ears filled to the utmost. *Chowan:* The best crop for years. *Franklin:* Unusually good. *Wilson:* Improved in September. *Hertford:* The best crop since 1860. *Pamlico:* Most excellent. *Person:* Very fine; on uplands the heaviest yield ever known. *Union:* Promise of the largest crop in twenty years. *Camden:* Not as good as August promised. *Anson:* Cut off on the bottoms by alternate rains and droughts. *Caldwell:* The rains have delayed the ripening of much of it, and the crop is yet uncertain. *Duplin:* Will not make more than half a crop on sandy land; better on stiff land.

SOUTH CAROLINA.—*Beaufort:* Cut off one-half by continuous drought. *Clarendon:* Inferior in quality; not well matured. *Colleton:* That planted in March turning out finely, but that planted later almost a failure, owing to the drought. *Newberry:* The yield light on uplands. *Lexington:* Late, injured by drought in September. *Marlborough:* Never better. *Orangeburgh:* The quality 100, but the yield only 70.

GEORGIA.—*Harris:* Short on upland; good on bottoms. *Muscogee:* Rains came too late for the crop. *Douglas:* Most farmers will make enough to do them another year without buying. *Towns:* Better than for several years, and mostly out of danger. *Walker:* An abundant crop. *Cobb:* Injured in low lands by overflow. *Decatur:* Very short crop.

FLORIDA.—*Jackson:* Recovered considerably after the rains, and heavier than anticipated. *Columbia:* Much injured by the drought. *Gadsden:* The crop will be ample for home consumption. *La Fayette:* Late corn badly injured by drought and worms.

ALABAMA.—*Montgomery:* Pretty satisfactory. *Lawrence:* Very good, and abundant. *Calhoun:* Fully matured, and 10 per cent. more than last year. *Dallas:* Good. *Jackson:* A great deal blown down and will rot. *Colbert:* Never finer or more abundant.

MISSISSIPPI.—*Wayne:* A good crop is made. *Cherokee:* The product over 100 per cent. greater than last year; the best crop ever grown. *Franklin:* Much better than for years; most of it housed in good condition. *Winslow:* Will be 25 per cent. more than last year. *Holmes:* Light; the summer rains too late. *Jefferson:* Good; not yet harvested.

LOUISIANA.—*Franklin:* Seriously damaged by a storm of rain on the 17th and 18th. *La Fayette:* Considerably damaged by wind and rains. *Carroll:* A plenty for home consumption.

TEXAS.—*Coryell:* A crop of good average quality, all safely gathered. *Dallas:* Crop short, but sufficient for local demands; price 50 cents. *Washington:* Much injured by the equinoctial storm. *Burnet:* Nearly all gathered; yield 15 bushels per acre. *Hunt:* Cut short by drought, grasshoppers, and chinches. *Polk:* More or less injured by a storm of rain and wind, which lasted thirty-six hours. *Madison:* All matured, and nearly all gathered in good condition. *Rusk:* Being gathered; the yield light. *Williamson:* Quality good; product 15 to 40 bushels per acre, according to cultivation; average 22. *Cooke:* Fine; now being cribbed. *Lamar:* More raised than ever before. *Upshur:* Much damaged by smut. *Bosque:* Cut short by drought; great complaint of smut. *De Witt:* The quality for a crop injured by drought better than usual. *Matagorda:* Reduced to 25 by the late destructive gales.

ARKANSAS.—*Calhoun:* Gathered, and the best crop ever raised in the State. *Arkan-*

sas: First rate all through the county. *Columbia:* Being housed; the quality better than usual, and the quantity 50 per cent. greater than last year. *Stone:* Heavy crop. *Prairie:* Shortened by the early drought, but we will have enough and to spare. *Fulton:* One of the best crops ever raised. *Jackson:* The best crop we ever had. *Izard:* The best crop ever made. *Marion:* Have raised more than for the last three years put together. In Marion, Boone, Carroll, and Baxter Counties thousands of bushels offering for sale at 25 cents, and no sale. *Scvier:* Finely matured, and fine weather for gathering.

TENNESSEE.—*Grundy:* Some injury from frost. *Lawrence:* The best crop since the war. *Greene:* Injured by drought. *Smith:* The amount above average and the quality most excellent. *Blount:* Good. *Bradley:* Exceedingly abundant. *McMinn:* Well filled and heavy. *Fayette:* Beyond peradventure a large crop; selling at 40 to 50 cents; the general price at this season, for five years past, 90 cents to $1. *Henry:* Matured and the heaviest yield ever produced in the county. *Putnam:* An abundant crop of fair quality. *De Kalb:* A huge crop. *Macon:* Has come out greatly. *Robertson:* The early planted and well tended fine, but the late planted, a large portion of the crop, not so good. *Lauderdale:* On bottoms only about one-fifth of the crop saved from destruction by overflow.

WEST VIRGINIA.—*Grant:* Late and much of it yet green. *Marion:* Late; first planting destroyed by cut-worms. *Fayette:* Reduced by the wet weather and want of culture. *Mercer:* Not quite average with last year; some damaged by frost. *Putnam:* Early planted, very fine; late, indifferent. *Hancock:* Above average in quantity, but injured by frost. *Ritchie:* Much later than usual in ripening, and somewhat injured by frost. *Braxton:* Very promising. *Brooke:* Promised to be the largest ever grown here, prior to September 19th, but from the 19th to the 25th sharp frosts killed the blades and stopped the maturing, a large part being still in the milk. *Jefferson:* Reduced in yield 3 or 4 per cent. by chinches. *Wetzel:* Some damage from frost.

KENTUCKY.—*Lincoln:* Very promising and advanced beyond injury by frost. *Warren:* Decidedly the finest crop ever produced. *Jefferson:* The season very favorable. *Carroll:* While the condition is 100 the product will not be above 90, owing to loss by overflow. *Owsley:* Will not be half a crop owing to want of working, weeds, and high waters, occasioned by the rains. *Graves:* Unprecedentedly fine; excellent in quality and 25 per cent. above average in quantity.

OHIO.—*Pickaway:* A heavy crop, except on low, flat ground, where it is a failure. *Miami:* The largest crop ever produced in the county. *Preble:* The acreage 20 per cent. greater than last year, but the condition not above 80, owing to the wet weather and severe frosts. *Fulton:* Has matured very finely. *Franklin:* A heavy crop on high lands; ruined by rain along the streams. *Montgomery:* The only remunerative crop. *Williams:* A great deal of soft corn caught by frosts. *Guernsey:* Late corn considerably injured by two severe frosts. *Lucas:* Some injured by frost on the 21st. *Noble:* Late corn injured by frost. *Sandusky:* Above average in quantity and in good condition. *Adams:* An abundant crop. *Hancock:* About one-half the crop in good condition, the remainder frost-bitten before ripe. *Morgan:* Heavy frosts on the 23d and 24th killed all that had not been cut. *Perry:* Late corn injured very much by frosts on the 23d and 24th. *Delaware:* Yield enormous, never greater, and quality good. *Harrison:* Very heavy. *Mahoning:* Mostly killed by frost two weeks ago; will be much unsound corn. *Seneca:* On clay-soils injured very much by frosts. *Athens:* On low lands destroyed by floods, yet about an average; some late frosted.

MICHIGAN.—*Kalamazoo:* Injured by a heavy frost September 18. *Grand Traverse:* Back from the bay, injured by frosts. *Lapeer:* Very heavy. *Wexford:* All killed, only in the milk, September 23, by frost. *Tuscola:* Badly damaged by frost. *Calhoun:* Backward, and nipped by the frost. *Gratiot:* Cut short by frost. *Hillsdale:* Ten days late, and the fodder injured by frosts very much. *Manistee:* Seriously damaged by frosts in September. *Monroe:* The best crop ever raised. *Oceana:* Great damage from a heavy frost. *Barry:* Hurt by frost September 20. *Delta:* Damaged very badly by early frosts. *Saginaw:* Cannot tell the effects of frost on its ripening in the shock. *Shiawassee:* Damaged by drought and by frost. *Benzie:* Injured by frosts. *Newaygo:* The fodder nearly ruined by frosts, and not more than 25 or 30 per cent. of the corn will be merchantable. *Ottawa:* Suffered from frosts. *Charlevoix:* In some parts injured by a sharp frost the first week in September. *Livingston:* Heavy, but damaged by early frost. *Mason:* All killed by frost. *Saint Joseph:* Reduced 15 to 25 per cent. by early frost. *Wayne:* Never better, but somewhat injured by frost. *Oakland:* A larger acreage than ever before, and would have been very heavy had it not been retarded by cold in September.

INDIANA.—*Tipton:* Badly bitten by frosts; prospect that there will be no solid corn in the county. *Carroll:* Frost-bitten; much will be of very inferior quality. *Howard:* Late corn, being 25 per cent. of the crop, severely injured by heavy frosts September 20 and 21. *Ripley:* Good, and now out of the way of frost. *Madison:* Average on high lands; very poor on low. *Noble:* Good, and generally matured. *Franklin:* A heavy growth; kept green until the frosts, from the 20th to the 30th; not thought

to be much injured. *Tippecanoe:* Much late corn injured by frosts. *Marion:* A very light crop, unusually late, and the fodder killed by frosts. *Union:* Damaged by storms blowing it down, and by frosts. *Wabash:* Damaged by frost about 10 per cent. *Gibson:* Good where not drowned by the wet. *Grant:* About half a crop. *Steuben:* A great quantity of soft corn. *Switzerland:* The largest crop ever produced, and the quality unsurpassed. *Perry:* Good. *Hamilton:* Considerably short, and much injured by heavy frosts ten days ago.

ILLINOIS. *Hancock:* The largest crop ever raised, and out of danger from frost. *Pike:* Very good, but late. *Carroll:* Cut off at least 30 per cent. by premature frosts. *Pope:* Injured by rains in the summer and by dry weather in September. *Clark:* Heavy losses on the bottoms by the floods, but fully compensated by the superior growth on the high lands. *Mercer:* Late, damaged by frosts, but the crop is large and the quality generally good. *Stephenson:* Frosts in August ruined much. *Bureau:* A very heavy crop. *Cook:* An extra crop, well ripened. *De Kalb:* Owing to frosts there must be enough soft corn to sink the average down to 100. *Fayette:* Good on high lands, not injured by frosts. *Grundy:* Will average 50 bushels per acre, all sound. *Shelby:* Drying off finely and bids fair for a larger yield than generally expected. *Vermillion:* Nearly all ripened and will be A No. 1. *Fulton:* The finest crop since 1860. *Logan:* Heavy crop, but somewhat injured by frosts and will be chaffy. *Mason:* Good but considerably frosted on low lands. *Montgomery:* Fine, though drowned out in some parts. *Ogle:* Injured by frosts. *Lee:* Will not average half a crop of good sound corn. *De Witt:* As fine a prospect as was ever seen until frost entirely killed the stalks; nearly all will be loose on the ear and much too soft for market. *Massac:* Injured by dry weather. *Sangamon:* Cut by frost.

WISCONSIN.—*Crawford:* In low and narrow valleys a total failure, but average in some places. *Greene:* More damage by the frost in August than at first supposed; corn thought good for half a crop proves to be less than one-third. *Waupaca:* Very few fields came to maturity. *Juneau:* Only 75 per cent. of a crop, owing to frost in August. *Ozaukee:* Killed by the early frosts. *Pepin:* Not so much injured by frost as was expected. *Richland:* Cut short by frosts. *Milwaukee:* Frosts about the 20th of September made sad havoc with corn. *Walworth:* A failure in many parts; some farmers will not have a bushel of sound corn. *Brown:* Affected by frosts. *Adams:* Frost in August destroyed nearly 25 per cent. of the entire crop—killed it outright; the remainder generally unripe. *Outagamie:* Injured very much by heavy frost August 21. *Pierce:* Considerable soft corn. *Vernon:* Almost a failure; all in the valleys killed by frost in August. *Saint Croix:* Shortened by frost; inferior in quality.

MINNESOTA.—*Goodhue:* Caught by a severe frost. *Mower:* Killed by frost on the 22d. *Redwood:* No better crop ever raised and now out of danger. *Fond du Lac:* Early frosts have left much soft corn. *Portage:* In some fields, totally destroyed by frosts; in others, uninjured. *Fillmore:* Nearly ruined by frosts on the low lands. *Olmstead:* Damaged by frost. *Winona:* Late twenty days; killed by frost in some places. *Wright:* In some localities destroyed by a heavy frost August 21. *Steele:* Ripened in average condition, with good yield and largely increased acreage. *Mille-Lacs:* Suffered considerebly from frost.

IOWA.—*Story:* Damaged by frost 10 per cent. *Marion:* Good on dry ground; poor on wet. *Poweshiek:* Badly damaged by frost September 20. *Allamakee:* Much damaged by frost. *Clinton:* Very heavy, but all injured more or less by killing frost September 17 and 20. *Hardin:* Much of the crop will be light and chaffy. *Harrison:* Short; injured by the grasshoppers and excessive wet. *Lee:* Now out of danger, and will turn out far better than indicated by my last report. *Mahaska:* Quite backward. *Montgomery:* Well matured before frost. *Delaware:* Injured by frost. *Guthrie:* Late, and some damaged by frost: *Decatur:* Badly cut by frost. *Washington:* A part of the crop splendid; that replanted injured by frosts. *Des Moines:* Killed by frost ten days ago. Will have a large amount of soft corn. *Hancock:* Frost has damaged most of the corn. *Johnson:* Good. *Franklin:* Killed by frost before ripe. *Shelby:* Cut by frosts on some bottom-lands. *Madison:* Light, owing to frost. *Cerro Gordo:* Has regained some of its lost time and bids fair for almost average. *Ida:* On low ground, loose on the cob. *Iowa:* Injured by frost. *Tama:* One-third of the crop damaged by frost 10 to 20 per cent.

MISSOURI.—*Barton:* Enormous crop. Have a field of 300 acres that will average fully 60 bushels per acre. *Camden:* Being gathered in good condition. Many fields, with stalks averaging 15 feet in height, will husk out 100 bushels of fine sound corn to the acre. *Nodaway:* Fully 80 per cent. of the first planting was eaten by grasshoppers. The replanted promised more than a full crop, but frosts in September injured it fully 40 per cent. *Crawford:* Very good. *Perry:* Very good, but some injured by drought since the 1st of August. *Platte:* Will have a large surplus if not injured by frost. *Clay:* The first planting destroyed by grasshoppers, and the second by rains; the third is as fine as ever seen and maturing well. *Iron:* Extra good. *Moniteau:* Enormous crop. *Ozark:* Better than for years; some fields yield 75 bushels per acre. *Pettis:*

A splendid crop; better than for six years. *Cole:* Has ripened splendidly; it sells already at $1 per barrel, equal to five bushels.

KANSAS.—*Ellsworth:* Better than ever before. *Franklin:* The grasshopper corn is almost safe from the frost; the worm is working in it, and will injure it considerably. *Douglas:* No frost to hurt our late-planted corn, and the prospect is that it will ripen well. *Nemaha:* Immense crop. *Ellis:* Very heavy crop. *Woodson:* A vast surplus, and no outside demand. *Jackson:* The prospect for a heavy crop never better. *Leavenworth:* Planted in July, and tens of thousands of bushels are out of the way of frost. *Barton:* Materially affected by a worm, resembling the cut-worm, which works in the point of the ear while the corn is soft. They have damaged the product 25 to 30 per cent. *Brown:* The first planted, left by the grasshoppers, is excellent, and the late is coming out very fair. *Cloud:* Ripening all right. *Linn:* Late planted generally, though not all, out of the way of frost; cut a little by it in low places on the morning of October 1. *Osage:* The finest crop I ever saw; much of it will average 75 bushels per acre; all sound and good. *Cherokee:* Splendid; early corn now fit to gather. *Labette:* Beyond all expectations. *Lyon:* Very abundant and cheap. *Montgomery:* Unusually large crop. *Cowley:* The best crop I have seen in this part of Kansas. *Allen:* Very favorable weather for maturing our late corn. *Graham:* Ripened well. *Shawnee:* Best crop for three years.

NEBRASKA.—A good crop, making an average of 60 bushels per acre. *Pawnee:* Damaged by frost September 20 to 22. *Boone:* Frosted September 16. *Johnson:* Nine-tenths safe, and the yield never better. *Burt:* Looks well, and is about out of danger. *Merrick:* Good. *Clay:* Good; will average about 40 bushels per acre. *Otoe:* The wet season has promoted wonderfully the growth of the corn planted after the grasshoppers left, yet much of it is likely to fail of ripening. *Richardson:* Looks splendid; that planted in July, after the grasshoppers left, now looks promising; the county will have a larger crop than ever before.

RYE.

The crop of 1874 was about an average one. The product reported this year falls short of that about 4 per cent. The crop is fully equal to last year's, in both yield and quality, in New England, and does not vary much from it in the South Atlantic and Gulf States, taken as a whole. Among them, the greatest decrease in product is in Georgia, 8 per cent., and the greatest increase 30 per cent., and 8 per cent. in quality, in Texas, which reported last year 13 bushels as the average yield per acre, and in Mississippi 9 per cent., and 3 per cent. in quality, on a yield of 9.4 bushels per acre. Arkansas, yielding last year 12.7 bushels per acre, reports an increase of 55 per cent. in product. The production of rye is not extensive in any of these States. In the States which grow it on a larger scale, the figures for comparative product and quality are, respectively, New York, 81 and 98; New Jersey, 79 and 97; Pennsylvania, 93 and 98; Maryland, 97 and 96; Virginia, 100 and 95; Kentucky, 88 and 84; Ohio, 71 and 79; Wisconsin, 129 and 105. Among the remaining States the product, compared with last year, is greater in Tennessee by 1 per cent., and in Kansas by 5 per cent., while in Nebraska it is less by 40 per cent. In others it ranges from 77 in Indiana up to 100 in Delaware, South Carolina, Florida, and Oregon. Between the Alleghanies and the Missouri the crop was considerably reduced in product, and largely in quality, by being overtaken by the extraordinary rains before it was garnered.

Among the foot-notes upon rye the following are selected:

MAINE.—*Androscoggin:* Very fine.

PENNSYLVANIA.—*Bedford:* Better crop than for several years.

MARYLAND.—*Howard:* Good, but somewhat damaged in the shock.

VIRGINIA.—*Carroll:* A total failure. *Madison:* Good. *Fauquier:* Almost a failure.

NORTH CAROLINA.—*Greene:* More damage than was expected when harvested.

GEORGIA.—*Towns:* Better than average.

ARKANSAS.—*Arkansas:* Splendid.

TENNESSEE.—*Giles:* Acreage and yield much larger than since the war, but damaged in quality by rains.

WEST VIRGINIA.—*Mercer:* Superior to the wheat crop, and not much damaged by the rains. *Doddridge:* Nearly destroyed by the rains.

KENTUCKY.—*Spencer:* Twenty per cent. destroyed by the rains.

OATS.

Returns make the entire product 5 per cent. greater than last year. Between the thirty-fourth and the forty-first parallels, as previously reported, an unprecedented crop, as reported July 1, was very largely diminished in the product saved, and universally damaged in quality by the long-continued and flooding rains. Early drought pinched the crop in Delaware, Maryland, and parts of Virginia, and ravages of the army-worm, extensive in Ohio, had some effect in adjoining States also in diminishing the product gathered. Yet in that section, as a whole, the vast quantities destroyed scarcely reduced the product below that of the previous year. The comparative figures are: Delaware, 63; Maryland, 91; Virginia, 81; North Carolina, 101; West Virginia, 94; Ohio, 100; Kentucky, 98; Tennessee, 102; Indiana, 77; Illinois, 106; Iowa, 107; Missouri, 109; Kansas, 84; Nebraska, 73. In all these States the quality is below that of last year, averaging about 88. Outside the rainy section, with few exceptions, superior crops in quantity and quality have been produced. The New England States return a quality averaging about 2 per cent. above, and an increase of about 7 per cent. in product, except in Rhode Island, where, owing chiefly to extraordinary havoc by the army-worm, it was reduced to 18 per cent. below. In five States which produce about two-thirds of the entire crop the figures representing the comparative product and quality are: New York, 106 and 96; Pennsylvania, 110 and 98; Ohio, 100 and 83; Illinois, 106 and 84; Wisconsin, 133 and 102. Michigan reports for average product, 121; quality, 105; Calhoun County reports that a yield of 60 bushels per acre is common; Mecosta, that a field of 10 acres yielded 84 bushels per acre; Alpena, that the crop will weigh 35 to 50 pounds per bushel; and Wayne, that it was never better. The averages in Minnesota are 101 for product and 97 for quality. The latter was injured in some localities by rains in harvest. On the Pacific Coast the crop about equals the preceding one in both yield and quality. In the South Atlantic and Gulf States the product equals last year's in Georgia; is less 9 per cent. in Florida, and 4 per cent. in Alabama, but is much greater in the remaining States; South Carolina, 20 per cent; Mississippi, 28; Louisiana, 6; Texas, 44; Arkansas, 74. The reported yield per acre last year in Texas was 27.2 bushels; in Arkansas, 15. In Texas, Titus reports that the crop exceeds all previous ones in acreage and quality; also that the Red Rust-proof is coming into general use, and giving universal satisfaction. Williamson reports an acreage fivefold greater than ever before, producing the same variety, which weighs 35 to 38 pounds per bushel. But Uvalde reports that the White Schonen is taking the lead of all other kinds. The quality throughout the State averages about 7 per cent. better than last year. In Arkansas, where the improvement in quality is 9 per cent., Fulton, Marion, and Baxter return better crops than were ever before produced. In Baxter, our reporter states that from the product of 65 dozen large plump grains of Norway oats he thrashed out 65 bushels; that is an average of $2\frac{3}{8}$ quarts per single grain. Extracts are made as follows:

MAINE.—*Androscoggin:* Good. *Waldo:* First rate yield; quality excellent.

VERMONT.—*Rutland:* A good crop. *Orleans:* Rusted, and are light in weight.

NEW YORK.—*Genesee:* Yield well, and of fair quality. *Sullivan:* Product light, but good quality. *Onondaga:* Very good in yield and quality.

PENNSYLVANIA.—*Bucks:* Much of the crop blackened by the rains in harvest. *Mifflin:* Four times the product of last year, and much better in quality. *Sullivan:* The best crop for many years. *Elk:* Weighed last year 28 pounds per bushel; this year 35. *Northumberland:* An extra large crop, but much injured by the rains.

DELAWARE.—*Kent:* Injured by drought in June.

VIRGINIA.—*Campbell:* Much injured by the rains. *Halifax:* Rusted, and the grain small and light. *Pittsylvania:* Increased in quantity, but inferior in quality. *Chesterfield:* Quality bad, owing to the wet weather. *Essex:* A failure, owing to a dry spring. *Madison:* Poor and light. *Wythe:* The crop was abundant, but most of it bad in quality from the wet weather. *Fauquier:* Almost a failure.

NORTH CAROLINA.—*Hertford:* Almost destroyed by drought. *Person:* Badly damaged in the stack by rains.

GEORGIA.—*Towns:* Better than average.

ALABAMA.—*Calhoun:* Badly injured by drought.

MISSISSIPPI.—*Wayne:* Suffered a little from rust.

TEXAS.—*Titus:* The acreage and quality exceed those of any former year; the Red Rust-proof coming into general use and giving universal satisfaction. *Uvalde:* The White Schonen very fine; taking the lead of all other kinds. *Williamson:* Acreage nearly 400 per cent. greater than ever before; product per acre about the same as last year; weight 35 to 38 pounds per bushel; price 45 cents per bushel of 32 pounds; kind, Rust-proof.

ARKANSAS.—*Arkansas:* Splendid. *Stone:* Heavier than for five years. *Fulton:* The best crop ever raised. *Baxter:* The greatest yield ever known. I thrashed 65 bushels of Norway oats, the yield of 65 dozen large, plump grains. *Marion:* Never the like produced before.

TENNESSEE.—*Greene:* Badly injured before and after cutting. *Blount:* Seriously damaged by the rains. *Carter:* Very badly damaged in the shock. *Dickson:* Damaged in the shock 15 to 20 per cent.

WEST VIRGINIA.—*Pocahontas:* Good in quantity, but light and chaffy. *Fayette:* Good yield, and not much injured by the wet weather. *Mercer:* Early sown not well filled; late sown, better. *Putnam:* So small a portion of the crop saved from ruin by wet weather, about the time of harvest, that I cannot report the quantity. *Doddridge:* Nearly destroyed by the rains. *Wetzel:* Badly damaged before they could be cut, and in some fields a worm stripped the stalks of grain.

KENTUCKY.—*Allen:* Greatly damaged in the shock. *Lincoln:* Grain plump and fine, but one-half lost by the rains and the remainder saved in a damaged condition. *Ohio:* Very promising up to harvesting, but totally lost by excessive rains. *Spencer:* Destroyed by the rains to the extent of 75 per cent. *Bath:* The quantity and quality greatly reduced by the rains. *Fayette:* The crop injured at least 30 per cent. by the rains.

OHIO.—*Medina:* Never such a yield before in the history of our county. *Preble:* The wet weather and the army-worm caused great destruction. *Franklin:* A heavy crop badly used up. *Williams:* A great part of the crop lost. *Sandusky:* The crop much injured by the army-worm, but better than last year. *Washington:* A great portion saved in poor condition. *Hancock:* Fully one-half of the very large crop destroyed by the army-worm. *Delaware:* An enormous growth, but the wet caused them to lodge and rot on the ground. *Harrison:* Damaged by the wet weather and by grasshoppers. *Seneca:* Injured by the army-worm. *Athens:* A good crop ruined by a wet harvest.

MICHIGAN.—*Tuscola:* Unusually good. *Calhoun:* Sixty bushels per acre not an unusual yield. *Mecosta:* One field of ten acres yielded 84 bushels per acre. *Ottawa:* Very good. *Mason:* Very poor. *Wayne:* Never better. *Alpena:* Clean, and will weigh 35 to 50 pounds per bushel by the field. *Oakland:* Good crop, and the grain heavy.

INDIANA.—*Carroll:* Very much injured in yield and quality by the wet weather. *Ripley:* Very poor, owing to the rains. *Franklin:* The heavy rains and the army-worm destroyed about the entire crop. *Gibson:* Nearly all lost by rains. *Grant:* Few saved. *Hamilton:* Not over 30 per cent. of a large crop saved, and that in poor condition.

ILLINOIS.—*Pike:* A large yield, but poor in quality. *Carroll:* Good, both in yield and quality. *Pope:* Good crop, but damaged by the rains before it could be housed. *Clark:* The crop was very large, but less than an average quantity saved, and that in a bleached, damaged state. *Cook:* A splendid crop. *Logan:* Nearly all lost; grain badly bleached. *Mason:* Good in yield, but not in quality. *Montgomery:* But little of the crop could be saved, even by mowing. *Lee:* Average yield about 45 bushels. *White:* Rotted in the field. *Edwards:* Fully half the crop lost.

WISCONSIN.—*Juneau:* The largest crop for ten years. *Walworth:* Exceeds any recent crop in quantity and quality.

MINNESOTA.—*Chisago:* Considerably damaged by rains. *Mower:* The best crop ever raised, and not damaged.

IOWA.—*Marion:* Light in weight. *Hardin:* Remarkably heavy, but injured in the shock and stack. *Harrison:* The product much greater than last year, but the quality hardly equal. *Franklin:* Badly sprouted. *Jefferson:* Damaged by lodging and heavy rains; thousands of bushels destroyed in the stack. *Ida:* Badly damaged in the shock and stack.

MISSOURI.—*Barton:* Far beyond anything I ever saw; not unusual to thrash out 75 bushels per acre. *Crawford:* Very badly injured in the shock. *Morgan:* Badly

damaged. *Perry:* Heavy crop; badly rotted by the rains. *Adair:* Mostly damaged in the stack.

KANSAS.—*Cherokee:* A fine crop, but injured by the wet weather. *Labette:* Such a yield never known before; the true figures should be 200, instead of 180. *Montgomery:* Very heavy crop. *Cowley:* A good crop, yielding 50 bushels per acre.

BARLEY.

The product of barley returned is 87 per cent. of last year's crop. About an equal reduction in quality is indicated. Except in Rhode Island, 77 and 93, Delaware, 65 and 87, and California, 79 and 98, the falling off in both quantity and quality is almost exclusively within the area of excessive rains. The States in which the crop suffered most are Indiana, 47 and 64; Nebraska, owing in part to grasshoppers, 53 and 82; Ohio, 63 and 78; West Virginia, 77 and 84; Kansas, 78 and 99. The New England, Middle, Northwestern, and the Southern States which grow barley, produced a superior crop in yield and of nearly average quality. The product exceeds that of last year in New York, Kentucky, and Wisconsin, 6 per cent.; Connecticut and Pennsylvania, 2; Florida, 25; Texas, 8; Arkansas, 81; Michigan, 10. The product and quality are below last year's in Illinois, 5 and 20 per cent.; Iowa, 20 and 19; Missouri, 8 and 18; Minnesota averages 96 and 102; Oregon, 99 and 100.

MAINE.—*Androscoggin:* Good.

NEW YORK.—*Genesee:* Yields well and of fair quality. *Onondaga:* A fine crop; some fields yield 40 bushels and over per acre. Good breadth planted, but rather light yield.

TEXAS.—*Williamson:* Yield, 35 bushels per acre.

MICHIGAN.—*Calhoun:* Thirty to forty bushels per acre very common. *Oakland:* Good yield and heavy grain.

ILLINOIS.—*Carroll:* Poor in quality.

WISCONSIN.—*Walworth:* In both quantity and quality exceeds any recent crop.

MINNESOTA.—*Mower:* Good; less sown than formerly. *Noble:* Our first crop; a fine one. *Fillmore:* Secured before the rains in good order.

IOWA.—*Marion:* Much injured in the shock. *Muscatine:* The berry is good. *Greene:* Materially injured in the shock and stack.

MISSOURI.—*Perry:* Injured by the rains.

NEBRASKA.—*York:* Three times the area of any previous year, and a fine crop, except that it was colored before harvesting.

CALIFORNIA.—*Del Norte:* Very fine. *Placer:* Quality much better than quantity; injured by the north winds.

BUCKWHEAT.

The condition of the entire crop is not far from average. In the five States which produce above four-fifths of it the average is, New York, 94; New Jersey, 99; Pennsylvania, 103; Virginia, 106; Ohio, 96. In Pennsylvania, Beaver reports the best crop for several years; Indiana the best for ten years; and Elk the best since 1859. In New England the general condition is slightly above average. In Massachusetts, in which 25 per cent. increase of acreage was reported, the condition is 110; Missouri, with an increase in area of 20 per cent., and Kansas of 23 per cent., are both 4 per cent. above in condition; and Nebraska, with an increase of 28 per cent. in area, is 3 per cent. above. Early and later frosts have damaged the condition extensively in the Northwest, especially in Wisconsin, and slightly in other localities.

VERMONT.—*Grand Isle:* A very large growth; some injured by frost.

MASSACHUSETTS.—*Berkshire:* Failed to fill.

NEW YORK.—*Steuben:* Matures slowly and unevenly. *Delaware:* Favorable weather for ripening.

PENNSYLVANIA.—*Bedford:* Good growth but late. *Armstrong:* Damaged by frost. *Beaver:* The best crop grown for several years. *Indiana:* The best crop for 10 years; got up in good condition, and about all thrashed. *Elk:* The best crop since 1859.

MARYLAND.—*Howard:* If the frosts hold off a few days will be a heavy crop.
NORTH CAROLINA.—*Mitchell:* Silver-hull excellent.
WEST VIRGINIA.—*Pocahontas:* Fine prospect. *Mercer:* Very good; Silver-hull the favorite. *Raleigh:* Turning out finely. *Doddridge:* Injured by frost in some places.
OHIO.—*Washington:* Injured by dry weather and by frost.
MICHIGAN.—*Grand Traverse:* Back from the bay, injured by frosts. *Wexford:* All killed by frost September 23. *Tuscola:* Nearly ruined by frost. *Calhoun:* A very large crop. *Manistee:* Seriously damaged by frosts. *Oceana:* Reduced fully 25 per cent. by frosts. *Barry:* Cut short by frost. *Emmett:* Injured by frost. *Shiawassee:* Mostly escaped the frost. *Ottawa:* Suffered from frosts. *Mason:* All killed by frost. *Wayne:* Injured by frosts.
INDIANA.—*Shelby:* Somewhat injured by frosts.
ILLINOIS.—*Stephenson:* Nearly all ruined by frosts in August. *Ogle:* Injured by frosts; but little grown. *White:* Has a good growth, but is not likely to escape the frost.
WISCONSIN.—*Waupaca:* Frost destroyed all; not a vestige left. *Richland:* Cut short by frosts. *Milwaukee:* Frosts have made sad havoc with the crop. *Walworth:* Ruined by frost. *Fond du Lac:* One-half destroyed by frosts. *Portage:* Some fields totally destroyed by frosts; others uninjured. *Green:* One-third of a crop; frost.
MINNESOTA.—*Mille Lacs:* Entirely killed by frost August 22. *Mower:* Killed by frost. *Olmsted:* Damaged by frost.
IOWA.—*Allamakee:* Much damaged by frost. *Hardin:* Good. *Des Moines:* Killed by frost ten days ago.
MISSOURI.—*Camden:* Being gathered in good condition.
KANSAS.—*Osage:* A large amount sown and the product full and good.
NEBRASKA.—*Richardson:* Looks splendid.

COTTON.

An improvement in the condition of cotton during the past month is indicated in Alabama, Louisiana, and Arkansas. The depreciation in Mississippi is slight, from 98 to 96, occasioned by storms. The destructive equinoctial storm wasted and stained much fiber in Southern Texas, reducing the State percentage of condition from 94 to 88. In North Carolina and Tennessee, September was cold and the harvest is late, with less favorable prospects of a top crop. A reduction of the percentage of Georgia from 76 to 71 is caused by storms and the increasing prevalence of rust. South Carolina is 3 per cent. lower from similar conditions. In several counties of Florida the caterpiller has been injurious.

Taking a survey of the whole field, the reduction of condition since the September returns is an undoubted fact, though the depreciation is slight. The harvest has been retarded in the Mississippi Valley by an unusual amount of sickness among the laborers. In the State of Mississippi there has been some loss of time on account of political disturbances.

As compared with the October returns of last year, crop prospects are worse in South Carolina, Georgia, and Florida, but decidedly better in all the States from Alabama westward.

The percentages of condition are as follows: North Carolina, 85; South Carolina, 77; Florida, 70; Georgia, 71; Alabama, 94; Mississippi, 96; Louisiana, 90; Texas, 88; Arkansas, 103; Tennessee, 90.

NORTH CAROLINA.—*Gaston:* The growth of the plant fair, and the fruitage exceedingly good. *Lincoln:* The season was never more favorable for the crop. *Pasquotank:* The crop at least 25 per cent. short. *Nash:* Rusted badly in some localities. *Pitt:* Picking progresses favorably. *Wilson:* Did not improve in September, owing to rust and cool weather. *Greene:* The rust appearing the 1st of September, spread rapidly, and caused all the late forms and young bolls to drop off. *Hertford:* Injured by excessive moisture, causing great growth of weed and but little fruit. *Wake:* The fiber is short, and the yield of lint to the quantity of seed-cotton unusually small. *Camden:* Not as good as August promised. September too cool. *Anson:* Shed forms badly. *Haywood:* Very short and light, and indicates inferior quality. *Mitchell:* Too much rain for corn; very light. *Duplin:* Will not make more than half a crop on sandy land; better on stiff lands. Fully one-half has been picked out. *Edgecombe:* Some improvement since the last report.

SOUTH CAROLINA.—*Beaufort:* Cut off almost one-half by drought. *Clarendon:* Rust general. *Carleton:* Turning out much better than was expected. *Newberry:* Late rains have caused a good crop of young bolls on lands not injured by rust. *Horry:* The falling off due to rust. *Lexington:* The quality good and the weather favorable for picking. *Richland:* Abundant rains injuring the cotton by staining it. *Chesterfield:* Has opened rapidly; good weather. *Orangeburgh:* Gathering lighter than expected. *Laurens:* The early bolls nearly all open and picked out—a thing unprecedented. Much of the cotton already sold to meet those unfortunate guano liens.

GEORGIA.—*Harris:* Worse than ever before; a late drought stopped it and caused the bolls to open prematurely. *Worth:* Shedding badly, and ruined with rust. *Gwinnett:* Heavy rains from the middle of September to the 1st of October have damaged the open cotton by dirt and stain. *Marion:* Shortened by black rust. *Muscogee:* Rains came too late. *McDuffie:* On gray lands all has died out from rust since the last report. *Butts:* The great falling off caused by unusually dry and hot weather in September, and rust. *Bartow:* Rains are staining cotton to a considerable extent. *Brooks:* The prospect improved in September 5 per cent. *Macon:* Rains have been very damaging. *Banks:* Favorable weather for picking. *Douglas:* On the 15th of September about half was opened; on the 16th came a storm, lasting several days, which injured it very much. *De Kalb:* The prospect has fallen off since the 1st of September; unfavorable. *Elbert:* A drought the first fifteen days of September has materially changed the prospect. *Hart:* Picking progressing in earnest; the crop will be short fully 25 per cent. *Terrell:* The last week very wet and unfavorable to cotton. *Walton:* Will be short of former estimates; drought and excessive rains. *Walker:* An abundance of rain injuring the cotton very materially, preventing picking and opening. *Whitfield:* Very late in opening, owing to the wet weather. *Cobb:* Injured by excessive rains. *Jackson:* Will make about two-thirds of a crop. *Madison:* Failure of rain the last three weeks has caused late forms to shed; will not make more than half of a good crop. *Wilkes:* All late cotton was shed; bad weather for picking. *Pike:* Will all be open by the 20th. Picking is fully up with the opening.

FLORIDA.—*Jackson:* After the promise of a fine top crop, the worm made its appearance in force and cut off our hopes. *Madison:* Very little rain; opening very fast, and gathered rapidly for market. *Hamilton:* A great deal of the short staple was actually killed by the drought of July and August. The long staple stood it better; wherever that was planted there is a fair average yield. *Columbia:* Early cotton rusted badly; late injured by the caterpillar in many localities. *Gadsden:* Very good weather for picking; one-half of the crop already housed. *La Fayette:* Reduced by drought. *Leon:* Has done well the past month; full of young bolls and forms. The caterpillars have eaten out a few crops, and to-day the worms, of almost microscopic size, are quite numerous.

ALABAMA.—*Montgomery:* Improving and doing well. *Coffee:* The rust continues to injure it, and the want of rain keeps it shedding its forms. *Randolph:* Injured by drought. *Conecuh:* The rains and wind of the last ten days have done great damage to the crop. *Shelby:* Two-thirds open, and being much damaged by wind and rains. *Limestone:* Cotton put at 85, because of its lateness. *Dallas:* Seriously injured in quantity and quality by the rains of September. *Bullock:* Ten per cent. better than on the 1st of September. *Jackson:* The prospects reduced by the continued wet weather.

MISSISSIPPI.—*Lee:* Still raining and cotton rotting, shortening the extremely flattering promise. *Jefferson:* Badly injured by rust and by frosts September 19–21. *Hancock:* Injured to a small extent by the equinoctial blow. *Grenada:* Recent heavy rains and rust have damaged the crop fully 10 per cent. since the last report. *Pike:* Injured by heavy rains. *La Fayette:* The weather of September exceedingly propitious, except the three days' equinoctial storm, which injured the quality more than the quantity. *Noxuba:* Rusted badly. *Wayne:* Rain and wind, twelve days ago, caused a great deal to fall out; picking going on actively. *Claiborne:* Half open; labor working well. *De Soto:* The top crop has fallen off. *Franklin:* The season for gathering has been quite unfavorable; the crop materially damaged by heavy rains. *Winslow:* Injured by rust and rain. *Clark:* Greatly injured by black rust; the grade will be low. *Lincoln:* Seriously injured by rust on low lands; picking well advanced. *Madison:* Has fallen off much since last report, owing to rotting of bolls. *Wilkinson:* Rains and winds throughout September injured the crop very much. *Adams:* In an experience of some fifty years, a wet August has never given me a good crop of cotton. *Holmes:* Has shed badly. *Lowndes:* Has been cloudy and rainy nearly the whole month, retarding the gathering of cotton and making a very poor sample. Political disturbances, low prices, and bad weather will cause a great deal to be wasted. *Le Flore:* Very much damaged by the continued rains, causing it to shed and rot. *Rankin:* Continued rains have caused considerable rotting of bolls; much has been beaten into the ground, and many bales washed away by the floods. *Bolivar:* A great deal of wet weather has rotted the cotton badly. *Jones:* Cut short by rust at least 25 per cent.

LOUISIANA.—*East Baton Rouge:* Greatly damaged by excessive rains and high winds. *Franklin:* Seriously damaged by a rain-storm. *Rapides:* Materially injured by rain-

storms. *Richland:* Much injury from rust, and more from heavy rains. *Caddo:* At least 60 to 75 per cent. of the crop open. A heavy storm September 17 beat out 30 per cent., of which about 10 per cent. will be picked up. Labor doing remarkably well. *Cameron:* Damaged by the storm, 14th–16th, 50 per cent. *Madison:* A large falling off, principally caused by a light frost on the 18th—the earliest known for many years. *Morehouse:* A severe storm of rain and wind prostrated the crop, causing the portion next to the ground to rot; also injured by a light frost on the 17th. *Claiborne:* The storm of the 16th and 17th damaged the crop 15 per cent., and rust previously 10 per cent. *La Fayette:* Considerably damaged by wind and rains. *Carroll:* Picking not progressing as it should, and, should we have wet weather, a great deal will be lost. *Saint Landry:* Picking retarded by frequent and heavy rains. *East Feliciana:* Excessive rains and wind-storms have greatly damaged the crop in quantity and quality, and, owing to much sickness, it is being gathered very slowly.

TEXAS.—*Coryell:* Will make three-quarters of a crop; staple good; picking progressing finely. *Dallas:* The quality very fine. *San Jacinto:* Fair prospect for a full crop. *Burleson:* Much damaged by hard winds and rains. *Washington:* Damaged 15 per cent. by the equinoctial storm; one-half already picked. *Wood:* Fine. *Burnet:* Will not yield more than one-third of a bale per acre, owing to dry weather. *Harrison:* Damaged 10 to 20 per cent. by the most protracted storm of rain and wind ever known. *Polk:* Injured by a terrible storm of wind and rain, which lasted thirty-six hours. *Shelby:* Damaged 20 per cent. by the storm on the 16th and 17th. *Wilson:* Would have been a great deal better than last year had it not been for a storm, which commenced on the 16th and lasted three days. Will average about one bale per acre. *Angelina:* A violent storm of rain and wind has injured the crop perhaps more than 10 per cent. *Austin:* The prospect of a top crop was destroyed by the storm of the 17th, which beat off leaves, forms, and bolls in a manner never before witnessed. Cotton that was not picked nearly all lost. *Caldwell:* Somewhat damaged by the late storm. *Goliad:* Would have been above average but for the recent storm. *Rusk:* Was well opened, when the recent storm of rain and wind blew a great deal on the ground, which will be lost. *Titus:* The first or bottom crop very fine; light middle crop, owing to drought. Growth of the top crop fine, but the boll-worm will soon destroy all. *Matagorda:* Reduced by the late destructive gales to 25 per cent. *Lampasas:* Some farmers will average a bale to the acre. *Williamson:* The storm of the 17th shortened the crop at least 15 per cent. It blew out all that was open, and beat it into the ground. The crop is now taking a second growth, and, if frosts hold off till November 15, the fall picking will be good. *Cooke:* Opening very nice, and a good prospect of a fine yield. *Ellis:* The weather quite favorable for picking; more than half now saved. *Liberty:* Damaged at least one-third by the recent storm. *Lamar:* Crop will be very large; more lint per acre than in any year since 1861. The county will raise about 10,000 bales, from which 1,000 have already been shipped. At least 25,000 will be shipped from Brookston, our depot. *Lavaca:* A storm, commencing on the 16th and lasting three days, blew almost a hurricane; rain falling all the time. Cotton was blown out fearfully, and damaged at least 20 per cent. *Nacogdoches:* A severe gale on the 17th, with one of the hardest rain-falls, lasting twenty-four hours, did a great deal of damage, blowing out all the ungathered cotton and inundating all the low lands, just where the most cotton is made. *Upshur:* Now picking; some will gather 2,500 pounds of seed-cotton per acre, and others not more than 300. Rust has done much damage on all low lands. *Bosque:* Opening finely, and planters well up with their picking. *Fort Bend:* Injured 50 per cent. by the great storm. *Bastrop:* The great equinoctial storm destroyed 10 to 15 per cent. of the amount opened, the loss being equal to 1,000 bales.

ARKANSAS.—*Craighead:* Picking just commenced. *Hempstead:* Rust has reduced it almost to an average. *Calhoun:* Turning out well. *Arkansas:* The best crop for many years. A great deal of it picked and marketed. *Columbia:* Greatly damaged by a severe storm of rain and wind, continuing forty-eight hours. *Crittenden:* Too much rain, rotting the bolls and causing the top squares to fall off. *Cross:* Has failed considerably since the last report. *Independence:* Some injury from rust. *Montgomery:* Rust commenced about the date of the last report, and one-third or more of the area is affected. Picking has just commenced. *Stone:* Promises the best for many years. *Bradley:* Rust is the cause of reduction. *Prairie:* The best crop we ever made. *Crawford:* Only that on upland is ready for picking; that on the bottoms is two weeks late, and a heavy frost now would damage it much. *Fulton:* Best crop for years if frost keeps off a short time. *Jackson:* The best crop we ever had. *Sharp:* Being now shortened by drought. *Izard:* Several slight frosts, benefiting cotton by checking growth and causing it to open. *Union:* Injured by rust, and the heavy rain September 17 caused it to fall out, and a great deal to be gathered in a damaged condition. *Dorsey:* Rain has done almost incalculable damage to the crop; reduced it 20 per cent., and much more will be wasted for want of help to gather it. *Yell:* Opening very fast, and the picking-season unusually good up to this time. *Drew:* Damaged somewhat by rust and rain-storms. *Howard:* The promise of a month ago reduced by

drought. *Marion:* Never the like produced before in any two years. *Sevier:* Rust mostly confined to low land. Picking progressing rapidly. *Franklin:* The yield 20 per cent. below on uplands, and 20 above on bottom-lands; average 110. September uniformly dry, hastening the opening.

TENNESSEE.—*Grundy:* Considerably behind. *Giles:* The outlook very poor. *Fayette:* No top crop; from the ground half-way up the stalk a good crop, but none above. *Wilson:* Not a large yield, but the quality good. *Putnam:* But few bolls on cotton; what has opened is of inferior quality. *Lauderdale:* Opening fast, and picking progressing well, considering the extra amount of sickness. On the bottoms of the Mississippi one-half the crop was destroyed by overflow.

POTATOES.

The crop, as a whole, promises to be extraordinary in both yield and quality. The only drawbacks upon condition, reported as originating in September, are too dry weather in isolated localities in Ohio, Wisconsin, and Missouri, and slight injuries from frosts in parts of Michigan, Illinois, Wisconsin, Minnesota, and Iowa. The principal causes in operation previous to September, resulting in a reduction of condition to some extent, are the Colorado beetle and rot, the latter as a consequence of rust in some instances and of excessive wet in others. Reduction by the beetles is noted in New Jersey, Pennsylvania, Delaware, Maryland, Virginia, Arkansas, and Ohio; by rotting, in Maine, Vermont, New York, Pennsylvania, Virginia, Ohio, Wisconsin, Minnesota, and Iowa. But at the time of reporting extensive damage from the latter cause was not apparent in any State except Maine, in which rust, followed by rotting, has reduced the condition since the 1st of August from 103 to 90. The other New England States are all above average, as are the six States which, with Maine, produce more than three-fifths of the whole crop, namely; New York, 101; Pennsylvania, 108; Ohio, 110; Illinois, 124; Michigan, 112; Wisconsin, 114. In Michigan, the returns generally concur in representing the crop as unprecedented in both yield and quality; and in Illinois, "abundant and of the best quality" expresses the prevailing tenor. Excellence of quality is also frequently referred to in Wisconsin and Indiana, condition in the latter being 104. The States beyond the Mississippi return, Minnesota, 101; Iowa, 107; Missouri, 110; Arkansas, 106; Kansas, 119; Nebraska, 127; California, 92; Oregon, 111. In New Jersey (87) and Delaware and Maryland (80) early drought had an ultimate effect, with the beetle, in reducing the condition. South of the Potomac and the Ohio, the States above average are, South Carolina, Tennessee, and West Virginia, 102, and Kentucky, 108. The other States range between 91, in Alabama, and 98, in Virginia, North Carolina, and Texas. Returns from Florida, Alabama, Texas, and Arkansas call attention to the fact that the figures for condition refer to a second crop. Our reporter in Prairie, Arkansas, states that he has raised this season a second crop from seed of the first, and on the ground which produced it.

MAINE.—*Piscataquis:* Not more than two-thirds of a crop; stopped growing when the rust struck them. *Waldo:* About three-fourths of a crop; vines killed in August by rust. *Franklin:* Early Rose rotted the latter part of August. *York:* Extra nice; some fields have rotted.

VERMONT.—*Rutland:* Good crop. *Orleans:* Rotted in the field; some have to leave on the ground; 50 per cent. affected ones. The yield good. Starch-factories pay only 20 to 25 cents.

MASSACHUSETTS.—*Berkshire:* The heaviest crop for years, and free from imperfections.

CONNECTICUT.—*New London:* Have seldom yielded as bountifully.

NEW YORK.—*Queens:* The Late Rose very fine. *Genesee:* Not as good as expected a month ago. *Wyoming:* Rotting to some extent, and do not yield as expected.

NEW JERSEY.—*Cumberland:* Almost a failure, owing to the beetle. *Atlantic:* Nearly a failure, owing to the beetle and to blasting.

PENNSYLVANIA.—*Bucks:* Early yielded well; late, cut short by drought and beetles. *Cameron:* Selling at a lower price than for ten years. *Bedford:* Good yield, but early potatoes affected by rot. *Delaware:* Injured in quantity and quality by the beetles. *Lawrence:* An excellent crop. *Mifflin:* The best crop for years. *Sullivan:* So abundant that they will have to be fed to the stock. *Elk:* A "powerful" crop, sound and good; the Peerless the most productive, and equal to any in quality. *Northumberland:* An enormous crop of very large and very fine potatoes.

MARYLAND.—*Howard:* A small crop, overrun with weeds, and bitten down by the Colorado beetle. *Cecil:* Injured by the beetle.

DELAWARE.—*Kent:* Greatly damaged by the beetle.

VIRGINIA.—*Rockingham:* Very much injured by the beetle, especially the late crop. *Chesterfield:* Good crop, in excellent condition. *Highland:* Good in every respect. *Washington:* Affected with rot.

FLORIDA.—*Jackson:* Second crop in good growing condition.

ALABAMA.—*Calhoun:* Badly injured by drought. *Bullock:* The first planting turned out excellently, but the second planting (to which the figures refer) not so promising.

MISSISSIPPI.—*Pike:* Fine. *Hancock:* Yielded better than usual.

TEXAS.—*De Witt:* The figures refer to the fall planting, now being worked for the first time.

ARKANSAS.—*Prairie:* Good. Have raised a second crop from the seed of the first, and on the same ground. *Izard:* Rotted before digging to a greater extent than for many years.

TENNESSEE.—*Greene:* A fair crop. *Blount:* Fine. *Dickson:* Large crop. *Henry:* Large crop, and safe from damage.

KENTUCKY.—*Lincoln:* The best crop for many years. *Harrison:* The crop four times that of 1874, and the quality 50 per cent. better.

OHIO.—*Medina:* Early varieties yield largely; late, injured by the Colorado beetles. *Ross:* Fine crop. *Fulton:* Have matured very finely. *Miami:* The largest crop ever produced. *Marion:* Early, considerably affected by the rot; late, extraordinary. *Williams:* The crop very good. *Sandusky:* Better than for many years; would not sell for 20 cents per bushel. *Adams:* Early, fine; late, doing poorly, owing to dry weather. *Hancock:* The largest crop ever known; selling at 20 to 25 cents. *Delaware:* An extra growth, but one-third rotted before digging. *Athens:* Very large yield and sound.

MICHIGAN.—*Kalamazoo:* Late, injured by a heavy frost September 18. *Grand Traverse:* Back from the bay, injured by frosts. *Tuscola:* Good. *Monroe:* Never better. *Oceana:* Late; some damaged by frost. *Delta:* The price lower than ever before, though pinched by drought. *Delta:* Late, damaged by frost. *Saginaw:* Extra crop. *Shiawassee:* Heavy yield. *Newaygo:* The best crop ever known, in yield and quality. *Ottawa:* A first-rate crop; dry and mealy. *Mason:* Plentiful and very fine. *Wayne:* Never better. *Oakland:* The yield and quality never better.

INDIANA.—*Ripley:* The largest crop ever raised; secured in good order. *Franklin:* Very abundant and fine. *Whitley:* A large crop of good quality. *Marion:* Poor crop. *Jasper:* Never better. *Steuben:* Rotting. *Perry:* The crop a failure.

ILLINOIS.—*Pike:* Extra large. *Carroll:* Late; injured by frost. *Pope:* Drought in September will shorten the product. *Bureau:* Much better in quantity and quality than for years. *Cork:* The largest crop for ten years. *Shelby:* Abundant, and of the best quality. *Fulton:* Abundant, and no sale. *Montgomery:* Abundant and excellent. *McLean:* Never a better crop. *Marshall:* Enormous yield. *Massac:* Rather dry for late potatoes. *Hancock:* Abundant and good.

WISCONSIN.—*Waupaca:* Turning out from 75 to 200 bushels per acre; beginning to rot in some localities. *Ozaukee:* The condition would be higher than 110, were not the tops of the late kinds killed by frosts. *Pepin:* Begging at 20 to 25 cents per bushel. *Fond du Lac:* Immense crop and of the best quality; market price 10 to 15 cents. *Vernon:* Extra crop. *St. Croix:* Yield 150, and quality good. *Green:* The best crop for years.

MINNESOTA.—*Chisago:* Rot badly, owing to wet weather. *Mower:* Never better in quantity or quality. *Rock:* The best crop ever raised. *Wright:* In some localities destroyed by a heavy frost August 21. *Steele:* Never better.

IOWA.—*Alamakee:* Much damaged by frost. *Hardin:* A heavy crop, but some rotting. *Harrison:* Fine. *Lee:* Dull at 25 cents per bushel. *Muscatine:* Late; not as good as was anticipated. *Des Moines:* All killed by frost ten days ago. *Franklin:* A large yield, but rotting. *Cerro Gordo:* A big crop, but rotting badly.

MISSOURI.—*Greene:* A large and fine crop. *Nodaway:* Never better. *Perry:* Late, almost a failure from drought since the 1st of August. *Iron:* Very abundant and fine.

KANSAS.—*Reno:* Splendid; the best crop ever produced. *Osage:* Very large and fine crop. *Montgomery:* Unusually large crop.

NEBRASKA.—*Johnson:* Yield bountifully, and are very fine. *Merrick:* Better crop

than ever seen before. *Clay:* In yield and quality cannot be beat; never so good before. *Otoe:* The late potatoes have developed very finely. *Richardson:* Look splendid. *Knox:* Abundant. *York:* Enormous crop; in many cases 500 bushels per acre.

CALIFORNIA.—*Sonoma:* A partial failure, owing to blight and non-rotation.

SWEET-POTATOES.

The condition is average in Delaware; in Mississippi, 111; Louisiana, 101; Arkansas, 113; Kansas, 103. In other States which grow the crop to any extent, it ranges between 82 in Georgia and 98 in Pennsylvania, Maryland and Virginia. New Jersey, North Carolina, Tennessee, West Virginia, and Missouri are 97. In the Gulf States, except Mississippi and Louisiana, the crop did not fully recover from the pinching effects of the early drought. Recent dry weather has had some effect in reducing the condition in Illinois and Missouri, frost in Ohio, and excessive wet in Indiana and Iowa.

NEW JERSEY.—*Atlantic:* Fine.

VIRGINIA.—*Chesterfield:* Quality never better. *Princess Anne:* The season too wet. *Northampton:* Poor yield.

NORTH CAROLINA.—*Gaston:* Matured, and a very fine crop. *Chowan:* Short crop.

SOUTH CAROLINA.—*Clarendon:* The ground still entirely too dry and the roots very small. *Lexington:* Suffered from the early as well as the late drought. *Georgetown:* Has suffered seriously from drought.

GEORGIA.—*Marion:* Shortened by drought. *Muscogee:* Rains came too late. *Jefferson:* Almost ruined by drought. *Berrien:* Cut short by drought. *Wilkes:* It has been entirely too dry for the crop.

FLORIDA.—*Gadsden:* Much benefited by the August and September rains. *La Fayette:* Badly injured by drought. *Jackson:* Doing finely.

ALABAMA.—*Crenshaw:* Improving. *Mobile:* Backward, but now doing well as could be. *Montgomery:* Improving. *Jefferson:* The crop will be very large. *Calhoun:* Badly injured by drought. *Conecuh:* Somewhat damaged by late drought. *Dallas:* Very promising. *Bullock:* Improved more than 10 per cent. since September 1st.

MISSISSIPPI.—*Pike:* Fine. *Hancock:* Yielded better than usual. *Jefferson:* Fine. *Lee:* Very heavy crop.

LOUISIANA.—*Franklin:* Very promising.

TEXAS.—*Austin:* The crop will be the smallest for many years. *Rusk:* Now growing finely. *De Witt:* Short in quantity 20 per cent.; many prevented from planting by drought. *Bastrop:* Small crop, owing to the drought.

ARKANSAS.—*Arkansas:* The best ever seen. *Fulton:* The present drought has injured the crop 10 to 20 per cent.

TENNESSEE.—*Dickson:* Large crop. *Henry:* Large crop and safe from damage.

OHIO.—*Lorain:* Killed by frost September 24.

INDIANA.—*Carroll:* Much injured by the wet weather.

ILLINOIS.—*Montgomery:* Abundant and excellent. *Massac:* Rather dry for sweet-potatoes.

IOWA.—*Harrison:* Too wet for sweet-potatoes.

MISSOURI.—*Phelps:* Cut short by drought.

CRANBERRIES.

NEW JERSEY.—*Atlantic:* The crop promised to be extra large until a few days before picking time; then a peculiar disease, which seemed like the bite of an insect, attacked them, and most of the crop is lost. There are several hundred acres in the county, and the loss amounts to many thousand dollars. *Camden:* Badly scalded in some localities.

WISCONSIN.—*Juneau:* Will not be over 25 per cent. of an average crop. The loss to this county is heavy, as they are an important production. *Portage:* Did not bring to the owners one-quarter of what they promised early in August. *Monroe:* Afair crop, although one-third frozen.

MINNESOTA.—*Mille Lacs:* Frost, August 22, destroyed the crop. *Chisago:* A total failure; killed by frost.

TOBACCO.

The condition of tobacco, on the whole, is 2 per cent. above average. The New England crop is unusually fine, Massachusetts being 14

per cent. and Connecticut 10 per cent. above average. Of the Middle States New York is 2 per cent. and Pennsylvania 10 per cent. above average. The great central tobacco region—including Maryland, 100; Virginia, 106; West Virginia, 98; North Carolina, 105; Kentucky, 116; and Tennessee, 95—will, on the whole, realize an unusual crop, though in some counties injuries from frost and other untoward influences are complained of. The season has been mostly very favorable both for the maturing and curing of the plants. In Virginia, Prince Edward, Carroll, Goochland, and Orange Counties claim crops larger and finer than for many years; Campbell, with an unusual quantity, complains of loss from "frenching" and "firing." In North Carolina, Caswell has a large crop, but poor and deficient in oil. In Person the product is fine, and the coal-curing process for bright wrappers has been remarkably successful. In Kentucky, Daviess claims a crop of 8,000,000 pounds, a third larger than that of the census year. Christian will gather a larger quantity than ever before. The rains of July and subsequent drought injured the yield in Cumberland, both in quantity and quality. Some complaints of frost are received, but the increased yield must be very great, though in some counties producing an unusual proportion of lugs. Frost is also reported in Tennessee, where the reduction of the State average is owing to injuries to the crop in one or two large tobacco counties; the reports generally are quite favorable. The small crops of South Carolina, Georgia, and the Gulf States are above average, notwithstanding a deficiency of 10 per cent. in Louisiana and 7 per cent. in Texas. Arkansas is 9 per cent. above average.

Our reports from the tobacco regions north of the Ohio indicate serious injury to the crop, mostly from the early occurrence of frost. Ohio is 22 per cent. below average; Michigan, 50 per cent.; Indiana, 16 per cent.; Illinois, 8 per cent.; and Wisconsin, 33 per cent. The higher the latitude, the greater the depreciation. West of the Mississippi River, Minnesota and Iowa are full average and Nebraska 5 per cent. above. Missouri, the only large tobacco State of this region, is 3 per cent. and Kansas 4 per cent. below, considerable frost being noted in some counties. On the Pacific coast, California is full average. In Contra Costa, the plant grows astonishingly without irrigation. The culture is here increasing. The very small crop of Oregon is 2 per cent. below average.

MARYLAND.—*Charles:* Much improved since the last report. *Calvert:* The weather of September favorable for securing the crop; but much of it was badly fired and converted into "ground-leaf," reducing the quantity per acre. The quality, color, and texture, will be above average. *Howard:* A favorable planting and growing season has given one of the largest crops ever raised.

VIRGINIA.—*Campbell:* More than average in quantity, but much of the crop frenched and fired. *Nottaway:* The greater part must be housed green in order to prevent frosting. *Carroll:* Finer crop than any previous year; larger leaf and finer in quality. *Halifax:* Fine weather for saving and curing. Large crop in pounds, but the quality very common. *Orange:* Magnificent crop. *Pittsylvania:* Inferior in quality, but not in quantity. *Caroline:* The weather has been propitious for curing and housing the crop, which may now be regarded as safe. *Floyd:* Slightly injured by frost. *Chesterfield:* Quality very good; much cut and housed. *Goochland:* Season favorable for cutting and securing; prospect for a much heavier crop than last year. *Page:* Favorable weather for maturing. *Madison:* Generally good, but much of the crop light, owing to late planting. *Prince Edward:* The largest and best crop in ten or twelve years. *Mecklenburg:* Most of the crop housed. *Fluvanna:* September very favorable for the ripening of tobacco.

NORTH CAROLINA.—*Caswell:* The curing has been generally successful, resulting in a larger quantity of yellow-leaf than usual, but poor in quality—deficient in oil. *Davie:* The weather has been remarkably fine for cutting and curing. *Person:* The great staple of this county will be of fine texture, and farmers have succeeded splendidly in coal-curing for bright wrappers. *Union:* The quantity produced yet small, but increasing from year to year. *Heywood:* Very fine.

FLORIDA.—*Gadsden:* The crop of Cuba tobacco, in both yield and quality, the bes since the war; estimated at 800 boxes of 400 pounds each.

ARKANSAS.—*Fulton:* Never better.

TENNESSEE.—*Grundy:* The last week in September brought some frost, which injured the crop in places. *Smith:* Will be a large crop and average in quality if carefully handled. *Dickson:* Good condition; most of it housed without frost. *Wilson:* Condition good, and the yield will be large. *Henry:* Fair crop; about all housed in good condition. *Macon:* The fine weather of August and September brought the crop out greatly, but the quality will be poor. *Robertson:* The crop improved very much in September; the late cuttings are good and very fine in quality.

WEST VIRGINIA.—Will be of unusually good quality. *Mercer:* Good in quantity, but is thought not to be so good in quality. Some damaged by frost. *Summers:* Injured to some extent by frosts.

KENTUCKY.—*Livingston:* A good deal frosted. *Warren:* The weather now fine for tobacco. *Jefferson:* The season has been very favorable for the maturing of the crop. *Christian:* Will be more made than ever in any year before. *Monroe:* Generally late and in danger of frost. *Cumberland:* Rains of July and subsequent drought have materially injured the crop both in quantity and quality. *Daviess:* Generally small, and nearly one-half uncut. The present prospect is for a crop of 8,000,000 pounds. *Graves:* As much cut and housed as ever before, or more; but there will be a larger per cent. of lugs than usual.

OHIO.—*Guernsey:* Late tobacco considerably injured by two severe frosts. *Monroe:* Some damage from recent frosts—perhaps 5 per cent. *Noble:* On low land injured by frost. *Adams:* Mostly housed before frost, and a pretty fair article. *Morgan:* Heavy frosts on the 23d and 24th killed all not housed.

INDIANA.—*Carroll:* Greatly damaged by the wet weather.

ILLINOIS.—*Pope:* A larger area than usual, but the quality not good. *Massac:* A nice dry fall for saving tobacco.

WISCONSIN.—*Walworth:* Ruined by frost.

IOWA.—*Allamakee:* Much damaged by frost.

MISSOURI.—*Camden:* Of No. 1 quality, and being housed in good condition. *Ozark:* Damaged by frost 33 per cent. *Pettis:* Considerable of a crop; of excellent quality.

CALIFORNIA.—*Contra Costa:* Tobacco takes root with astonishing readiness and grows surprisingly without any irrigation.

RICE.

NORTH CAROLINA.—*Brunswick:* The great crop was formerly rice, but since the war the production has fallen off from 200,000 baskets to less than 20,000, and no crop has taken the place upon the large and valuable rice-plantations, which have consequently almost gone to ruin.

SOUTH CAROLINA.—*Beaufort:* On upland, cut off almost one-half by drought; on the tide-waters will prove a large yield. *Colleton:* The crop very fine.

GEORGIA.—*Camden:* The crop on the Satilla River, now being taken to market, will amount to over 140,000 bushels of rough rice; about 20,000 bushels more than last year. *McIntosh:* Above an average crop, of poor quality.

FLORIDA.—*Santa Rosa:* The amount planted is much larger than usual, and it is a very remunerative crop. *La Fayette:* Acreage 500 per cent. and a fair crop.

LOUISIANA.—*La Fourche:* The crop very fine in yield and quality. I have a few arpents of land in rice, which have produced 25 barrels per arpent, worth $14 to $15 per barrel.

SUGAR-CANE.

GEORGIA.—*Jefferson:* Almost ruined by drought. *Berrien:* Cut short by drought *Upson:* Cut short by severe heat in July and August.

FLORIDA.—*Jackson:* Not more than 30 per cent. of a crop planted for want of seed; will make an average yield. *Madison:* A little better than last month. *Gadsden:* Brought up to full average by the August and September rains.

ALABAMA.—*Crenshaw:* Improving. *Mobile:* Largely increased acreage, in average condition. *Conecuh:* Greatly damaged by drought. *Bullock:* Seriously injured by the drought in July, but much improved since.

MISSISSIPPI.—*Franklin:* Our leading planters are manufacturing their sugar and molasses at home from Louisiana and African cane. *Winslow:* Much cane will not be ground up for want of mills, and will be lost.

LOUISIANA.—*La Fourche:* Has not justified the promise by its fine appearance in the spring.

SORGHUM.

NORTH CAROLINA.—*Hertford:* Increased, and a very fine crop. *Haywood:* Very fine
GEORGIA.—*Hart:* A large crop gathered. *Jackson:* On the increase, and next year the quantity will be doubled, from the fact that we have introduced the Cook evaporators. *Upson:* Cut short by the severe heat in July and August.
ALABAMA.—*Calhoun:* Fine; a great increase in acreage over last year, perhaps 200 per cent. *Conecuh:* Above average 50 per cent. *Shelby:* Almost every class and condition, from the gray-headed sire of seventy to the stripling of sixteen, are busily engaged in having their sorghum made up, leaving cotton and everything else to the mercy of wind and rain. Sorghum is pushed to the front as a compromise between the high price of meat and the low price of cotton. *Bullock:* Seriously injured by the drought in July, but much improved since.
MISSISSIPPI.—*Winslow:* Nearly all blown down after a heavy rain. At least 50 per cent. more will be planted the coming season than last.
TEXAS.—*Austin:* The first crop yielded 80 gallons per acre of fine sirup. The second crop will not be worth grinding. *Upshur:* The crop has been greatly increased.
ARKANSAS.—*Columbia:* Largely on the increase. A number of mills and evaporators brought into the country will induce the planting of a still greater breadth. *Independence:* Twenty-five per cent. more planted than usual. *Fulton:* Increased acreage and excellent crops.
TENNESSEE.—*Blount:* Better than for years. *Dickson:* The largest crop ever grown; made into sirup of good quality. *Wilson:* Unusually large yield. The mills have been running for weeks, some of them *all night.*
INDIANA.—*Shelby:* Some injured by frost.
ILLINOIS.—*Madison:* Late, but promising a full average.
WISCONSIN.—*Richland:* Cut short by frost.
IOWA.—*Marion:* Nearly a failure. *Guthrie:* Seed sent out as "imported" is a perfect failure; has a drier, whiter inside than corn or broom-corn. A good mill can get but very little juice out of it, and that little proves to be worthless. Other seed gives a good crop.
KANSAS.—*Osage:* A large crop of good quality.
NEBRASKA.—*Knox:* The growth of the crop stopped while much of it was in bloom, by frost accompanied with ice, September 21.

HOPS.

NEW YORK.—*Oneida:* The crop all harvested and the yield at least one-third more than any crop for the last five years.
MICHIGAN.—*Calhoun:* Yielded about 500 pounds per acre, and of very fine quality.
WISCONSIN.—*Monroe:* About two-thirds of a crop.
CALIFORNIA.—*Alameda:* The product quite good; from one-eighth to one-fourth more than last year.
OREGON.—*Benton:* Excellent crop; large yield on all the fields. The culture here is yet in its infancy, but the bottom-lands of the Willamette will probably prove the finest lands in the world for hop-growing.

HEMP.

KENTUCKY.—*Mercer:* Our hemp-crop is very fine, and has been cut in good time. *Fayette:* Have just finished cutting a larger crop of hemp than has been produced for several years, and the quality, up to this stage, is above average.

FATTENING CATTLE.

The number of fattening cattle in the country is somewhat greater than last year. There is a falling off in all the New England States except Connecticut, which reports an increase nearly balancing the deficiency of the others. Of the Middle States, New Jersey reports a number equal to last year, but the others show a decline, Pennsylvania reducing her estimate 6 per cent. The South Atlantic Coast States show a small increase, North and South Carolina making good the loss of 7 per cent. in Maryland. Texas, by an increase of 6 per cent. upon her large aggregate, raises the number of the Gulf States considerably above last year, notwithstanding the decline in all the other States,

amounting to 12 per cent. in Louisiana. Of the southern inland States Arkansas reports an increase, but this is more than counterbalanced by the loss in all the others. North of the Ohio River, Michigan and Illinois equal last year's report, but the other States fall below. West the Mississippi all the States report an increase ranging from 2 per cent. in Nebraska to 53 per cent. in Kansas. On the Pacific coast the loss of 8 per cent. in California largely exceeds the gain of 9 per cent. upon the smaller aggregate of Oregon.

All the New England and Middle States report a condition above average except Massachusetts, where the deficiency is only 1 per cent., the maximum, 107, being in Connecticut. The South Atlantic Coast States and Gulf States are all above average except Maryland, 98, and Florida, 99. The southern inland States and the States north of the Ohio River and west of the Mississippi are uniformly above average, the maximum, 112, being in Arkansas. On the Pacific coast, California is 5 per cent. below average and Oregon 2 per cent. above. From the accompanying notes of correspondence it will be seen that scarcity or plenty of feeding material may both operate to increase the number of fattening cattle. In some counties, as in Sullivan, New York, it is ound more profitable to utilize a scant stock of food in preparing animals for market than to keep them over. In others, as in Cook, Illinois, and Greene, Missouri, the abundance of the feeding crop is an inducement to enlarge the number of fattening stock. In several counties of Kansas the immense corn-crop is being largely consumed by cattle from abroad.

MAINE.—*Piscataquis:* Much above average in condition.

NEW YORK.—*Queens:* Root-crops for fattening cattle are abundant, and the stock look better than for several seasons past. *Sullivan:* Scarcity of hay increases the number of fattening cattle, and good, full feed gives them a condition above average.

PENNSYLVANIA.—*Bucks:* Short pastures and scarcity of fodder prevented the usual supply of fattening cattle from being brought into this section. *Armstrong:* Few cattle fattening.

VIRGINIA.—*Rockingham:* Stock of all kinds looking well. *Carroll:* Better than last year and increasing. *Highland:* Will compare favorably with last year.

NORTH CAROLINA.—*Davie:* In better condition than usual.

TEXAS.—*Coryell:* In fine condition, but the number reduced. *Dallas:* In fine condition, with good prices. *Medina:* Large sales of our beeves in the Kansas and Missouri markets have reduced their number.

WEST VIRGINIA.—*Pocahontas:* Fattening well.

MICHIGAN.—*Newago:* Not as plenty as last year, but in excellent condition.

INDIANA.—*Marion:* Very few will be fed this season.

ILLINOIS.—*Cook:* Our abundant crop induces more feeding. *McLean:* Never saw them look so well.

WISCONSIN.—*Walworth:* Will be but few fattened, for want of a corn-crop.

IOWA.—*Lee:* Plenty, and in unusually good flesh.

MISSOURI.—*Greene:* Think there was not a dozen cattle fattening in the county last year. We had no corn, and nearly all our hogs were shipped. This year we have an immense corn-crop, and but few hogs. The result is that large numbers of cattle will be fattened for market.

KANSAS.—*Nemaha:* In place of but few fattening cattle in the county last winter, there will be many this, both native and foreign, to consume the corn-crop, which is immense. *Woodson:* Our farmers are endeavoring to market their surplus corn by feeding cattle. *Lyon:* Last year none fattened except for home consumption; this year many hundreds, for shipment, corn being abundant and cheap.

CALIFORNIA.—Have fallen off greatly in numbers, but are in excellent condition.

Table showing the condition of the crops, &c., on the first day of October, 1875.

States.	WHEAT.		RYE.		OATS.		BARLEY.		BUCK-WHEAT.	CORN.	POTATOES, (*Solanum tuberosum.*)	POTATOES, (*Batatas edulis,*) SWEET.
	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.	Average condition October 1.	Average condition October 1.	Average condition October 1.	Average condition October 1.
Maine	94	99	94	101	105	104	97	102	97	100	90	.....
New Hampshire	101	103	101	103	101	100	101	100	102	104	102	.....
Vermont	102	101	94	100	111	103	100	100	102	94	101	.....
Massachusetts	89	100	112	95	108	102	100	100	110	100	117	.....
Rhode Island	.....	.....	90	94	82	102	77	93	.....	97	103	.....
Connecticut	100	100	104	102	109	102	102	105	101	107	111	.....
New York	57	91	81	98	106	96	106	98	94	90	101	.....
New Jersey	66	84	79	97	85	88	.....	.....	99	111	87	97
Pennsylvania	85	95	93	98	110	98	102	93	103	106	108	98
Delaware	91	100	100	100	63	80	.....	.....	100	108	80	100
Maryland	91	101	97	96	91	95	65	87	98	108	80	98
Virginia	94	95	100	95	81	89	92	100	106	111	98	98
North Carolina	107	95	99	97	101	96	.....	.....	102	102	98	97
South Carolina	105	100	100	107	120	103	100	98	100	84	102	86
Georgia	105	106	92	101	100	100	97	100	105	88	95	82
Florida	.....	.....	100	100	91	100	.....	.....	.....	89	96	88
Alabama	110	102	98	98	96	101	125	92	100	110	91	94
Mississippi	154	104	109	103	128	106	.....	.....	103	112	102	111
Louisiana	105	90	92	87	106	96	.....	.....	.....	96	93	101
Texas	170	105	130	108	144	107	108	99	102	89	98	90
Arkansas	175	103	155	104	174	109	181	102	111	115	106	113
Tennessee	118	90	101	93	102	94	97	97	102	110	102	97
West Virginia	57	67	88	84	94	89	77	84	99	105	102	97
Kentucky	93	71	88	84	98	75	106	79	98	114	108	90
Ohio	60	68	71	79	100	83	63	78	96	94	110	94
Michigan	84	91	99	99	121	105	110	101	91	98	112	100
Indiana	66	60	77	80	77	75	47	64	93	91	104	84
Illinois	68	72	98	92	106	84	95	80	88	97	124	94
Wisconsin	109	103	129	105	133	102	106	98	58	53	114	105
Minnesota	105	96	90	97	101	97	96	102	82	74	101	100
Iowa	76	74	87	95	107	94	80	81	94	91	107	91
Missouri	67	73	95	90	109	90	92	82	104	111	110	97
Kansas	84	93	105	100	84	93	78	99	104	117	119	103
Nebraska	63	92	60	90	73	99	53	82	103	92	127	94
California	71	98	96	96	102	98	79	98	97	96	92	96
Oregon	95	101	100	106	100	100	99	100	101	101	111	.....

Table showing the condition of the crops, &c., on the 1st day of October, 1875—Continued.

States.	TOBACCO.	BEANS.	PEASE.		SORGHUM.	SUGAR-CANE, (not *Sorghum.*)	COTTON.	OLD WHEAT.	FATTENING CATTLE.	
	Average condition October 1.	Average condition October 1.	Acreage compared with last year.	Average condition October 1.	Average condition October 1.	Average condition October 1.	Average condition October 1.	Average amount of old wheat in the county compared with last year.	Average number of fattening cattle compared with last year.	Average condition October 1, compared with last year.
Maine	.....	103	99	99	.....	.....	.....	98	99	105
New Hampshire	112	99	96	100	.....	.....	.....	96	99	103
Vermont	.....	100	104	100	.....	.....	.....	58	98	104
Massachusetts	114	102	100	100	.....	.....	.....	.....	97	99
Rhode Island	.....	100	100	100	.....	.....	.....	.....	92	102
Connecticut	110	102	100	100	100	.....	.....	100	106	107
New York	102	97	97	98	.....	.....	.....	81	97	102
New Jersey	.....	102	92	95	.....	.....	.....	99	100	100
Pennsylvania	110	98	98	100	102	.....	.....	90	94	101
Delaware	.....	100	100	100	100	.....	.....	102	95	102
Maryland	100	98	99	95	100	.....	.....	49	93	98
Virginia	106	102	102	100	103	.....	100	75	100	106
North Carolina	105	103	102	98	106	.....	85	73	101	104
South Carolina	102	95	94	90	94	83	77	75	104	107
Georgia	98	99	100	86	106	71	71	88	100	101
Florida	100	101	102	98	.....	86	70	.....	97	99
Alabama	103	89	106	99	111	104	94	100	94	105
Mississippi	119	104	134	110	115	107	96	89	99	110
Louisiana	90	85	117	107	90	94	90	.....	88	102
Texas	93	93	105	99	103	89	88	90	106	106
Arkansas	109	107	130	110	121	.....	103	101	103	112
Tennessee	95	102	114	99	110	.....	90	.....	92	106
West Virginia	98	104	97	89	99	.....	75	80	95	104
Kentucky	116	101	113	95	102	.....	92	85	96	107
Ohio	78	95	94	83	97	.....	.....	104	96	103
Michigan	50	93	107	101	102	.....	.....	91	100	103
Indiana	84	91	92	93	99	.....	.....	80	95	102
Illinois	92	99	100	94	95	.....	.....	80	100	108
Wisconsin	67	77	103	101	62	.....	.....	61	98	105
Minnesota	100	92	101	90	80	.....	.....	78	105	102
Iowa	100	95	101	98	90	.....	.....	87	105	102
Missouri	97	98	95	100	108	.....	99	73	120	111
Kansas	96	109	150	104	119	.....	.....	79	153	110
Nebraska	105	101	117	100	108	.....	.....	68	102	111
California	100	96	105	98	.....	.....	.....	83	92	95
Oregon	98	99	100	99	.....	.....	.....	84	109	102

EXTRACTS FROM CORRESPONDENCE.

DISEASES OF HOGS.—*Frederick, Maryland:* Hog cholera is prevailing to an alarming extent in several localities. Some planters are reported to have lost nearly their whole stock. Best baking-soda, one tablespoonful per hog, is said to be a sure and speedy remedy; also for cholera among chickens. *Jasper, Iowa:* A great many hogs dying of cholera.

FULTZ WHEAT.—*Juneau, Wisconsin:* Winter-wheat was below average, owing to rust, except Fultz, which was not much injured. A neighbor had 18 bushels of Fultz from one acre, and from an adjoining acre only 11 bushels of the common variety. Another neighbor raised 118 bushels of Fultz, all of which is engaged for seed.

FRUIT CULTURE EXTENDING.—*Camden, Missouri:* Many of our farmers are investing largely in fruit culture, especially apples and grapes. Orchards and vineyards are being put out in every direction. The great lever in promotion is the Fairview Pomological Society, which by scattering information on the subjects, and by personal examples, is doing a good work in this direction.

FRUIT CULTURE IN FLORIDA.—*Orange County:* The cereal crops are being fast abandoned, and supplanted by the culture of oranges. The whole county bids fair to become one vast orange-grove. New experiments in the use of fertilizers and in irrigation are being made. On the 1st of September there was organized at Maitland the Farmers and Fruit-Growers' Association of Orange County. *Greene:* Fully matured, and by far the largest and best crop in ten years. *Putnam:* In this county rapid progress is being made in the production of fruits. Oranges and lemons bid fair to be an average good crop. In a few years these products will be of great importance. The *Musa* or banana, owing to a mild winter, are producing wonderfully, especially *Sapientum*. We have also several varieties that are fruiting finely, and are superior to the above. We also have an excellent crop of guavas, and doubtless a large quantity will be converted into jelly. Limes are quite abundant, and will soon be furnished in quantities for shipping.

CYCLONE IN TEXAS.—*Galveston:* A cyclone, commencing on the 15th of September, and continuing three days, caused the waters of the Gulf to cover almost the entire island, thirty miles long and about two miles wide, and portions of the county on the mainland. Almost everything in the shape of crops and vegetation is badly injured, and in many cases entirely ruined, by the salt-water of the Gulf and the severe winds. The injury to the cotton-crop is very severe. The damage to the city of Galveston will not much exceed $100,000. *Nacogdoches:* On the 17th of September a severe gale from the northeast, with one of the hardest rain-falls, lasting twenty-four hours, did a great deal of damage to farmers generally. It blew out all the ungathered cotton, and inundated all the low lands just where the most cotton is made. Beyond doubt this county was injured to the amount of many thousand dollars. *De Witt:* The cyclone which destroyed Indianola, September 15 and 16, amounted to quite a gale here. Wherever cotton was not gathered it was blown from the bolls and destroyed. *Fort Bend:* The recent great storm that visited our coast, extending far into the interior, greatly damaged our corn and cotton crops. It blew down the corn, and inundated the land, causing it to rot and sprout. It tore the cotton to pieces,

blew all that was open out of the bolls, and blew down cotton-houses, thus exposing that which had been picked. It injured the crop at least 50 per cent. *Matagorda:* A most terrific storm began on the morning of September 15; about dark it increased to a gale, and continued of about the same intensity for twenty-four hours, when it increased to a terrible tornado, which continued until 3 o'clock the next morning, the 17th. It carried in its course destruction, desolation, and death. At the same time rain deluged the earth. As the papers will give full accounts of the destruction of towns, houses, farm-animals, and people, I will confine myself to its effects on the crops. This it is impossible yet to estimate. All open cotton, which constituted the bulk of the crop, was blown and washed away. Many gin-houses were either blown down or unroofed, by which much cotton was either lost or damaged. The cotton-stalks being entirely stripped of leaves by the wind, a bright sun and warm days rapidly developed the remaining bolls, when, on the nights of the 24th and 25th, we had a recurrence of the gale. This was not so severe, but materially injured the lately-opened cotton, reducing the condition to 25 per cent. It also did great damage to the corn. On the 18th of September, 1854, just twenty-one years ago, this county suffered a similar disaster, though the storm was less in duration and extent. *Bastrop:* The great storm, which caused immense havoc and ruin in our coast towns, did much damage to the cotton-crop in this county. The loss is not less than 1,000 bales, or 10 to 15 per cent. of the amount opened.

MIXED HUSBANDRY VERSUS COTTON.—*Sussex, Virginia:* The cereals are attracting more attention from our farmers. They are becoming more alive to the fact that cotton alone is not sufficient for all the demands made upon it. Before the war we raised negroes, and worked them, ourselves, and our lands almost to death in order to get money to buy more negroes. Now, cotton has been substituted for the negro. We work ourselves almost to death to make cotton, and, as soon as made, we sell it to buy commercial fertilizers and hire labor to make more cotton, and so on, never having anything except a little cotton, which we expend, in the ways indicated, to enable us to make more cotton. But let us get to making grain largely, raising stock, and diversifying our crops, and the good old days will return when, instead of sitting down to our dinners with a little piece of *scrawny western shoulder*, bought on credit, we will have Virginia ham and cabbage, both of our own raising, and all the splendid luxuries on which we were raised, but which *now* are creatures either of fancy or of the memories of the dead past.

Nash, North Carolina: We are beginning to plant wheat and turn more attention to grass and stock-raising.

Hart, Georgia: The farmers of the county have raised more provisions than in any year since the war, and there is a reasonable prospect of a greater increase next year.

Henry, Alabama: Our people are determined to plant more small grain than ever since the war, and to study economy in every department of the farm. We will try to make our farms self-sustaining, and at the earliest day possible will remove our smoke-houses and corn-cribs from the West and locate them at home.

Carroll, Louisiana: The county will raise plenty of corn for home consumption, and more meat than for years.

CASTOR-BEANS AND FLAXSEED IN MISSOURI.—*Vernon:* Castor-beans and flaxseed are quite crops in this county. The former averages this

year 13¼ bushels per acre, or 106,000 bushels in the county; the latter 6¾ bushels per acre, or a total of 133,000 bushels.

Saint Clair: Castor-beans and flax are crops with us this year. The latter was greatly injured by the wet weather.

Pettis: The crop of castor-beans is quite large for an experiment, and promises a large yield.

LARGE POTATOES.—*Knox, Kansas:* On my garden, first crop, after breaking the sod, I planted one-half bucket of Early Rose, cut to single eyes, planted two feet distant. The yield was 30 bushels, and the average weight was a half pound each, many weighing one pound each, and over. Potatoes weighing two pounds each are reported in the county.

BROOM-CORN.—*Sumner, Tennessee:* The broom-corn crop of this county has been quite remunerative, yielding at least $40 per acre. About 800 acres were planted.

Saint Clair, Missouri: About 100 acres of broom-corn were raised in the township of Roscoe, and other crops were raised in the county. The yield is very heavy. It is now baling for market.

CENTENNIAL ADDRESS.

Upon the occasion of breaking ground for the erection of "Agricultural Hall," preparatory to the celebration of the Centennial, at the park in the city of Philadelphia, the Hon. Frederick Watts, the Commissioner of Agriculture, was invited by the United States Centennial Commission to deliver an address on the 4th of July, 1875. Upon the platform erected for the speaker there were Maj. Gen. Jos. R. Hawley, President of the United States Centennial Commission; Hon. D. J. Morrell, chairman of the executive committee; Ex-Governor William Bigler; John Welsh, esq., President of the Centennial Board of Finance, with a number of the members of the legislature and members of the select and common council of Philadelphia. The following is the text of the address:

FRIENDS AND FELLOW-CITIZENS: We are prone to congratulate ourselves upon the attainment of our glorious independence—proudly to boast of the happily-conceived Constitution and laws under which we live, of the commerce of the seas which we enjoy, the right to choose the professional career of life for which our talent fits us and the manufacturing industry which our energy or taste may indicate; freely to express our thoughts without fear, and, above all and over all, to worship God according to the dictates of our own conscience. But what were all these if they were bestowed upon a barren and fruitless land? How worthy would they be of our consideration if we could forget for a moment that the enjoyment of them all is dependent upon the successful efforts of man to cultivate the earth?

What of the spirit of independence if our surroundings were the threatenings of poverty? What of the fundamental law of the land, if for our lives and property we had not constantly in view the stimulants which the productive character of the earth affords? What of the speculative and roving business of the merchant upon the high seas of the world, if he had not the products of agriculture to deal with? What of the ingenuity and skill of the manufacturer if his daily bodily wants were not supplied by the farmer? What of the value of freedom of thought and speech, if it were not for the marvelous proceeds of the earth, and the science and skill by which they are produced? And with what spirit could we approach God's throne of grace if we had not all these results for which to be thankful?

It is fit and proper, therefore, that in the preparation now being made to celebrate an event which affords a resulting example of free government to the world, and an exposition of its ability to progress in art and science for the first hundred years of its life, that they who plan this work and seek to guide its progress to a successful termination should give prominence to that feature which will dedicate this spot to the

nterests of the farmer, and not only so, but to the undying memory of the Hon. Richard Peters, who lived and dwelt here, and whose name is like a household god in the family of every Pennsylvanian, to be worshiped as a teacher in the science of agriculture.

When we reflect that one-half of the population of the world is engaged in the business of agriculture, and that they and the other half are dependent for their existence upon its successful results, and both constantly hope that the bountiful supplies of God's providence may conduce to an abundant harvest, we have the united prayer of the whole human race, "God speed the plow."

It is not, then, to be considered a subject of wonder that we assemble here to-day to signalize the effort to give prominence to the position which the science of agriculture is to take in this international exhibition of this New World's progress.

What occupation of life has made such strides as that of agriculture? The steam-plow of to-day will supply the labor of the fifty horses of a few years ago; the separator now does the work of fifty men; the reaper and its attendants will accomplish fourfold the work of the labor of men, and with the rake, the tedder, the roller, the hay-fork, by all of which labor is made easy, and the laborer relieved from the toil which once oppressed him. In the exhibition of the world's progress there is no more favorable example than the march which the science of agriculture has made in the last century. A hundred years ago it was enough to know that if the earth be stirred and the seeds be sown their product and all else was the natural result of God's providence; that the plow, rude as it was then, was the best implement with which to till the earth, and that seed sown by the hand of man was all that was necessary to enable us to drag through the natural period of existence, thus made toilsome and miserable.

But the eyes of men have been since opened. It is not now enough to know that we live and move and have our being. That large portion of mankind engaged in the work of the world was not content thus to grovel and crawl, but were startled into an attitude of ambition and enterprise by the prodigious products of the minds of men around them, and their march was onward, never again to relapse into or contemplate an inferior condition. Now the agriculturist is taught to look upon this lovely earth of ours as the beautiful landscape of God's creation, which is imbued with the powers of life, to breathe and feed, and to yield its elements and products to the nursing and delicate operations of his hands. While he follows the plow he perceives its use; he sees in it how the educated mind of man has infused mechanical science into its structure. He marks well the work it has to do, and how well it is adapted to the work. He now contemplates the seeds he commits to the earth, and does not believe that it is the work of chance that they grow. He sees, too, that they are imbued with the germinating powers of life and light. He perceives that they are distinguished by the qualities of good and bad, and he knows that perfect analogy which characterizes life in its inception, growth in its progress, the product of their results, and the final death of all vegetable as well as animal creation. But, above all, and more than all, he has learned to know himself; that he is a part of this special work of God's hands, placed here to direct and govern all these things.

These are no artificial objects on which the agriculturist is to expend his happy life and thoughts. They are the delightful things of nature on which he operates, and nature co-operates with him in all his labors, and sweetens them to his contented spirit. And he rests upon this as the grand secret of his attachment to rural life, that, while he modulates and benefits by her functions, she takes up, quickens, and completes the work of his hands.

There is a living, moving, acting principle in the labors of the agriculturist which distinguishes his from other pursuits of life; the earth yields its strength and increase to the seeds he casts upon it, and to his cattle that walk upon it; the winds seem to blow, the rains to fall, and the waters to run for him; the very frosts and snows of winter give salutary checks to vegetation, lighten his soil, and destroy what is noxious for him, and every principle of animal and vegetable organization and existence co-operates to support and enrich him. There is a charm in this which must last while the spirit of man feels and acknowledges the strivings of his own mind, and the omnipotent power of God around him.

Farmers do not reason thus, but they feel it, and it is the mysterious working of this acting charm which has infused its sweetness into the hearts of all rural people in all ages of the world.

We have assembled here to-day to initiate a leading feature of the approaching centennial; to mark and fix the place where will be collected the products of American soil, and the machinery used in its production, a place to which the attention of the world will be called as a marked feature of the event which the approaching centennial meeting is intended to commemorate.

One hundred years ago this land was comparatively a barren waste, the habitation of savages and wild beasts, while now it is a beautiful garden; the field of the farmer, the home of the scientist, the city of the merchant, the office of the student, and the shop of the mechanic, where all work together in the prosecution of a common pur-

pose to promote the wealth, the health, and the happiness of each other, and the honor of our much-loved country.

In taking the first step toward the erection of this house, to be dedicated to the work of agricultural science, we address ourselves to the merchant and mechanic, the active and energetic motive-powers of busy life, and ask them to look with favor upon a project which has for its object the display of industry and science, as exemplified by the products and implements of agriculture. The busy marts of men are filled with the products of the farmer. His success and his profits largely contribute to that trade and commerce which are the products of your enterprise.

While the abundant yield of the husbandman enriches him, the result is favorably felt in every department of the merchant's counting-house and the mechanic's shop. As then you move and make your impress upon the minds of men, let your actions be tempered with the idea that all business, whether in the merchant's store, the mechanic's shop, or the mariner's ship upon the ocean, is dependent for its working elements upon the product of the farm.

We will not appeal in vain to the professor and the student, who possess the lights of reason and enjoy the fruits of knowledge, that their influence may be thrown into the scale of agricultural progress, that while you have in your hands that helm of power which gives direction to the elements of government you will always have in mind that to promote the true and efficient principles of political economy, to expand and increase the influence of that virtue whereby alone we may hope to maintain our own free government and laws, is to encourage the farmer.

We ask of the statesman while he advocates the interests of his constituents at the bar of the Senate, of the lawyer who advocates the cause of his client at the bar of justice, and of that sacred office which advocates the cause of man at the bar of Heaven, that they may ever remember the magnitude of the bounties of God's providence which come from the hands of the husbandmen.

Let me not forget to exhort her whose influence is always so strongly marked upon the characters of men, from their cradle to their grave, to look kindly and with favor upon that marked morality which characterizes the life of the husbandman—the mother whose affections root so deeply in the existence of her child; whose anticipations are often stimulated to painful anxiety for its welfare; who watches its progress in life with an eye to doubt and danger; whose hopes are elevated to the Giver of all good, that He may smile graciously upon the career of her darling child, or whose fearful forebodings may be realized in the spectacle that he is despised by the society of men and frowned upon by the attributes of Heaven. We invoke the prayer of this influence on the work this day began. And to all those assembled here we ask a helping hand and cheerful spirit in aid of those patriotic men who have undertaken to exhibit to the world the progress which has been made in science and art under the stimulating influence of a free government.

ENTOMOLOGICAL RECORD.

By Townend Glover, Entomologist.

The chinch-bug.—The chinch-bug or Mormon louse of Walsh, *Micropus* (*Rhyparochromus*) *devastator*, is one of our most destructive insects to wheat, corn, &c., in some of the Western States, and has done considerable damage to the crops. The eggs, to the number of about 500, are laid in the ground about June, on or among the roots of plants, and the young larvæ, which are of a bright-red color, are said to remain underground some time after they are hatched, sucking the sap from the roots, and have been found in great abundance at the depth of an inch or more The full-grown insects measure about one-twelfth of an inch in length, and are of a black color, with white wings, and may be known by the white fore or upper wings, contrasting with a black spot in the middle of the edge of the wing.

According to Dr. Shimer, an entomologist who has devoted much time and labor in the special study of this insect, the female occupies about twenty days in laying her eggs, which remain in the egg state fifteen days. The first brood matures from mid-July to mid-August, and the

second brood hatches out late in summer. Although only two generations are usually produced in the course of one year in Illinois and the more northern States, yet farther south there may be three broods. Some of the perfect insects continue alive throughout the winter, concealed under brush-heaps, logs, bark, stones, moss, &c., and revive in the spring to deposit their eggs in the earth. One specimen was taken in Washington, buried in the ground at a depth of about one inch and a half, in midwinter, and when first taken up appeared stiff and lifeless, but, after being placed in a warm room, it soon revived, and was as lively as ever. These insects in the larvæ, pupæ, and perfect states attack and destroy almost every description of garden-vegetables, grain, maize, herds and other grasses, wheat, oats, potatoes, and even injure buds of the pear and other trees, preferring principally the most succulent parts, as the buds and terminal shoots, puncturing them with their beaks, sucking the sap, and apparently poisoning the parts attached. In the summer of 1865, according to Dr. Shimer, the progeny of the broods of the preceding year were entirely swept off by an epidemic disease, which was doubtless produced by deficient light and electricity combined with the excessive humidity of the atmosphere.

This insect was named and described by Say, in 1831, as from Indiana, and in 1854 did considerable injury in Missouri. In hot, dry seasons these insects are most destructive, but heavy rains destroy them. In the single State of Illinois, Dr. Shimer estimated the damage done in 1864 to the wheat and corn crops by the chinch-bug at over $73,000,000; and to give some idea of how these insects swarm in localities, it has been stated that in Ogle County, Illinois, as many as thirty to forty bushels a day were taken out of holes dug to entrap them, and the process was repeated until only three or four bushels could be shoveled out of the holes.

It is probable that the normal state of this insect is to take wing in spring and summer, during their love season, but at other times they appear unwilling to use their wings at all; and it is said that there are two varieties, one with long and the other with short wings. It is also stated that this insect is found in Canada, and was remarkable for having the wings only half as long as the abdomen. Chinch-bugs multiply much faster in dry seasons, wet weather being unfavorable to them.

They are destroyed by several parasites, among which are several species of lady-bugs, (*Coccinellidæ.*) The false chinch-bug, an insect mentioned below, and which, in outward appearance, very much resembles the true chinch-bug, is said to kill them; and two or three lace-wing flies are said to destroy them. The common quail is stated to eat numbers of them, and therefore these birds should be preserved as much as possible, by wheat-growers especially, as the stomachs of some shot in wheat-fields were found to be filled with these destructive pests. The pseudo or false chinch-bug, or insidious flower-bug, above mentioned, has frequently been mistaken for the true chinch, as it resembles it somewhat in shape and size. It is found upon the same flowers and leaves, but the larvæ are of a bright orange color, and not of a vivid red, like those of the true chinch; and the perfect insect is also smaller, of a broader form, and marked in a different manner. It is probably highly beneficial, by feeding on other insects. Two European species, *A. minutus* and *nemorum*, have been well known as preying on plant-lice. The perfect insects inhabit flowers, and the immature ones wander about in search of plant-lice, which they transfix with their sharp beaks, and suck out the juices. Our native species (*Anthocoris insidiosus*) most probably also feeds on the true chinch and


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the grape-leaf gall-louse, (*Pemphigus vitifoliæ.*) This insect is extremely common in Maryland on the ox-eye daisy, and not unfrequently upon the fruit of raspberries and blackberries, and is one of the insects which produce such a disagreeable chinchy taste when taken into the mouth with the fruit.

Many remedies have been recommended or suggested for the destruction of chinch-bugs, or to drive them away; among the rest, lime is said by some farmers to have been used with good effect, when dusted over the plants when the insects first appear. Other farmers, however, assert that they have used lime, and have derived no benefit from it. Burning the ground before plowing, or after the infested crops have been removed, has also been recommended, and all the chaff and refuse remaining after winnowing grain ought likewise to be burnt. If small piles of refuse or trash be heaped up here and there in the fields, and, after cold weather sets in and these heaps are dry enough to burn, they are fired on a chilly morning, all the insects sheltering under them will be burned and destroyed, as the chinch-bugs are very apt to take shelter under such heaps from the inclemency of the weather. From other farmers we have received reports as to the efficacy of gas-lime in driving the insects away from growing crops, but they say nothing about the benefit or injury the plants themselves receive from such an application.

In a former report, Mr. Laughlin states that although he used lime with no effect whatever, yet "the application of salt to only one acre of wheat, in the proportion of one bushel to the acre, drove all the insects away, and saved the crop on that single acre, while the rest of the ten acres planted was destroyed by the chinch-bugs." Salt, however, when applied too freely, would be very apt to injure the plants themselves. Mr. Laughlin also states that he was satisfied that if he had sown $1\frac{3}{4}$ bushels of rock-salt (not more) to the acre, by the first of June, or ten to fourteen days sooner, he would have saved his whole crop; and, at the same time, he recommends a spoonful of salt to be put to each hill of maize. Some farmers at the West tried the experiment of sowing Hungarian grass with wheat and other grains, and state that their crops have been saved by the chinch-bugs preferring the tender grass and leaving the grain uninjured. Open trenches or ditches, dug around the fields overrun with chinch-bugs, have been highly recommended as preventing the migrations of these insects from an infested field to another uninfested field in the immediate vicinity. These trenches should be dug a foot or more in depth, having a sloping side toward the infested field and a perfectly perpendicular side toward the field intended to be protected, so that the insects could readily crawl into the trench from the field already injured, and, not being able to crawl up the perpendicular side toward the uninjured field, would fall back into the trench, and could be destroyed by lime, or gathered up and destroyed by fire or some other means. It would even be better if the perpendicular side of the trench should slope somewhat inward at the bottom, so as to make its upper edge project a few inches over the trench, and then it would be almost impossible for any chinch-bugs to ascend and crawl into the next field.

Pine or fence boards set lengthwise and close together, or the ends even a little overlapping each other and sunk a little in the earth, so that the bugs cannot creep through the crevices made by the joining of the boards or underneath, and the upper edge of this fence kept moist with coal-tar, will also prevent the migration of the chinch-bug from field to field, as they are unable to cross the tarred line, and fall to the

ground. Insects of this order are not very apt to be killed by applications of such poisonous substances as Paris green or hellebore to the outer surface of plants, as has been recommended for the destruction of the Colorado bug or potato-beetle, as the chinch-bugs do not eat the whole substance of the leaf, like the real beetles, but merely insinuate their piercer or sucker through the outer cuticle into the parenchyma, or inner fleshy substance of the leaf and stem, in order to suck up the sap, leaving the outer surface on which the poison is deposited almost undisturbed.

TWO METHODS OF DESTROYING THE COLORADO POTATO-BUG.—The Department of Agriculture has received, through the President of the United States, a communication addressed to the Executive by two French gentlemen of Point-a-Pitre, Guadaloupe, West Indies—Count A. d'Adliemar and G. Barret de Nazaris—announcing their discovery of two effectual methods of destroying the Colorado potato-bug, which they freely offer to the people of the United States. The first of these remedies is as follows: Soak guano in lime-water, and apply the liquid to the roots of the potato-vines. The second: Take lime-water, salted to two arcometric degrees, and in it dissolve two kilograms (say five pounds) of common sulphide of potassium to each cubic meter (say 264 gallons) of water. Pour this mixture into the concavities of the ground all around the potato-vines. This last remedy is said to have been used in France with excellent effect for destroying the *Phylloxera* upon grape-vines.

The remedies as above proposed for the extermination of the Colorado potato-beetle have evidently been written by theorists who know nothing whatever of the habits of the insect, and under the false supposition that it injures the roots, like the root-louse or *Phylloxera* in France, which, being found on the roots under the earth, may be destroyed by liquid solutions or mixtures which soak into the ground. Our *Doryphora*, however, does not attack the roots at all, but contents itself with the foliage.

MICROSCOPIC OBSERVATIONS.

BY THOMAS TAYLOR, MICROSCOPIST.

In accordance with instructions of the Commissioner of Agriculture, I attended the annual meeting of the New Jersey Cranberry Association, which met at the Tom's River, New Jersey, on the 9th of September last. It was composed of a large and highly intelligent class of gentlemen, nearly all of whom are engaged directly in cranberry culture. The subject which principally engaged the attention of the members was the cranberry-rot and its remedy. The effects of manuring, irrigating, salting, sulphuring, liming with gypsum and caustic lime, sanding, and the use of phosphates were all discussed, and various opinions expressed as to their respective merits.

The secretary of the society, Mr. A. J. Rider, stated that he had tried guano, phosphates, lime, plaster, salt, and sand, all of which had proved beneficial, with the exception of salt. The methods of application have much to do with the substances employed. Weak solutions of manurial compounds will prove of more value, when frequently applied, than those highly concentrated. Mr. D. R. Gowdy said that he had used no fertilizer until the present year, when he spread 600 pounds of guano on five acres of bog land, but discontinued the use because he noticed that

the vines were dying where the buckets containing the guano had been placed. Mr. Gowdy thought that he should pick 1,000 bushels this year where he obtained only 193 last year. Several members stated that the application of plaster, phosphates, guano, and lime has proved to be of great value in increasing the growth of new roots and vines, but that it is conceded by all intelligent cranberry-growers that an application of sand every four years to the extent of at least one inch in depth is much better. The object of sanding should not be misunderstood. It is simply to increase the growth of rootlets, branches, and leaves. It, therefore, increases the necessity for the application of available plant-food, which should be experimentally and intelligently applied.

It has been shown by an analysis made in the laboratory of this Department (see page 125 monthly report for February and March, 1875) that the cranberry contains insoluble silicates, lime, magnesia, peroxide of iron, phosphoric and sulphuric acids, chlorine, potassa, and soda. The new roots absorb these substances from the earth and the leaves elaborate them into the proper food for the growth of the berries.

Since making my investigations on the cranberry plantations of New Jersey and Cape Cod, I am convinced that the scald and rot, so called, of the berry may arise from dissimilar causes, although chemically considered they are practically the same, viz, the conversion of their starch into grape-sugar, a fermentable substance forming a nidus for the growth of fungi. All fruits have a tendency to decay more or less while growing under unfavorable conditions, not only before but after they are considerably advanced in size, and especially while they contain their minimum of starch. In this condition, particularly during rainy seasons, the fruit contains its greatest percentage of gum, organic acids, and water. The fruit, under these conditions and high temperature, frequently ferments or rots. In such cases I have always been able to detect the mycelium of fungi within the berries. In the early stages of the rot the mycelium appears first on the inner surface of the skin. When a portion of the rotting pulp is viewed under a power of about 300 diameters its many ramifications are easily seen. I have frequently shown this fact to the cranberry-growers by the use of the microscope.

At the request of this Department, Mr. A. J. Rider, secretary of the association, in August last forwarded sixteen samples of peaty matter taken from healthy and unhealthy cranberry-plantations of New Jersey. One-half of the samples consisted of sub-soil; the others of top-soil. Twelve were from the unhealthy and four from the healthy bogs. Solutions of all were made in pure water, and allowed to remain in a room at a temperature of about 75° Fahrenheit for twelve days to settle and give time for fermentation, the object being to ascertain the presence of albuminoids in the solution, or solids present. The healthy specimens were taken from the bogs of the Rev. Isaac Todd and Mr. Newman, whose plantations are noted for their healthy condition, and on which rot has not been known for the last ten years. These gave perfectly pure solutions. The peaty matters of these bogs are composed chiefly of small twigs and leaves, and are well rotted. Their solutions are colorless, and no infusorial or fungous scum appears on their surface. A specimen solution of Mr. Todd's peat has been in my possession over twelve months. It contains about half a pound of peat to a pint of water, but has given no indications of mold on its surface during all this period, while a solution of peat from an unhealthy bog standing by the side of it during the same time remained highly colored, and a thick scum appeared on its surface. This scum was composed of infusorial and fungous mycelium and spores. The twelve solutions from the un-

healthy bog-peat were more or less colored, some of them being thickish and soluble. These exhibited slight fermentation after standing twelve days. In fifteen days swarms of infusorials appeared in the surface-scum when viewed by the microscope.

In my first report, published in the monthly for October, 1874, I showed that the principal cause of cranberry-rot was improper cultivation. In many cases the vines have been planted in fermenting peat-soil; but it has also been shown that high temperatures and great drought produce the same results, as was the case near Pemberton last year. There are many seeming contradictions as to the cause of cranberry-rot, and some growers have lost all confidence in human judgment on the subject, and are disposed to leave the cultivation of the cranberry to nature. The following will illustrate some of the principal facts which have led to great confusion of ideas among growers: H has a bog always covered with water; his berries never rot. B, his brother, has planted a bog, similar as to quantity of water, with vines selected from the plantation of H. After copious rains and hot suns the berries of B rot while those of H remain in perfect condition, although growing apparently under the same general conditions. This seems inexplicable. But the bog of H is surrounded by high bluffs which pour out a never-ceasing supply of comparatively cold water. The roots are kept always cool, but not too cold for growth. The fruit is longer in maturing than that of some of the neighboring plantations differently situated, but the berries of H ultimately become fully matured, very firm, and highly charged with starch. B has no high bluffs to supply him with cool water. On the contrary, his bog lies in an open plain, subject to the effects of a scorching sun. The temperature of the water becomes too high for healthy growth, and his berries consequently succumb to these unfavorable conditions.

There is conclusive evidence that matured berries will grow only on matured vines. It is the experience of all growers that the berries of vines two or three years old, however large and beautiful, are not good keepers; while the same vines when they become aged, under ordinarily favorable circumstances, will produce good-keeping fruit. As a general rule, it is found that the old healthy bogs produce the most reliable fruit.

When at Pemberton last year I expressed the opinion that the cranberries growing in that neighborhood rotted from drought and high temperature. Nearly all of the soil in that district seemed to be free from bad odors; but, under converse conditions this year, rot of the berry occurred on the same plantations. One of the most intelligent growers of Pemberton informed me that the rot commenced immediately after the heavy rains of August.

The cranberry-plant is very hardy; its leaves are glossy and strongly resist climatic changes. Its wood has a solid texture, and withstands very cold weather, although it may be killed by a severe frost. The roots, when planted in pure sand, or when growing in gray moss, have a translucent, whitish appearance, and are not easily broken. Unhealthy roots are of a dark brown or blackish color, and may be ground into a pulp between the fingers. The blossoms and berries are, however, very much subject to blight or rot. When we take into consideration the large amount of water contained in the best varieties of the cranberry, it need not be surprising that inferior kinds should succumb under even slightly unfavorable conditions. The following are the results of an analysis, made at the Department, of a dark-colored and

hardy variety of the cranberry, taken from the plantation of C. G. and E. W. Crane, of New Jersey, known as the Cape Cod Early Black-Bell:

Moisture	86.50
Organic matter	13.25
Inorganic matter	25

The common potato, which is a very succulent tuber, has only 74 per cent. of water, and with that amount is very liable to ferment when subjected to a moist atmosphere followed by high temperature.

When the cranberry is well formed and firm in texture, its ripening should not be hastened. Sudden transformations of conditions should be avoided, so as to prevent a renewal of root and wood growth when it is desirable to bring the berry to maturity. My advice to the members of the association is the same as last year, namely, irrigate, sand, and lime all unhealthy plantations, and be more careful in the selection of new bog-land for cranberry-plantations.

The following letter from Mr. Bishop, one of the most noted cranberry-growers of New Jersey, will be read with pleasure by all interested in cranberry culture:

MANAHAWKIN, OCEAN COUNTY, NEW JERSEY, *September* 30, 1875.

HON. FREDERICK WATTS,
Commissioner of Agriculture:

SIR: In answer to your inquiries in regard to the cranberry-rot on my plantations this season, I would say that on the large one, called Oxycoccus, visited last year by Mr. Thomas Taylor, microscopist of your Department, I shall have a larger, perhaps much larger, crop of very fine fruit than I had the year he visited it. I have found soft berries on several small spots of the plantation, but not in sufficient quantity to cause any serious fears of permanent injury. We had never noticed or thought anything about soft berries at Manahawkin until last season, but the great interest now felt in this matter has caused us to inquire carefully into the past history of wild and cultivated bogs in our vicinity. We have recalled to memory two or three small spots of bog on this plantation which produced a few quarts each of soft fruit several years since, yet on those spots we have had fine fruit continually since that time.

Mr. Charles Hinchman, of Taunton, was here about the first of the month, while I was absent. His experience is large, and his judgment so good, that I always listen with interest to what he says about cranberry-culture. When he saw some berries on young vines growing on the hot dry sand which covered the peat, he said that the softness of the berries was not occasioned by the causes which usually produce the "rot," but was the result of the intense heat of the sun. On all my finest-producing beds of old vines, which have yielded hard fruit for years past, I remember that the vines when young produce soft berries, but after they became well matured and matted—say, when four or five years old—the fruit yielded was of good quality, and has continued to be so to the present time.

While I cannot help feeling that you have found the main cause of the "rot," I am still forced to believe that much of the soft fruit found on very young vines is the result of the very hot rays of the sun and moisture, independent of fermentation of imperfectly-drained bog-bottoms. We are harvesting at present a very fine crop of cranberries. The fruit is larger, more highly colored, and more abundant than that of last year, despite the most unfavorable season for their cultivation that we have ever known. Cranberries taken from the vines, and left for two or three days on the black peat along the ditches, would in a short time become thoroughly baked like apples that have been cooked in an oven.

FACTS FROM VARIOUS SOURCES.

AGRICULTURAL STATISTICS OF INDIA.—Mr. C. R. Markham, a prominent Anglo-Indian statistician, in a late paper before the British Society of Arts, states that in oriental countries the necessity for agricultural knowledge has been recognized from time immemorial, and statistics have been gathered, but unfortunately the records have not been

carefully preserved. Attention to this vital point has marked all periods of good administration of government, and its neglect has ever been the concomitant of social disaster and misery. In India the reign of Akbar still looms up amid the imperfect memorials of history as an era of great prosperity, in which the interests of agriculture were brought within regulations devised by profound wisdom. British rule has embraced the principles of native legislation, and has adapted itself to the agricultural problem in India with remarkable sagacity. The relations of village communities, of land tenures, and of other social interests have been settled into a regular system of common and statute law and of recognized local customs, which have given stability to the productive system of that vast empire. Special attention is given to agricultural statistics, upon the correctness of which the welfare of the people directly depends. The variation of local institutions and customs renders it difficult to reduce such statistics to a uniform system, but the facts are laboriously gathered, and the best practicable use made of them. As an illustration of these local differences, it is stated that in Bombay the land-revenue amounts to 3*s.* 4*d.* per head; in the northwest provinces it is 2*s.* 5*d.*; in the Punjab, 2*s.*; in Madras, 2*s.* 6*d.*; in Bengal and Assam it is only 1*s.* 1½*d.*

To give a more graphic idea of Indian social life, Mr. Markham selects a village in the Bombay presidency as a type. The village system is here in better preservation, and records of statistical inquiry at three different periods are more numerous and accessible. The Bombay agriculturist is a lean man, with prominent muscles, small hands and feet, eyes full and black, cheek bones high, and teeth stained with betel. His clothing is by no means abundant. He is frugal and provident, devoted to his children, more intelligent than European laborers in general, but cunning and false. He is one of a population of 600 to 1,000, cultivating an average tract of 4,000 acres, and lives in a village of 150 to 200 houses of sun-dried brick, with terraced roofs and open porticoes, and a few small, dark, interior rooms. The furniture consists of a few copper cooking-utensils, about twenty earthen pots for the storage of rice or grain, a kneading-trough, and a few other very elementary articles of furniture, the whole not worth over $10. A yoke of oxen and a plow of cross-sticks, without plowshare, a rough wooden cart with solid wheels, a harrow with wooden teeth, and a few other rude implements constitute his stock in trade.

The arable land is classed as unirrigated, irrigated, and garden land. Two crops are generally grown; for instance, spiked millet, sown in June or July and harvested in October or November, is immediately followed by wheat or other cereals, to be harvested in January or February. The land is plowed only every other year, and that only to the depth of a span, but it is frequently subjected to the drag-hoe, first lengthwise and then across, in order to kill the weeds. The grain is trodden out by bullocks, the ears having been separated from the stalk, and winnowed by being poured from a vessel held several feet from the ground in a strong breeze. The agricultural laborer requires but little food, and that very inexpensive. A cake of millet, a few greens, pods, or fruits cut in pieces, boiled or fried, and a little coarse porridge are sufficient for his sustenance. His labors are diversified by pilgrimages to temples and holidays. In October he paints his oxen with fantastic colors, dresses them up as deities, feeds them with sugar, and then falls down before them in abject worship.

The statistics of agriculture are collected through a peculiar local government. The *barra baloota*, which is a board of twelve village

fathers, including the *patel*, or head of the village, the *kulkarmi*, or accountant, the *sutar*, or carpenter, the *lohar*, or smith, the *chamhar*, or shoemaker, &c. These officials receive for their services a regular allowance in money or produce, and do the work of their respective handicrafts without charge to the villager, who only furnishes the material to be manufactured. As their perquisites consist, in part, of certain proportions of the growing crops, they necessarily inform themselves of the extent and character of those crops. This social organization then furnishes, ready to hand, the machinery for the collection of agricultural statistics. The original records are kept in the vernacular language, abstracts of which are translated into English for the information of the Anglo-Indian government.

The statistical unit of land is approximately the smallest extent that can be plowed with two bullocks and tilled by the cultivator or breadwinner for the support of his family. In the Bombay "survey" the "numbers" or fields of a village, varying in size from what a pair of bullocks can plow to double that quantity, are carefully measured, with the necessary "checks" to insure accuracy. Lands held by different tenures and for different kinds of culture, such as wet, dry, or garden land, are treated as separate "numbers." The "checks" are taken by a European assistant, and the errors of native measurement are not allowed to exceed two per cent. After measurement the "numbers" are classified, for assessment purposes, according to the productive capacity of soil, into three kinds—black, brown, and yellow or gravelly. They are gauged again according to their depth, on which depends their ability to imbibe and retain moisture. The presence of "faults," or deteriorating ingredients, such as nodules of limestone, sand, want of cohesion, roughness of surface, &c., is also noted, as well as facilities for irrigation, distance from market, &c.

At intervals of several years a regular return is made for each village of the above statistics, but every year there is a special return showing the number of acres under twenty-eight of the principal crops, with the number left fallow, besides prices and rates of wages and village population. The village accounts of each district, called a *taluk*, are consolidated; the *taluk* accounts are aggregated in those of a *collectorate*, and these into a whole presidency. This is the normal system of the Bombay presidency, which is the type of Indian social organization. In other presidencies more or less important modifications of the system are extant. The records of the Madras presidency, between 1810 and 1825, are especially full and complete. The present measuring system is more accurate than in Bombay, while the classification of soils is preserved upon similar principles. Annual returns are made of the area of cultivable and uncultivable land in each village, of irrigated and dry crops, including specially sugar, cotton, and indigo, with prices and rates of wages; but the acreage in millets, pulses, and some other crops is not given in Bombay, Punjaub, Oudh, &c. There is also in Madras a quinquennial census of population, live stock, implements, &c., such items as are furnished in Bombay at each periodical "settlement." The records of the northwest provinces have not been kept up to date, though they are quite full for the period represented. The central government has taken measures for the completion of these records. The Punjaub records, embracing accurate maps and plats of survey, are especially valuable, and special information is given in regard to classification of soils, rotation of crops, the number of plows, carts, and cattle, together with the population, prices, and rates of wages. In the lower provinces of Bengal the native machinery for the collection of such statistics has

been mostly superseded by other arrangements, and the information is but partially and superficially acquired by other methods.

An extension and perfection of the system of irrigation-statistics is demanded. The present returns give the area under irrigation, the classification of soils, and the rain-fall. It is proposed to bring these side by side with the village statistics and develop their close relationship. The sources of water-supply and the depth of wells are points upon which regular and definite information is solicited. The modifying influence of irrigation upon cultivation is illustrated by the fact that in a district of Rohilcund the area under well-irrigation increased between 1835 and the last "settlement" from 4,991 acres to 202,505. The expediency of introducing canal-irrigation in some districts rests on considerations which can be made obvious only by a more thorough statistical inquiry. In the open country of Mysore, for instance, the presence of population depends mostly upon works of irrigation. The tanks have been extended over about 60 per cent. of the country by the patient industry of the people.

The question of fuel and timber supply is also assuming a very serious aspect in India. Forest preservation and restoration have been commenced, but not before the pressing necessity of this movement has become generally apparent. In the "ceded district" cart-wheels are made of stone on account of the scarcity of wood. Other districts find their agricultural operations greatly crippled by the same scarcity. The destruction of forests has greatly curtailed the production of leaf and other forest manures, so that in many parts of India the land is permanently exhausted. Leaves have also been largely used for live-stock food, and their growing scarcity shortens the production of animal-manure. The influence of forest-denudation upon the deposition of atmospheric moisture also needs the collection of facts as a basis for the study of distribution of rain. A survey of reserved and communal forests has just been commenced in Northern India, but has not yet been sanctioned in Madras. Information upon these points, so vital to the agricultural character of the Anglo-Indian empire, is very superficial, and presented in a mutilated and fragmentary shape.

The important question of internal communications also demands both general and special statistical inquiry. It is certain that even in famine years the crops of India would be ample for home consumption if the means of intercommunication existed by which the surplus produce of the productive districts could be brought in contact with the scarcity of the deficient ones. The question of food-supply, then, resolves itself into one of distribution. The prices of grain, even in famine districts, precludes its transportation by ordinary methods for any material distances. How to secure such a distribution, then, depends upon a thorough induction of original facts and a comprehensive study of their significance, which demands a thorough system of statistics. The administration has become convinced of the necessity of raising the standard of intelligence among the native officials through whom these fundamental facts are gathered.

The leading original purpose of the government in compiling these statistics was to constitute a basis for the intelligent assessment of taxes. It has been found that, in many cases, these are too light, while in others they press with crushing weight upon the poor cultivator, absorbing nearly all his annual earnings. In some districts the squalid poverty of the farmer is beyond expression. He is the slave of the usurer and of the government, and lives on the verge of starvation. Improved methods of inquiry and a more intelligent study of facts have already discovered

some of these gross inequalities of administration and have suggested some means of partial alleviation. The gravest public interests imperatively demand the extension of the system of statistics and more effective devices for relief of the evils of the Indian social state. It is evident that disease and crime have been greatly increased by lack of subsistence. The moral discipline and well-being of society, then, demand that this great interest should be fostered, and that more effective measures be taken, both to ascertain the needs of Indian society and to devise measures to meet their demands.

In looking to foreign systems of statistics, Mr. Markham finds but little to approve of in the methods extant in England and Ireland, which are too dry and abstract, and without commentaries giving them a practical value. He finds his ideal better realized in the statistical system of the United States Department of Agriculture, with its organization of county boards of correspondents and its monthly returns from all parts of the country, regularly tabulated and interpreted by careful study. In France, agricultural returns are most voluminous, and are now being codified in valuable general treatises. Holland has of late directed special inquiries in regard to her colonial possessions in the East Indies, of which compilations with graphic illustrations have been prepared. These models Mr. Markham proposes for imitation to the Anglo-Indian government.

ENGLISH "AGRICULTURAL HOLDINGS" ACT.—This act, embodying reluctant concessions from the land-holding to the land-cultivating interest, applies only to England, and will be in force on and after February 14, 1876. After carefully defining the terms tenant, landlord, holding, &c., it provides that the tenant shall hereafter be entitled to compensation for three classes of improvements placed upon land, viz: 1. Drainage, erection or enlargement of buildings, permanent pasture, osier-beds, water-meadows or irrigation-works, making gardens, making or improving roads or bridges, making or improving water-courses, wells, &c., making fences, planting hops, planting orchards, reclaiming waste-land and warping of land; 2, boning land with undissolved bones, chalking, clay-burning, claying, liming, and marling; 3, purchased manure, artificial or other, consumption on the land of cake or other feed not produced on it. The first class shall be considered unexhausted for twenty years, the second seven, and the third two years after the termination of the lease. The amount of compensation for improvements of the first class is to be determined by the sum actually laid out, deducting a proportionate part for the continuance of the tenancy after the year in which the improvement was made; but if the landlord was not absolute owner of the holding at the time the improvement was made, the compensation shall represent only the actual addition to the letting-value of the land. For an improvement of the second class the compensation will be the actual outlay, deducting a sum proportionate to the time the tenancy endures after the year in which the improvement was placed upon the land. The compensation for a third-class improvement shall be the actual value thereof, at the termination of the tenancy, to an incoming tenant.

Improvements of the first class must be made with the full consent of the landlord, given in writing, and from the amount allowed shall be deducted what is necessary to put the premises in tenantable repair. Notice in writing must be given to the landlord from seven to forty-two days before executing an improvement of the second class. A claim for such improvement shall not be valid if executed after the tenant has received notice to quit, unless with the previous written consent of the

landlord, nor after an exhaustive crop, such as hay, potatoes, or corn, shall have been taken from the land. Breaches of covenant or waste, by either tenant or landlord, will subject their claims for improvement, or in reduction of said claim, to a reduction proportioned to the extent of the injury caused. Landlords' claims for waste committed more than four years before the determination of tenancy are barred.

An outgoing tenant must, at least one month before the expiration of his lease, give notice in writing to the landlord of his intention to claim compensation for improvements, and the landlord must give counter-notice within fourteen days of the same period. Such notice and counter-notice must set forth the particulars of each claim. A controversy between tenant and landlord shall be decided by a joint referee, or by two referees and an umpire, one referee to be selected by each party, and the umpire by the referees. Several provisions regulate the course of proceedings in case of the failure of the referees through death, disability, &c. Either party, on proper notice, may require the appointment of the umpire by the inclosure commissioners or by the county court. The appointment of a person as referee cannot be revoked. The referees and umpire may proceed to adjudicate the case after due notice to the parties, whether they are present or not. The award must be in writing, and duly signed by referees and umpire. A single referee must make his award within twenty-eight days after his appointment. Where there are two referees, the award must be made within twenty-eight days of the last appointment, but by consent of both parties it may be delayed to forty-nine days. Failure to do so within the time specified renders their appointment void. The umpire is allowed twenty-eight days, or such extended time as the registrar of the county court shall fix.

The award must state the time of exhaustion of improvements, and specify the separate acts and things for which compensation is awarded, and the amount awarded for each. The costs of the investigation shall be divided between the parties in a proportion to be determined by the referees and umpire, but shall be subject to taxation in the county court. The award must specify the day of payment, which shall be at least a month after its rendition. Either party, within seven days, may appeal to the county court to set aside the award, on the ground, 1, that the award is invalid; 2, that the compensation has been awarded, or that breaches of covenant or waste have been committed; 3, that compensation has not been awarded for improvements, waste, &c. The decision of the judge shall be final, save that, at the request of either party, he shall state a special case on a question of law to the high court of justice, whose decision shall be final, and the county court shall adjudicate the case in accordance therewith.

Other provisions regulate the proceedings in case the landlord is under age, of unsound mind, a married woman, &c. The county court shall regulate the cost of its own proceedings, but the lord chancellor shall from time to time prescribe a scale of costs.

AGRICULTURAL STATISTICS OF IRELAND.—The annual abstracts of inquiries made under the authority of the registrar-general of Ireland for 1875 have been published. These inquiries were made by 3,800 men, selected from the royal Irish constabulary and metropolitan police. The replies to those inquiries were entirely voluntary, no legal penalties being provided in case of refusal; yet of over 600,000 landholders only one refused compliance.

The total acreage in all the crops during 1874 was 5,331,655, an in-

crease over 1874 of 62,651 acres. Of the cereal crops, 161,321 acres were in wheat, a decrease of 26,657 acres; oats, 1,499,371 acres, an increase of 18,474; barley, 233,747 acres, an increase of 22,139; bere and rye, 10,312 acres, an increase of 411; pease and beans, 11,647 acres, an increase of 256; net increase in cereals, 14,623 acres. Of green crops, 900,277 acres were in potatoes, an increase of 7,852; 332,783 acres were in turnips, a decrease of 805; 43,274 acres were in mangel-wurzel and beet-root, an increase of 4,947; 34,874 acres were in cabbage, an increase of 1,690; 37,184 acres were in carrots, parsnips, &c., an increase of 2,490; 21,694 acres were in vetches and rape, an increase of 269; net increase in green crops, 16,443 acres. Meadow and clover crops covered 1,943,923 acres, an increase of 37,244. In flax there were 101,248 acres, a decrease of 5,659. The total decrease in wheat, flax, and turnips, amounting to 33,121 acres, deducted from the total increase of all other crops, amounting to 95,772 acres, leaves a net increase of 62,651 acres.

The wheat acreage has declined each year but one, 1874, during the last five years, being 244,541 acres in 1871, and 161,321 in 1875. The oats acreage showed an increase in 1875, but a decrease during the previous years, being 1,636,136 in 1871, 1,480,897 in 1874, and 1,499,371 in 1875. During the same period the barley acreage varied from 211,608 in 1874 to 233,747 in 1875; bere and rye from 9,924 acres in 1873 to 11,555 in 1871; beans and pease, from 10,913 acres in 1871 to 12,873 acres in 1873; potatoes fell from 1,058,431 acres in 1871 to 89,425 acres in 1874, but rose during 1875 to 900,277 acres; turnip acreage was highest in 1873—347,848 acres, and lowest in 1841—327,035 acres; mangel-wurzel and beet-root have gradually risen from 31,921 acres in 1871 to 34,874 acres in 1875; cabbage has varied between 28,115 acres in 1873 and 39,452 in 1872; carrots, parsnips, and other green crops have gradually increased from 29,869 acres in 1871 to 37,184 acres in 1875; vetches and rape had a maximum of 31,422 acres in 1871, and a minimum of 21,425 in 1874; flax has declined from 156,670 acres in 1871 to 101,248 acres in 1875; meadow and clover land has increased, with a little fluctuation, from 1,829,044 acres in 1871 to 1,943,922 acres in 1875.

The live-stock returns show an increase of 304 horses and mules in 1875, as compared with 1874; a decrease of 688 asses; a decrease of 12,766 cattle; a decrease of 193,540 sheep; an increase of 150,049 pigs; an increase of 12,141 goats; a decrease of 12,607 poultry. Of horses and mules, during the last eleven years, the number has gradually declined, with some fluctuations, from 568,142 in 1865 to 547,676 in 1875. Asses have increased during the same period from 168,009 to 179,742; the highest number, 181,351, being in 1872. Cattle have gradually gone up from 3,497,548 to 4,111,990, the aggregates of 1874 being a few thousand greater than those of the current year. Sheep were at their minimum, 3,694,356, in 1865; and at their maximum, 4,901,496, in 1868, declining to 4,248,158 in 1875. Pigs were in smallest number, 869,578, in 1868; and in largest number, 1,621,423, in 1871, declining to 1,249,235 in 1875. Goats have regularly increased from 171,207 in 1865 to 268,894 in 1875. Poultry has increased in the same years from 10,681,955 to 12,055,768.

Of stallions, in 1875 the number of thoroughbred was 403, of which 254 were native-born and 149 imported. The largest number of thoroughbred sires, 145, was in Munster; 134 in Leinster, 78 in Ulster, and 46 in Connaught. Of 542 half-breeds, 530 were home-born and 12 imported. Of 206 Clydesdale stallions, 161 were bred in Ireland and 45 imported. Of 126 Suffolk Punch stallions, 100 are natives and 26 imported. Of

138 draught-stallions, only 4 were imported. The grand total, embracing a few not enumerated above, was 1,476; of which 1,228 were home-bred and 248 imported. Leinster reported 456 of these, Munster 438, Ulster 393, and Connaught 189.

RECLAMATION OF THE ZUYDER-ZEE.—The reclamation of the Zuyder-Zee has long been contemplated by the Dutch people and government, in whom the hereditary instinct of conquest from the sea still survives. At the late session of the legislative body an appropriation was made for soundage and survey. It is now proposed to reclaim about half the surface of the inlet designated as the Zuyder-Zee by some geographers, or the whole of it according to others. An enormous dike, 40 kilometers or 24.85 miles long, is to be constructed from Kampen, near the mouth of the Yssel River, on the eastern shore, to Enkhuizel, on the western shore. The dike is to be 23 feet above the water-surface, with an upper parapet 16½ feet high and 10 feet wide on the top, sloping down to an exterior berme or bench 16 feet wide and 6½ feet above the water. An interior berme will serve first as a tow-path to a canal, and afterward as a track for a railway after the reclamation shall have been finished.

The dike will cost 53,000,000 francs, or over $10,500,000, and the entire expense of the whole work is estimated at 180,000,000 florins, or $87,120,000, allowing a value of one-tenth of a British pound sterling for each florin. The area embraced in the present project is about 481,864 acres, of which 46,950 acres will be needed for highways, canals, basins, &c. The remainder, 434,914 acres, will represent the amount of land disposable at a cost of about $200 per acre. Last December the government sold 875 acres of land reclaimed from Wykermeer, at an average of $1,051.09 per acre. At this rate per acre the national treasury would receive a prompt re-imbursement of the expense with a surplus of 400 per cent., or a clear profit of over $370,000,000. This, however, is somewhat excessive, but the surplus could scarcely be less than $200,000,000.

There is a difference of opinion as to the time necessary to complete the work, the estimates varying from twelve to sixteen years. The average depth of the Zuyder-Zee is stated at 4½ meters, or about 14¾ feet, and the total volume of water to be drained at over 7,500,000,000 cubic yards. A steam-machinery of less than 10,000 horse-power could expel the water within the embankments within two years.

The new province of Zuyder-Zee will be the tenth province of the kingdom, and will cover an area of seven hundred and fifty-three square miles, a little less than two average counties of Ohio. It will constitute about one-eighteenth of the surface of Holland. It will be a welcome addition to the productive area of this industrious kingdom, and will add greatly to the national wealth and resources.

AGRICULTURAL STATISTICS OF BRITISH COLONIES.—The following are from official statistics of British colonies, not including those of North and South America:

New South Wales: Population, 560,275; area, 207,000,000 English acres; total acreage under crops in 1873–'74, 456,825, viz: In wheat, 166,647; in barley and bere, 3,559; in oats, 16,173; in rye, 1,234; in maize, 116,141; in other grains, 276; total cereals, 304,030; in potatoes, 14,212; in sugar-cane, 6,671; in tobacco, 200; in vineyards, 4,525; in grass for hay production, 70,700. There was an increase of the total acreage over the previous year, and in oats, sugar-cane, vineyards, and grass; all others show a decrease.

Victoria: Population, 790,492; area, 55,572,000 acres; total acreage under crops in 1873-'74, 964,996, viz: In wheat, 349,976; in barley and bere, 25,333; in oats, 110,991; in rye, 722; in pease and beans, 14,229; in maize, 1,959; total in cereals, 503,210; in potatoes, 38,349; in tobacco, 583; in vineyards, 5,222; in bare fallow, 66,989; in grass for hay, 115,672. The total acreage in cultivation shows an increase over the previous year, as well as wheat, barley, rye, maize, beans and pease, and tobacco; the others show a decrease.

South Australia: Population, 198,257; area, 245,330,000 acres; total acreage under crops in 1873-'74, 1,225,073, viz: In wheat, 784,784; in barley and bere, 11,827; oats, 2,011; pease and beans, 4,295; total cereals, 802,917; potatoes, 3,813; vineyards, 5,217; bare fallow, 235,210; grass for hay, 142,167. There was an increase over the previous year in total acreage, wheat, and potatoes, bare fallow and grass for hay, and a decline in all the other crops.

West Australia: Population, 25,761; area, 626,111,000 acres; total acreage under crops in 1873, 51,724, viz: Wheat, 25,697; barley and bere, 5,083; oats, 1,474; rye, 1,423; pease and beans, 52; maize, 113; total cereals, 33,842; potatoes, 473; vineyards, 775; grass for hay, millet, and sorghum, 15,941. The total acreage decreased, as also did wheat, oats, and maize; the other crops increased.

Queensland: Population in 1872, 146,690; area, 433,920,000 acres; total acreage in cultivation in 1872, 62,491, viz: Wheat, 3,661; barley and bere, 852; oats, 155; maize, 21,143; other grains, 211; total cereals, 26,022; potatoes, 2,837; cotton, 12,002; sugar-cane, 11,757; tobacco, 52; vineyards, 391; grass for hay, 5,127.

Tasmania: Population, 104,217; area, 16,778,000; total acreage in cultivation in 1873,-74, 324,105, viz: Wheat, 58,610; barley and bere, 6,440; oats, 26,750; pease and beans, 6,272; total cereals, 98,072; potatoes, 7,910; tobacco, 13; bare fallow, 23,360; grass for hay, 26,406. Of these acreages all show a decrease from the previous year, except barley and bere, pease and beans, and potatoes.

New Zealand: Population, 310,437; area, 68,006,000 acres; total acreage under crops in 1872-'73, 1,416,933, viz: Wheat, 131,797; barley and bere, 15,266; oats, 96,958; potatoes, 12,623; bare fallow, 120,032; grass for hay, 33,588.

Natal: Population, 289,773; area, 10,333,000 acres; total acreage under crops in 1872, 165,247, viz: Wheat, 1,903; barley and bere, 163; oats, 3,418; pease and beans, 383; buckwheat, 51; maize, 100,364; other grains, 41,469; total cereals, 147,751; potatoes, 3,123; cotton, 1,420; sugar-cane, 6,702; tobacco, 129.

Cape of Good Hope: Population, 566,158; area, 128,390,000 acres; total acreage under crops in 1865, 460,754, viz: Wheat, 202,257; barley and bere, 34,569; oats, 99,609; rye, 24,330; pease and beans, 8,784; maize, 50,126; total cereals, 419,675; potatoes, 12,845; tobacco, 1,974; vineyards, 16,177.

LOUISIANA SUGAR PRODUCTION.—Mr. L. Bouchereau, in his Louisiana sugar report for 1874-'75, says that the planting season of 1874 was good and the ground unusually well prepared. The early part of the season was favorable to both seed-cane and stubble, but the disastrous floods of April destroyed 24,713 acres of cane, which, at the rate of 1,462 pounds of sugar per acre, (the average yield of the tracts uninjured,) would have added 31,766 hogsheads, equal to 35,329,312 pounds of sugar, besides 3,209,376 gallons of molasses. The next six months with the exception of the first half of July, were very dry, and the

grinding season found the planters with short supplies of water. The State election disturbed the labor market and delayed the grinding operations until in November, when dry freezing-weather destroyed the value of the cane standing. The quantity of seed-cane planted for 1875 was also quite small. The total loss from flood and frost is estimated at 50,000 hogsheads of sugar.

The "Robert Diffusion" process of sugar-manufacture has been subjected to scientific experiment, and has shown such satisfactory results that a large factory upon this principle has been started on the Louisa plantation in Saint Charles Parish. The company propose to purchase cane of the small planters at fair prices, and thus save them the outlay for machinery. This will bring into cultivation a large area of abandoned lands by men of limited capital, who will thus be enabled to concentrate their energies upon cultivation. The number of independent factories is expected to increase rapidly.

Among the reports of special culture is that of Mr. L. A. Bringier, of Ascension Parish, who from 236 acres of cane produced 482,000 pounds of first and second sugars and 28,348 gallons of molasses, an average of nearly 2,042 pounds of sugar and 120 gallons of molasses per acre. Of this area 19 acres that had been heavily covered with cow-peas for two years previous to planting, and turned under each year, averaged 4,014 pounds of sugar and 214 gallons of molasses per acre, or double the yield of the land not fertilized.

Mr. James Vigues, of Point Coupee, in 1872, fertilized two and a half acres of very poor land with bagasse at the rate of three or four tons per acre, the ground being plowed to a good depth and the manure harrowed in. Sound seed was planted and carefully covered with the hoe. The cane grew very large and yielded 1½ hogsheads of kettle-sugar per acre. In 1873 the stubble grew almost as large as the original plant, yielding 2½ hogsheads per acre. The yield of 1874 was 1½ hogsheads per acre, and the stubbles in 1875 are still very promising.

Mr. J. B. Sterling, of Point Coupee, after several years' experiment in planting the butts and the tops of the cane separately, has found in every instance that the tops produce a superior cane.

The crop of Louisiana sugar for each of the last ten years is stated as follows: 1865, 18,070 hogsheads; 1866, 41,000 hogsheads; 1867, 37,647 hogsheads; 1868, 84,256 hogsheads; 1869, 87,090 hogsheads; 1870, 144,881 hogsheads; 1871, 128,461 hogsheads; 1872, 108,520 hogsheads; 1873, 89,498 hogsheads; 1874, 116,867 hogsheads.

STOCK-FEEDING OR ARTIFICIAL MANURES.—Mr. Mechi, in a communication to the Mark Lane Express, gives reasons for his preference of stock-raising as the basis of a recuperative farming, using artificial manures merely as an auxiliary. A neglected, poor farm with shallow soil, after draining, should be constantly plowed by steam and covered with the best Peruvian guano and salt, about two hundred weight of each per acre, with, perhaps, a little nitrate of soda and phosphate of lime. This would give a good supply of root-crops and green crops for stock-feeding. These fed on the land with cake, to sheep and cattle under cover, would at once place the land in condition for grain-crops. On heavy land summer folding, and on light land both summer and winter folding, should be practiced. A crop of winter-tares following the steam-plow would keep down the weeds, and, if fed off in spring, would nicely prepare the ground for root-crops. An abundant supply of these being secured, should be fed to stock with grain and cake. The farmer is now measurably independent of artificial fertilizers which cost Mr. Mechi

ten shillings per acre for his whole farm. Their function is to quicken the exhausted forces of vegetation, but their influence is transient and not to be compared with home-manures in permanence. During the last ten years Mr. Mechi has consumed cake, corn, malt-culms, bran, hay, linseed, and Beach's condimental food at a cost averaging sixty-six shillings, or over $16 per acre in gold at market-prices, besides expense of veterinary and grinding, and yet his balance-sheets show large profits. He has but 6 acres in permanent pasture; 18 acres in clover to be mown for hay; 4 acres in winter-tares; 12 acres in Italian rye-grass; 6 acres in kohl-rabi and cabbage; 6 acres in mangel, and 6 acres in white turnips after pease. The first cutting of clover and pasture and part of the rye-grass is made into hay. Six horses consume a portion of the tares, the second growth of clover, and two acres of mangel, besides a considerable portion of the rye-grass, so that the actual area devoted to other farm-animals averages somewhat less than 25 acres. The manure produced by feeding the root-crops of these 25 acres to animals under cover, besides £577 per annum in purchased food, aided by the horse-manure, house-slops, &c., makes great crops from the whole farm of 175 acres. The small acreage in green and root crops is made to go a great way by the shelter afforded the animal, which greatly lessens the draught upon its vital energies and requires a smaller amount of food in order to be kept in good condition.

Our cheese interest.—The associated effort of American dairymen to elevate the character of their industry has met with marked success. This effort has been directed, first, to improvements in production, and, secondly, to increased facilities for marketing. The high quality of the product and its popularity in foreign markets shows the success of the first point in the enterprise. The marketing of American cheese has been reduced to a regular system. In New York, before the war, a dealer would contract for a season's manufacture upon terms which would allow him a specially wide margin. Payment for a spring's work was delayed till the following January. Subsequently buyers itinerated from factory to factory and made purchases in lots. The producers not being posted in regard to prices, mostly disposed of their product at a lower figure than they should have demanded, leaving a considerable margin for speculation on the part of the buyers. Subsequently regular market-days were appointed at accessible points where salesmen from the country congregated and made the best bargains they could in the absence of regular market-reports from New York, London, and Liverpool. In 1871 boards of trade were established at Utica and Little Falls, New York. Under the regulations established by these bodies the trade of Central New York is now carried on.

Little Falls, in Herkimer County, New York, is the oldest cheese market in the United States. Formerly cheese was brought in wagons on market-days, and the streets were crowded with wagons the contents of which were piled high upon the railway platforms. Buyers inspected each separate lot and bargained closely with the farmers. The factory system has changed all this. Samples of cheese are now exhibited by only a few "private dairies." Factory cheese is fully known on the market by the brand of each establishment. New York dealers now arrive on the market at 1 o'clock p. m. on market-days, and find the town filled with salesmen of different factories, and contracts are speedily closed. New factories whose brand is not yet familiar to market-men present small "plugs" of cheese carried in vials. Buyers' orders specify a particular brand, and frequently several orders for the same brand

gives it a special *prestige*. As the reputation of each brand is at stake under powerful competition, there is every motive present to secure a careful adherence to the standard. Each brand is guaranteed.

In Utica there is a more systematic arrangement, the summaries of the New York trade for the previous week being shown upon a large blackboard, and compared with the corresponding week of the previous year. These summaries include the receipts and exports of cheese, premiums on gold, and foreign exchange, ocean-freights, prices, &c. A salesman, at a glance, can gain an approximate idea of the course of trade. Where the exports are close upon the receipts, he reasonably expects a good inquiry for his cheese, while the movement of prices can be readily calculated by a business-man. No class of business-men are more shrewd than cheese-dealers and producers. Each salesman writes upon the board the factory he represents, and the number of boxes he has for sale, thus showing the entire quantity of cheese on the market. After contracts have been made the salesman immediately sends orders to the factory for the shipment of the cheese.

OLEOMARGARINE CHEESE.—The manufacture of oleomargarine cheese has provoked a very animated, if not acrimonious, discussion among dairy-men. Three or four years ago Mr. Henry O. Freeman was making butter and skim-milk cheese in Chenango County, N. Y. He made several experiments with different materials to supply the specific elements that had been removed from the milk in the form of cream. He first tried unmerchantable or inferior butter from the New York market, which he melted and purified of its disagreeable taste and odor. This was mixed with skimmed milk, and the mixture subjected to the cheese-making process. The product was not unpalatable, but differed from cream-cheese in being oily and soft instead of hard and tough. Mr. Freeman secured a patent for this process of making cheese from skim-milk.

The discovery of oleomargarine suggested to Mr. Freeman another material for enriching the depleted elements of skim-milk. This aroused a strong feeling among the regular cheese dealers, who denounced the new cheese as a filthy and noxious compound. Agricultural chemists, however, after a careful analysis, have shown that the oils combined in the oleomargarine are identical with those of butter, minus certain subtle odor-giving elements in the latter which chemical analysis has not yet been able to detect. In the manufacture of cheese, however, these fine cream-oils, which give to butter its peculiar flavor, are mostly dissipated, and hence cheese can be made of oleomargarine, of a composition so nearly identical with that of cream-cheese that no appreciable difference can be detected by analysis.

An American correspondent of the English Agricultural Gazette has subjected both kinds of cheese to the test of the microscope. Placing in focus a thin transparent scale of the material, he found that the cream-cheese was of an even, close structure, and the tiny round oil globules were held closely together in the curd. In the oleomargarine cheese the oil was observed in considerable masses in irregular cavities or "long slots." This method will easily detect the difference between the two kinds of cheese.

About a dozen factories have already been established in this country for the manufacture of oleomargarine cheese, and equipped in the best style. The men engaged in the business have a considerable capital, and evince a respectable share of energy and business tact. This method combines butter and cheese making. The new milk is first subjected to conditions which will abstract as large a proportion of cream as possible, which is used in making the finest grades of creamery butter. The skim-

milk is then placed in vats and heated to 92° Fahrenheit, when the oleomargarine, heated a few degrees higher, is poured in through a cloth strainer. The latter is brought in barrels, in which it appears to be an opaque, odorless fat with an oily taste, but no specific odor, but in heating, it assumes a clear, rich gold color, and at first floods the surface of the milk with a bright yellow coating. The mixture is then thoroughly agitated with large wooden paddles, and the rennet poured in. The agitation continues for about eight minutes, in order to drive the oil through the milk during the curdling process. The curd is allowed to stand ten minutes longer, when it is cut with a curd-knife and pressed in the usual way. The unappropriated oil then comes upon the surface of the whey, and is skimmed off. The process is quite similar to that of cream-cheese manufacture, the elements of the oleomargarine undergoing changes analogous to those of the cream, except that nature, in the udder of the cow, more perfectly performs the necessary emulsion of the oily materials of the milk than man can do by any mechanical process.

The manufacture of oleomargarine cheese is advocated on the ground that it utilizes a vast amount of otherwise waste material in the skim-milk. It does not propose to enter into competition with the finer grades of cream cheese. This class of products has an element of profit in itself which would render an attempt to invade its field entirely hopeless. But inferior brands, known to the trade as "half-skims" or "hard-skims," will probably be driven out of market by this process. There is no danger of any attempt to palm off oleomargarine cheese as cream cheese, as the means of detection are too numerous and too easily applied. Oleomargarine cheese has a function of its own, the supply of cheap food material, which does not attempt to grade with good brands of cream cheese. The severe denunciation which met the article upon its first introduction has measurably subsided. Organs of the cream-cheese interest demand that a careful distinction be made between the two kinds in every market, a necessity which will be less felt in proportion as the cream-cheese factories scrupulously adhere to the standards which have given them their specific reputation.

MEAT CONSUMPTION IN LONDON.—*Beef:* During 1874 there were imported for consumption into London 265,477 carcasses of cattle, weighing 75,580 tons, besides 293,000 live beeves, weighing 83,714 tons, which were slaughtered within the limits of London district. The total number of cattle required was, then, 558,477, weighing 159,564 tons, or 640 pounds per head. At 7*d.* per pound, the value of this beef was £10,424,848, or $52,224,240.

Sheep and lambs: Carcasses, 1,592,850, weighing 45,510 tons; live animals, 1,749,000, weighing 50,864 tons; total, 3,341,850 animals, weighing 93,374 tons, averaging 64 pounds per head; total value, £6,296,434 13*s.* 4*d.*, or $31,482,173.

Swine: Carcasses, 530,950, weighing 32,755 tons; live animals, 7,000, weighing 300 tons; total, 537,950, weighing 23,055 tons, and averaging 96 pounds per head; total value, £1,506,260, or $7,531,300.

Calves: Carcasses, 265,460, weighing 13,511 tons; live animals, 35,000, weighing 1,781 tons; total, 300,460, weighing 15,292 tons, and averaging 114 pounds per head; total value, £999,077 6*s.* 8*d.*, or $4,995,387.

Summary: Carcasses and live animals of all kinds, 4,738,737, weighing 294,285 tons; total value, £19,226,620, or $96,233,100.

BRITISH IMPORTS OF BREADSTUFFS.—The imports of grain, flour,

meal, &c., into the United Kingdom during the first eight months of 1874 and 1875, respectively, were as follows:

	Quantities.		Values.	
	1874.	1875.	1874.	1875.
	Cwt.	*Cwt.*		
Wheat from—				
Russia	2, 984, 460	5, 849, 644	£1, 848, 376	£2, 949, 519
Denmark	94, 822	147, 766	64, 552	76, 423
Germany	1, 828, 651	3, 363, 407	1, 330, 616	1, 840, 436
France	55, 475	492, 760	34, 595	258, 836
Austrian territories	1, 047	13, 286	810	6, 997
Turkey, Moldavia, and Wallachia	449, 118	515, 436	269, 380	243, 969
Egypt	267, 820	631, 699	157, 692	312, 120
United States	16, 158, 390	16, 217, 734	10, 510, 285	8, 413, 585
Chili	1, 380, 730	418, 736	887, 984	221, 983
British North America	2, 437, 248	1, 530, 642	1, 504, 709	814, 350
Other countries	1, 933, 572	912, 312	1, 284, 905	491, 643
Total of wheat	27, 591, 333	30, 093, 432	17, 893, 904	15, 629, 861
Barley	5, 472, 274	7, 189, 590	2, 704, 677	2, 975, 811
Oats	8, 026, 820	8, 863, 443	3, 613, 551	3, 899, 701
Pease	1, 129, 014	1, 101, 658	515, 109	508, 406
Beans	1, 507, 563	2, 163, 878	708, 540	984, 791
Maize	13, 860, 699	13, 366, 164	5, 891, 511	5, 502, 822
Total of grain	57, 587, 703	62, 978, 165	31, 103, 723	29, 501, 592
Flour and wheat-meal from—				
Germany	508, 204	475, 057	501, 043	380, 166
France	216, 983	1, 245, 916	234, 643	962, 157
United States	2, 539, 942	1, 536, 985	2, 321, 045	1, 150, 330
British North America	293, 511	171, 117	258, 965	121, 008
Other countries	913, 953	486, 656	932, 876	465, 480
Total of flour and wheat-meal	4, 472, 593	3, 915, 731	4, 248, 572	3, 079, 141
Indian-corn meal	5, 159	5, 691	8, 998	8, 065
Total value of imports			35, 361, 293	32, 588, 798

From the foregoing it appears that the wheat supply from Russia increased nearly 100 per cent. over the previous year in quantity, and 60 per cent. in value. Denmark increased 50 per cent. in quantity, and nearly 20 per cent. in value. Germany increased 84 per cent. in quantity, but less than 40 per cent. in value. France increased her small supply to nearly nine-fold in quantity, eight-fold in value. The Austrian territories increased their still smaller supply to thirteen-fold in quantity, and eight-fold in value. The Turkish Empire added 15 per cent. in quantity, but lost nearly 10 per cent. in aggregate value. Egypt more than doubled her quantity, and nearly doubled her value. The United States slightly exceeded her previous year's export, but lost 20 per cent. in value. Chili fell off over 70 per cent. in quantity, and 80 per cent. in value. British America lost 50 per cent. in both. Other countries lost nearly 60 per cent. in quantity, and over 70 per cent. in value. The entire wheat import increased 9 per cent. in quantity, but declined nearly 13 per cent. in value.

Of the other grains, total barley import increased 30 per cent. in quantity, and 10 per cent. in value; oats, 10 per cent. in quantity, and 8 per cent. in value; beans, nearly 45 per cent. in quantity, and 40 per cent. in value. The import of pease decreased 2 per cent. in quantity, and 1½ per cent. in value. The entire raw grain import increased over 9 per cent. in quantity, but declined 5 per cent. in value. Flour and wheat-meal fell off 12 per cent. in quantity, and nearly 25 per cent. in value. France alone increased her quota, raising it to six-fold in quantity, and four-fold in value. The United States declined 40 per cent. in quantity, and 50

per cent. in value. British North America shows a still greater reduction. Flour and wheat-meal lost 12 per cent. in quantity, and 27 per cent. in value. The trivial import of Indian-corn meal increased slightly in quantity, but fell off in value. The aggregate value of the breadstuff import declined nearly 8 per cent.

Of the wheat import of 1875, the United States furnished 53.8 per cent., against 58.6 per cent. the previous year. Russia raised her proportion from 10.8 per cent. in 1874 to 19.4 per cent. in 1875. The proportions of British North America for the two years, respectively, were 8.8 per cent. and 5 per cent.; of Germany, 6.6 per cent. and 11.2 per cent.; of Chili, 4.9 per cent. and 1½ per cent. The proportion of other countries was still smaller. Of wheat flour and meal, the United States furnished 56.9 per cent. in 1874 and 39.3 per cent. in 1875; France, 4.9 per cent. in 1874 and 31.5 per cent. in 1875; Germany, 11.4 per cent. in 1874 and 12.1 per cent. in 1875.

The approximate average import values per hundred-weight of wheat during the two years, respectively, were as follows: Russian, 12*s.* 5*d.* and 10*s.* 1*d.*; Danish, 12*s.* 7*d.* and 10*s.* 4*d.*; German, 14*s.* 6*d.* and 10*s.* 8½*d.*; French, 12*s.* 6*d.* and 10*s.* 6*d.*; Austrian, 15*s.* 6*d.* and 10*s.* 6½*d.*; Turkish, 11*s.* 10*d.* and 9*s.* 5½*d.*; Egypt, 11*s.* 9*d.* and 9*s.* 10½*d.*; United States, 13*s.* and 10*s.* 8½*d.*; Chilian, 12*s.* 10⅓*d.* and 10*s.* 7½*d.*; British North American, 12*s.* 4*d.* and 10*s.* 8½*d.*; other countries, 13*s.* 3½*d.* and 10*s.* 11¾*d.*; general average, 13*s.* 4½*d.* and 10*s.* 9*d.*; general average of barley, 9*s.* 10½*d.* and 8*s.* 3*d.*; oats, 8*s.* and 8*s.* 9½*d.*; pease, 9*s.* 1½*d.* and 10*s.*; beans, 9*s.* 4¾*d.* and 9*s.* 1¼*d.*; general average of all grains, 11*s.* 7½*d.* and 9*s.* 7*d.*; average of German flour and wheat-meal, 19*s.* 11*d.* and 16*s.*; French ditto, 21*s.* 1½*d.* and 15*s.* 5½*d.*; United States ditto, 18*s.* 3½*d.* and 14*s.* 11*d.*; British North American, 17*s.* 7½*d.* and 14*s.* 3*d.*; ditto, from other countries, 20*s.* 5*d.* and 19*s.* 4*d.*; general average of flour and wheat-meal, 19*s.* 5½*d.* and 15*s.* 8½*d.*; general average of Indian-corn meal, 34*s.* 7¾*d.* and 28*s.* 4*d.*

In 1874, the small import of Austrian wheat, which probably was of a very select character, brought the highest value, 15*s.* 6*d.* per hundred-weight, and Egyptian the lowest, 11*s.* 9*d.* per hundred-weight; in 1875, the highest value, 10*s.* 11¾*d*, was averaged by countries not enumerated, and the lowest, 9*s.* 5½*d.*, by the Turkish provinces. United States wheat was below average in both years. Of flour and wheat-meal the French import reached the highest value, 21*s.* 1½*d.* per hundred-weight, and British North American the lowest, 17*s.* 7½*d.*; in 1875 Germany received the maximum, 16*s.*, and British America the minimum, 14*s.* 3*d.* United States flour and wheat-meal was below the average of both years.

AGRICULTURAL STATISTICS OF ONTARIO.—The commissioner of agriculture of the province of Ontario, in his report for 1874, gives the following as the average yield of grain-crops per acre in that province during four years:

Crops.	1871.	1872.	1873.	1874.
Fall-wheat.....bushels..	27⅞	18	22	18½
Spring-wheat.....do....	17⅝	19	15½	16½
Oats.....do....	37½	33	39½	38⅜
Rye.....do....	19¾	17	19¼	17½
Barley.....do....	30	38	37½	30½
Pease.....do....	24½	21	26¼	24¼

These averages are made up from the returns of "electoral division societies," of which only 43 have made returns of a whole number of 81.

Thirty-four divisions also report in regard to potatoes; of these, ten average less than 100 bushels per acre; fifteen, from 100 to 150; six, 50; ten, 180, and one, 200.

Turnips, mangolds, and carrots were also represented, presenting a wide range of yield. The maximum of mangolds was 1,000 bushels; of carrots, 700; and of turnips, 600.

Contrary to expectation, the largest yields are not found in the more southern and sunny districts. A very great difference in yield is found to be due to differences in farming skill and experience. Many farmers of the province have taken up the business after having spent the earlier part of their lives in some other calling.

The report generalizes thus: "It is noteworthy that the higher and, consequently, drier portions of fields escaped injury more or less from spring frosts, while in the lower portions, where the soil was generally deeper and wetter, the crop was generally injured, and in not a few instances absolutely destroyed." These facts indicate the necessity of under-draining, in order to remove the surplus water from the soil.

OUR FOREIGN TRADE.—The report of the Bureau of Statistics of the Treasury for the fiscal year ending June 30, 1875, gives the following aggregates:

	1874.	1875.
Imports, free of duty	$179,936,668	$167,180,644
dutiable	415,924,580	386,527,509
Total	595,861,248	553,906,153
Exports, domestic	693,039,054	643,094,767
foreign	23,780,338	22,432,624
Total	716,819,392	665,527,391

Of the imports, $20,900,717 were in gold and silver coin and bullion, a decrease of $7,554,144, compared with the previous year. The imports of merchandise amounted to $533,005,436, a decrease of $34,400,943. Of the exports, $92,131,692 were in the precious metals, an increase of $25,501,287; the exports of merchandise amounted to $573,395,699, a decrease of $76,793,338. The total import trade has declined $41,955,095, and the total export trade $51,292,051. In 1875 the total exports exceeded the total imports by $111,621,238; in 1874 the excess was $120,958,194. Of the precious metals, the exports of 1875 exceeded the imports by $71,230,975; in 1874 the excess was $38,176,544. Of merchandise, the exports of 1875 exceeded the imports by $40,390,263; in 1874 the excess was $82,782,650. Of the imports of 1875, $13,083,968 were brought across the frontier in land-carriages, against $14,513,335 the previous year, or 2.36 per cent. in 1875 against 2.44 per cent. in 1874. American vessels brought in $157,872,626 against $176,027,778, or 28.5 per cent. in 1875 against 29.41 per cent. in 1874. The imports by foreign vessels in 1875 were $382,949,559, against $405,320,135, or 69.14 per cent. against 68.15. Of the exports and re-exports, $7,507,550 were transported across the frontier by land-carriage, against $8,509,205 in 1874, or 1.14 per cent. against 1.19 per cent.; American vessels took $156,153,444, against $174,424,216 in 1874, or 23.39 per cent. against 24.33 per cent.; foreign bottoms transported $501,866,397, against $533,885,971 in 1874, or 75.56 per cent. against 74.48 per cent. Both import and export trade, then, shows an increasing preponderance of foreign shipping.

Two-thirds of our imports for 1875, amounting to $363,637,580, were received at New York; Boston received $51,982,266, or nearly 9½ per cent.; San Francisco and Baltimore received about 5 per cent. each, the former $29,697,483 and the latter $27,778,992; Philadelphia, $24,236,387, or about 4½ per cent.; New Orleans, $12,356,487, or nearly 2½ per cent. Of the total exports, native and foreign, New York shipped $344,703,969, or 53 per cent.; New Orleans, $71,613,982, or nearly 11 per cent.; San Francisco, $31,838,343; Boston, $30,866,033; Savannah, $29,666,666; Philadelphia, $28,611,654; Baltimore, $27,615,822—between 4 and 5 per cent. each; Charleston, South Carolina, $19,655,966, or 3 per cent.; Texas, Texas, $16,225,907, or 2½ per cent.; Mobile, $10,132,188, or 1½ per cent.

The aggregates of imports and exports of leading foreign countries during the twelve months ending May 31, 1875, respectively, were as follows:—Brazil: imports, $42,033,046; exports, $7,372,443. China and Japan: imports, $21,252,742; exports, $538,002. France: imports, $63,342,631; exports, $50,753,911. Germany: imports, $40,893,386; exports, $53,762,305. British Islands: imports, $157,047,827; exports, $373,354,422. Canada: imports, $32,359,559; exports, $34,879,719. British North America: imports, $404,311; exports, $1,843,161. British West Indies: imports, $4,642,891; exports, $7,754,661. Cuba and Porto Rico: imports, $73,675,609; exports, $24,420,629. Other West Indies: imports, $4,134,780; exports, $2,848,109. East Indies: imports, $22,359,498; exports, $1,507,208. Mexico: imports, $11,634,983; exports, $5,781,783. Holland and Belgium: imports, $8,542,756; exports, $20,271,642. In the last enumerated aggregates the imports are stated in specie-values and the exports mostly in currency.

Of agricultural imports the value of living animals was $2,083,152 in 1875, against $2,627,502 in 1874; of breadstuffs, $10,388,013, against $11,947,689; of unmanufactured cotton, $408,808, against $704,784; of eggs, $600,344, against $747,866; of seeds, $319,696, against $175,799; of raw silk, $4,504,306, against $3,854,008; wood, unmanufactured, $1,895,363, against $2,262,441; of flax, unmanufactured, $1,092,405, against $902,038; of fruits and nuts, $12,537,568, against $8,281,418; of hemp, unmanufactured, $3,110,303, against $3,676,967; of jute, unmanufactured, $1,273,034, against $1,006,618; of potatoes, $166,981, against $331,370; of provisions, not including vegetables, $1,229,379, against $1,747,442; of leaf-tobacco, $3,724,534, against $5,537,651; of unmanufactured wool, $11,069,701, against $8,250,306.

Of agricultural domestic exports the value of living animals was $2,668,900 in 1875, against $3,310,388 in 1874; of bark for tanning, $193,938, against $160,670; of unmanufactured breadstuffs, $85,425,488, against $129,024,418; of unmanufactured cotton, $190,638,625, against $211,223,580; of fruits, $1,317,670, against $710,513; of ginseng, $658,926, against $448,760; of hay, $110,225, against $111,872; of unmanufactured hemp, $21,856, against $8,901; of hides and skins, other than fur, $4,729,725, against $2,560,382; of fur-skins, $4,396,424, against $3,334,365; of hops, $1,286,497, against $27,973; of bacon and hams, $28,611,930, against $33,383,908; of beef, $4,197,956, against $2,956,676; of butter, $1,506,764, against $1,092,381; of cheese, $13,659,561, against $11,898,995; of condensed milk, $123,565, against $79,018; of eggs, $8,743, against $5,239; of lard, $22,900,486, against $19,308,019; of pork, $5,671,495, against $5,808,712; of vegetables, $742,822, against $679,467; of rice, $19,806, against $27,075; of seeds, $1,291,015, against $738,914; of tallow, $5,692,203, against $8,135,320; of unmanufactured tobacco, $25,241,549, against $30,399,181; of wood and lumber

$14,740,194, against $17,353,721; of unmanufactured wool, $62,754, against $72,169.

CROPS IN MICHIGAN.—The following statements are condensed from a communication to the Department by Mr. J. P. Thompson, secretary of the Michigan State Pomological Society: Wheat-culture in Michigan is making progress. Preparation of soil, fertilization, and the quality of seed are receiving more attention. The crop of the past season proves, on thrashing, to be full average in quantity, and better than was anticipated in quality. In Mr. Thompson's place of residence, Cascade, and surrounding towns, the average yield reported by the thrashers is 20 bushels per acre, and the product of the county, Kent, is 800,000 bushels. Though corn was somewhat cut by frost, yet the crop is the largest and best ever produced in the State. The same is true of the crops of potatoes and buckwheat. An unusually large area of the former was planted, owing to the high price of potatoes at the time of planting; and of the latter, owing to fears of a failure in the wheat-crop. The potato-beetle has been easily kept at bay, and is receding before the combined power of "parasitic enemies and the vigorous application of Paris green. All root-crops have done well.

Our statistical correspondent in Mecosta states that 7 acres of Diehl wheat which escaped frost yielded 35 bushels per acre; 28 acres of Diehl and Treadwell, 37 bushels; 1 acre of Clawson, 41½ bushels; and a field of "white amber," 40 bushels. He adds: "Had it not been for the June frost, our average yield would have been enormous. All the yields mentioned are products of the natural soil, without fertilizers of any kind, and with just fair cultivation."

WHEAT-YIELDS IN WISCONSIN.—A correspondent in Outagamie County has ascertained from the thrashers that in that county the varieties of wheat have yielded at the rates stated: Deihl wheat, 34 bushels per acre; Fultz and "Russian wheat," (lately imported from Russia by a miller at the village of Neenah,) each, 33 bushels. The latter is a white wheat, said to be equal to the Fultz in standing the winter, and therefore thought to be preferable. The variety of spring-wheat producing the largest yield was the Canada Club—33 bushels per acre. Our correspondent states that, owing to the large yield of winter-wheat, a large acreage will be sown this fall.

AN UNKNOWN DISEASE AMONG HOGS.—A correspondent in Juniata County, Pennsylvania, states that a new and fatal disease is prevailing among hogs in that and the adjoining counties of Perry, Snyder, Dauphin, and Northumberland, and that it has already resulted in losses amounting to thousands of dollars. He describes its symptoms and effects as follows:

> Most of the animals affected live only a few days after the first noticeable attack. In some it commences with costiveness, and in others with diarrhea. The excrements are black and very offensive. From the first attack all breathe with great difficulty. Some refuse food altogether, while others seem to have their appetite scarcely diminished until, perhaps, a few hours before they die. The disease seems to be altogether in the lungs. Post-mortem examinations have proved that in some instances the lungs are entirely decayed or rotten, crumbling apart in whitish particles by a very slight touch; in others the lungs were found to be only a mass of slimy white matter, emitting an offensive smell. So far no remedy has been discovered either as a preventive or as a cure.

DISEASED CATTLE.—Our correspondent in Medina County, Ohio, reports that Mr. F B. Chamberlain bought August 13, at East Saint Louis stock-yards, 37 th ee-year-old Illinois steers. He shipped them by rail, via Toledo, to Elyria, Lorain County, and drove them thence, about

thirty miles, to his farm in the south part of Medina County. They soon began to sicken, and our correspondent has obtained from Mr. Chamberlain and forwarded the following statement of the disease and treatment.

Out of the 37, 30 were affected, and 15 died. The others are now doing well. Symptoms: The cattle look dull in the eyes, have hot horns, are weak in the hind parts, always want to lie down, try to get as near water as possible, their urine highly colored, their breath heavy, and they seem to be in great pain. Those that were worst had no movement of the bowels. If a movement could be effected when they were not too far gone, they got well. They were at times a little cross in temper. The medicine given was salts and ginger. It did good work.

PRODUCTS IN SOUTHERN TENNESSEE.—A correspondent in Marion County, which lies on the border of North Carolina, just west of Chattanooga, is authority for the following statement: A neighbor of his "cow-penned" one-fourth of an acre of mountain land for one year. He then planted it with Russet potatoes, and between the potato-hills planted corn. The returns were, 200 bushels of potatoes and 15 bushels of corn; that is at the rate of 800 bushels of potatoes and 60 bushels of corn to the acre.

The same correspondent sends to the Department a specimen of wild grass, together with its seed, which proves to be *Sorghum nutans*, very common on western prairies. He states: "It grows on very poor soil, from 6 to 8 feet high, and it makes very good hay, which cattle and horses eat with a relish. It is up earlier in the spring and withers later in the fall than almost any other of the native grasses."

RAMIE IN CALIFORNIA.—Experiments made by Dr. Drury in growing ramie the present season in Kern County have been quite successful. He had produced plants 7 to 10 feet in height, and in sufficient quantity to plant, as he intends, 40 acres the coming season. It is claimed that the hitherto-existing impracticability of separating the fiber from the stalk has now been overcome by the invention of a machine which does it effectually, and at the rate of 1,400 pounds of cleaned and dressed fiber per day.

MARKET-PRICES OF FARM-PRODUCTS, OCTOBER, 1875.

The following quotations represent the state of the market, as nearly as practicable, at the beginning of the month:

Articles.	Prices.
NEW YORK.	
Flour, superfine ..... per bbl.	$5 10 to $5 50
extra State ..... do...	5 75 to 6 60
extra to choice western, per barrel	5 75 to 9 00
common to fair southern extras ..... per bbl.	5 85 to 7 00
good to choice southern extras ..... per bbl.	7 05 to 9 00
Wheat, No. 1 spring ... per bush.	1 38 to 1 41
No. 2 spring ..... do...	1 24 to 1 31½
winter, red, western, per bushel	1 20 to 1 44
winter, amber, western, per bushel	1 20 to 1 44
winter, white, western, per bushel	1 32 to 1 65
Rye ..... per bush.	90 to — —
Barley ..... do...	1 50 to 1 55
Corn ..... do...	67½ to 73
Hay, first quality ..... per ton.	15 00 to 20 00
second quality ..... do...	14 00 to 15 00
Beef, mess ..... per bbl.	8 50 to 10 00
extra mess ..... do...	10 50 to 11 50
Pork, mess ..... do...	22 00 to 22 50
extra prime ..... do...	16 00 to 16 50
prime mess ..... do...	19 50 to 20 00
Lard ..... per lb.	12⅜ to 14
Butter, western ..... do...	19 to 34
State dairy ..... do...	25 to 37
Cheese, State factory ..... do...	10 to 13⅜
western factory .... do...	10 to 12½
Sugar, fair to prime refining, per pound	7⅛ to 8¼
Cotton, ordinary to good ordinary ..... per lb.	10¼ to 12
low middling to good middling ..... per lb.	12¾ to 15⅝
Tobacco, lugs ..... per lb.	7 to 10
low leaf to medium leaf ..... per lb.	10 to 14
Wool, American XXX and picklock ..... per lb.	50 to 54
American X and XX, per pound	43 to 48
American, combing, per lb.	55 to 65
pulled ..... do...	43 to 46
California spring clip, per pound	22 to 32
California fall clip.. per lb.	18 to 22
BOSTON.	
Flour, western superfine. per bbl.	4 50 to 5 00
common western spring extra, per lb.	5 50 to 6 00
red wheats, good to fancy northwestern .. per bbl.	6 00 to 9 25
white wheat, good to fancy western .. per bbl.	6 75 to 9 00
southern family ..... do...	7 50 to 9 00
Wheat ..... per bush.	1 05 to 1 60
Corn ..... do...	74 to 77
Oats ..... do...	42 to 56
Rye ..... do...	1 00 to — —
Barley ..... do...	1 10 to 1 35
Hay, eastern and northern, per ton	17 00 to 23 00
Beef, mess ..... per bbl.	10 00 to — —
extra mess ..... do...	12 00 to — —

Articles.	Prices.
BOSTON—Continued.	
Beef, family ..... per bbl.	$17 00 to $17 50
Pork, prime ..... do...	16 50 to 17 00
mess ..... do...	22 50 to 22 75
Lard ..... per lb.	14½ to 15
Butter, New York and Vermont, per pound	20 to 33
western ..... per lb.	18 to 34
New York and Vermont factory ..... per lb.	10½ to 13½
Cheese, western factory... per lb.	10 to 13½
Sugar, fair to good refining. do...	7⅞ to 8¼
Cotton, ordinary to good ordinary ..... per lb.	11 to 12½
low middling to good middling ..... per lb.	13 to 14¼
Wool, Ohio and Pennsylvania, per pound	44 to 49
Michigan ..... per lb.	42 to 43
other western ..... do...	40 to
pulled ..... do...	29 to 53
combing fleece ..... do...	37 to 60
California ..... do...	16 to 37
PHILADELPHIA.	
Flour, superfine ..... per bbl.	4 75 to 5 00
Pennsylvania extra to choice ..... per bbl.	5 00 to 7 00
western extra to choice, per barrel	6 12½ to 7 50
Wheat, red ..... per bush.	90 to 1 40
amber ..... do...	1 25 to 1 42
white ..... do...	1 40 to 1 60
Rye ..... do...	90 to 92
Barley ..... do...	— — to — —
Corn ..... do...	69 to 74
Oats ..... do...	39 to 55
Hay, prime baled ..... per ton.	23 00 to 25 00
baled, common to fair shipping ..... per ton.	20 00 to 22 00
Beef, western mess ..... per bbl.	7 00 to 9 00
extra mess ..... do...	8 00 to 9 00
Warthman's city family, per barrel	16 00 to — —
Pork, mess ..... per bbl.	22 00 to 22 50
prime mess ..... do...	20 00 to — —
prime ..... do...	16 50 to 17 00
Lard ..... per lb	13¾ to 17
Butter, choice Middle State. do...	28 to 33
choice western ..... do...	29 to 31
Cheese, New York factory, good to fancy ..... per lb	11 to 13½
Ohio factory, good to fancy per pound	10½ to 12½
Sugar, fair to good refining. do...	7¾ to 8⅛
Cotton, ordinary to good ordinary ..... per lb	11 to 13¼
low middling to good middling ..... per lb	13¼ to 14½
Wool, Ohio X and XX ..... do...	45 to 51
other western ..... do...	40 to 45
tub-washed ..... do...	42 to 58
pulled ..... do...	42 to 63
combing ..... do ..	46 to 48
BALTIMORE.	
Flour, superfine ..... per bbl	4 25 to 5 00
extra ..... do...	5 25 to 5 75
family and fancy .... do...	6 00 to 9 00

Market-prices of farm-products—Continued.

Articles.	Prices.		
BALTIMORE—Continued.			
Wheat, red ..... per bush.	$1 10	to	$1 40
amber ..... do...	1 45	to	1 55
white ..... do...	1 20	to	1 40
Rye ..... do...	80	to	85
Oats ..... do...	45	to	52
Corn ..... do...	63	to	80
Hay, Middle States ..... per ton.	20 00	to	27 00
Pork, mess ..... per bbl.	23 00	to	23 50
extra prime ..... do...	16 50	to	— —
Lard ..... per lb.	14¾	to	17
Butter, western ..... do...	19	to	30
eastern ..... do...	20	to	35
Cheese, western factory, good to choice ..... per lb.	11	to	13
castorn factory, good to choice ..... per lb.	12½	to	13½
Sugar, fair to good refining. do...	7¾	to	8¼
New Orleans, grocery grades ..... per lb.	—	to	—
Tobacco, lugs ..... do...	8½	to	11
common to medium leaf, per pound	10	to	14
Cotton, ordinary to good ordinary ..... per lb.	—	to	—
low middling to good middling ..... per lb.	12½	to	13½
CINCINNATI.			
Flour, superfine ..... per bbl	4 50	to	5 00
extra ..... do...	5 25	to	5 75
family and fancy ..... do...	6 25	to	8 25
Wheat, winter, red ..... per bush.	1 10	to	1 42
hill, (amber) ..... do...	— —	to	— —
white ..... do...	1 30	to	1 50
Rye ..... do...	60	to	80
Barley ..... do...	75	to	1 45
Corn ..... do...	60	to	65
Oats ..... do...	30	to	48
Hay, baled, No. 1 ..... per ton.	20 00	to	22 00
lower grades ..... do...	14 00	to	18 00
Beef, plate ..... per bbl.	— —	to	— —
Pork, mess ..... do ...	22 25	to	22 75
Lard ..... per lb.	13½	to	14¼
Butter, choice ..... do...	28	to	35
prime ..... do...	22	to	25
Cheese, prime to choice factory, per pound	12	to	13
Sugar, New Orleans, fair to good, per pound	—	to	—
prime to choice ..... per lb.	—	to	—
Tobacco, lugs ..... do...	7	to	9
leaf ..... do...	12	to	15
Cotton, ordinary to good ordinary ..... per lb.	10¾	to	11¾
low middling to good middling ..... per lb.	12⅜	to	13½
Wool, fleece-washed, common to fine ..... per lb.	38	to	43
tub-washed ..... do...	43	to	48
unwashed, clothing do...	31	to	32
unwashed, combing do...	34	to	38
pulled ..... do...	31	to	37
CHICAGO.			
Flour, choice white winter extras, per barrel	6 50	to	7 50
common to good white winter extras .. per bbl.	5 75	to	6 50
choice spring extras .. do...	5 50	to	6 00
patent spring ..... do...	6 75	to	8 50
spring superfines ..... do...	3 75	to	4 75
Wheat, No. 1 spring ... per bush.	1 16	to	— —
No. 2 spring ..... do...	1 11	to	1 13
No. 3 spring ..... do...	99	to	1 02
Corn, No. 2 ..... do...	55½	to	56
Rye, No. 2 ..... per bush.	72	to	—

Articles.	Prices.		
CHICAGO—Continued.			
Barley, No. 2 ..... per bush.	$1 02	to	$1 03
Oats, No. 2 ..... do...	34	to	37½
Hay, timothy ..... per ton.	— —	to	16 00
prairie ..... do...	10 50	to	12 00
Beef, mess ..... per bbl	9 00	to	— —
extra mess ..... do...	10 00	to	— —
Pork, mess ..... do...	22 75	to	— —
extra mess ..... do...	— —	to	— —
extra prime ..... do...	— —	to	— —
Lard ..... per lb.	13⅝	to	13⅞
Butter, choice to fancy ..... do...	26	to	31
medium to good .. do...	18	to	23
Cheese, good to fancy factory, do.	10	to	11⅛
Sugar, brown, common to choice, per pound	7⅞	to	9½
Wool, tub-washed ..... per lb.	40	to	53
fleece-washed ..... do...	40	to	43
unwashed ..... do...	26	to	33
pulled ..... do...	—	to	—
SAINT LOUIS.			
Flour, winter, common to choice, per bbl	4 00	to	7 50
spring ..... per bbl.	3 75	to	5 75
Wheat, white winter .. per bush.	1 30	to	1 60
red winter ..... do...	1 10	to	1 60
spring ..... do...	— —	to	— —
Corn ..... do...	52	to	67
Rye ..... do...	65	to	71
Barley ..... do...	1 00	to	1 32
Oats ..... do...	30	to	46
Hay, timothy ..... per ton	16 00	to	18 50
prairie ..... do...	7 00	to	9 50
Beef, mess ..... per bbl	14 00	to	15 00
Pork, mess ..... do...	22 50	to	23 25
Lard ..... per lb.	12	to	14
Butter, prime to choice dairy, per pound	27	to	28
country packed ... per lb.	20	to	23
Cheese, Ohio factory ..... do...	10	to	11½
N. Y. factory ..... do...	13	to	13½
Tobacco, lugs ..... do...	5½	to	6½
leaf ..... per lb.	7½	to	16
Wool, tub-washed ..... do...	44	to	56
fleece-washed ..... do...	35	to	38
unwashed ..... do...	27	to	37
Cotton, ordinary to good ordinary ..... per lb.	10½	to	11¼
low middling to good middling ..... per lb.	12	to	13⅛
NEW ORLEANS.			
Flour, superfine ..... per bbl.	4 50	to	— —
extra ..... do...	4 75	to	6 25
choice to fancy ..... do...	6 50	to	9 00
Corn ..... per bush	72	to	78
Oats ..... do...	40	to	52
Hay, choice ..... per ton	— —	to	24 00
prime ..... do...	21 50	to	— —
Beef, Texas ..... per bbl	10 00	to	10 50
western ..... do...	16 00	to	— —
Fulton market ... per ½ bbl	11 50	to	12 00
Pork, mess ..... per bbl	23 75	to	24 50
Lard ..... per lb.	14½	to	15½
Butter, choice Goshen ..... do...	35	to	—
choice western ..... do...	25	to	—
Cheese, choice western factory, per pound	10	to	10½
N. Y. cream ..... per lb.	14	to	16
Sugar, fair to fully fair ..... do...	8¾	to	9½
prime to choice ..... do...	9½	to	9¾
clarified, white, and yellow ..... per lb.	9⅞	to	10½
Tobacco, lugs ..... do...	7½	to	10
leaf ..... do...	11	to	20

Market-prices of farm-products—Continued.

Articles.	Prices.
NEW ORLEANS—Continued.	
Cotton, ordinary to good ordinary.....per lb.	— — to $0 11¾
low middling to good middling .....per lb.	$0 12½ to 13⅜
Wool, lake..... do...	— — to — —
SAN FRANCISCO.	
Flour, superfine .....per bbl.	5 00 to 5 25
extra.....do...	5 50 to 5 75
family and fancy ....do...	6 00 to 6 50
Wheat, California ....per cental.	1 75 to 2 10
Oregon.....do...	2 00 to 2 10
Barley .....do...	1 30 to 1 50
Oats .....do...	1 65 to 2 00

Articles.	Prices.
SAN FRANCISCO—Continued.	
Corn, white..... per cental.	$1 40 to $1 50
yellow .....do...	1 30 to 1 35
Hay, State .....per ton.	13 00 to 19 00
Beef, mess.....per bbl.	8 00 to 10 00
family mess.....per ½ bbl.	7 50 to 8 00
Pork, mess .....per bbl.	24 00 to 25 00
prime mess .....do..	16 50 to 17 50
Lard .....per lb.	15 to 16½
Butter, overland .....do..	20 to 27
California .....do..	30 to 47½
Oregon.....do..	20 to 25
Cheese.....do..	12½ to 15
Wool, native .....do..	10 to 15
California.....do..	15 to 25
Oregon .....do..	15 to 25

LIVE-STOCK MARKETS.

NEW YORK.	
Cattle, extra beeves..per cental.	$12 50 to $13 00
good to prime.....do....	12 25 to 12 50
common to fair .....do....	10 75 to 11 00
Texans.....per cental	8 50 to 11 00
milch-cows .....per head.	— — to — —
veal calves....per cental.	7 50 to 9 50
Sheep.....do....	5 25 to 7 25
Swine.....do....	8 62½ to 8 80
PHILADELPHIA.	
Cattle, prime beeves..per cental.	7 62½ to 8 00
fair to good .....do....	6 00 to 7 50
common .....do....	4 00 to 5 50
Sheep .....do....	4 50 to 6 00
Swine, corn-fed .....do....	12 00 to 14 00
BALTIMORE.	
Cattle, best beeves....per cental.	6 75 to 7 25
first quality.....do....	4 75 to 5 75
medium or good quality, per cental.....	3 75 to 4 75
ordinary .....per cental.	2 50 to 3 75
general average...do....	4 50 to — —
most of the sales ..do....	4 00 to 5 00
milch-cows ....per head.	— — to — —
Sheep.....per cental.	4 00 to 5 50
Swine.....do....	10 50 to 11 75
CINCINNATI.	
Cattle, good to prime butchers' steers .....per cental.	5 00 to 5 50
fair to medium....do....	3 75 to 4 75
common.....do....	2 25 to 3 25
milch-cows ....per head.	— — to — —
veal calves....per cental.	5 50 to 7 00
Sheep.....do....	2 50 to 4 75
Swine.....do....	6 00 to 8 00

CHICAGO.	
Cattle, extra-graded steers, 1,300 to 1,550 pounds, per cental.....	$6 20 to $6 40
choice beeves, 1,250 to 1,450 pounds, per cental.	5 20 to 6 00
good beeves, 1,150 to 1,350 pounds..... per cental.	4 80 to 5 25
medium, 1,100 to 1,250 pounds.....per cental.	4 15 to 4 65
inferior ....do....	1 75 to 3 75
Texans, through droves, per cental.....	2 50 to 3 75
Sheep .....per cental.	3 50 to 5 00
Swine.....do....	7 00 to 9 50
SAINT LOUIS.	
Cattle, good to choice native steers, per cental	5 75 to 6 25
common to fair natives, per cental.....	4 00 to 5 75
inferior and common, per cental.....	2 00 to 3 00
Texans, fair to choice, per cental.....	2 50 to 4 40
Sheep .....per cental.	2 85 to 4 25
Swine.....do....	6 00 to 8 00
Horses, plugs.....per head.	40 00 to 75 00
plain.....do....	80 00 to 110 00
street-car .....do....	75 00 to 125 00
heavy-draught ....do....	100 00 to — —
good drivers .....do....	150 00 to — —
extra .....do....	200 00 to — —
Mules, 14 to 15 hands high..do....	85 00 to 120 00
15 to 16 hands high..do....	120 00 to 180 00
extra ..... do....	175 00 to 200 00
NEW ORLEANS.	
Cattle, Texas beeves, choice, per head	40 00 to 46 00
first quality....per head.	30 00 to 35 00
second quality.....do....	20 00 to 25 00
western.....do....	— — to — —
milch-cows.....do....	35 00 to 100 00
Sheep..... .....do....	2 00 to 5 00
Swine.....do....	8 00 to 11 00

FOREIGN MARKETS.

WHEAT.—The late rains in England have placed the ground in fair condition for the plow, and so far is favorable to the next wheat crop. The unfavorable weather of July had caused an excessive importation of foreign wheat, causing considerable decline in prices. British farmers, however, show an indisposition to hurry their crops to market, while holders of foreign grain are equally reluctant to accept ruling prices. From these causes it was hoped, about the close of September, that the downward tendency of prices would be checked. The English provincial markets report a very slight activity, and a tendency to hold over for better prices. Hull, the leading point of import for northern European grain, is overstocked with foreign wheat, leaving a large amount on hand for which there is no demand, except for a few fine new Baltic sorts. The Scotch and Irish markets are equally inactive, the foreign arrivals being generally above the demand. French holders stoutly resist the downward sweep of prices. Paris yielded but 1 franc per 280 pounds of flour during the week ending September 25, and held fast to her wheat figures. The French provincial markets, however, were less tenacious; 14 markets advanced during the week, 73 remained firm, and 110 declined, yet the average rates were but slightly depreciated. Belgium markets were calm, the decline having been arrested. The same may be said of Holland. In Germany, Hamburg was firm, while other German markets showed an upward tendency. The previous reduction in prices had caused a falling off in supplies, farmers preferring to wait for better prices, especially as their crops were generally housed in fine condition for preservation. Dantzic, however, manifested some discouragement as to the future. At Adelaide, South Australia, up to July 15, the wheat export amounted to 105,000 tons, or about 3,500,000 bushels, with a reserve awaiting export of 78,000 tons, or 2,600,000 bushels; but the prospects of the growing crops were not remarkably good. It was thought that at least 30,000 tons, or 1,000,000 bushels, would be held over. A large part of the shipments were to new settlements in the Antarctic and South Pacific regions. In the middle of August, however, advices unfavorable to the growing crops of England stimulated inquiry for wheat and tended to enlarge the export.

In England, during the week ending September 25, the sales of domestic wheat amounted to 49,791 quarters, at 48*s.* 7*d.*, against 72,524 quarters, at 46*s.* 8*d.*, during the corresponding week of 1874. The London averages during the same week were 48*s.* 10*d.* on 1,620 quarters. The imports into the United Kingdom during the previous week amounted to 1,578,481 cwt. The deliveries of English wheat, then, show a decline of 30 per cent. compared with the same period of the previous year. The week opened in Mark Lane on moderate supplies of domestic, with good arrivals of American and Russian. Essex and Kent white wheat was quoted at 48*s.* to 55*s.* per quarter; ditto, red, 47*s.* to 50*s.*; Norfolk, Lincolnshire, and Yorkshire red, 41*s.* to 50*s.*; Dantzick mixed, 51*s.* to 55*s.*; Königsberg, 48*s.* to 53*s.*; Rostock, 46*s.* to 50*s.*; Silesian red, 45*s.* to 50*s.*; Pomeranian, Mecklenberg, and Uckermark red, 46*s.* to 48*s.*; Ghirka, 45*s.* to 46*s.*; Russian hard, 42*s.* to 44*s.*; Saxonska, 46*s.* to 49*s.*; Danish and Holstein red, 45*s.* to 48*s.*; American red, 44*s.* to 47*s.*; Chilian white, 49*s.*; Californian, 51*s.*; Australian, 50*s.* to 55*s.* In Paris prices ranged from 45*s.* to 49*s.*; in Brussels old native wheat brought 49*s.*; at Hamburg prices remained firm at 44*s.*, which was about the ruling rate at

Berlin, Cologne, Vienna, and St. Petersburg for wheat on the spot, though prices for future delivery at several points ranged higher. At Odessa prices were firm, but had given way at Pesth, in Hungary.

FLOUR.—The imports into the United Kingdom during the week closing September 18 amounted to 114,403 cwt. The following week in Mark Lane opened upon a good supply of British flour, but business was at a stand-still, and holders were disposed to recede from previous quotations. The flour movement was heavy and languid. In Mark Lane the best town households brought 43*s.* to 47*s.* per 280 pounds; best country households, 37*s.* to 40*s.*; Norfolk and Suffolk, 34*s.* to 36*s.*; American, 24*s.* to 29*s.* per barrel. At Liverpool, English and Irish superfines brought 37*s.* to 39*s.* per 280 pounds; ditto, extra, 40*s.* to 42*s.*; French, 40*s.* to 48*s.* 6*d.*; Trieste, 50*s.* to 62*s.*; Chilian, 36*s.* to 39*s.*; Californian, 40*s.* to 42*s.*; American, western and extra State, 25*s.* 6*d.* to 27*s.* 6*d.* per barrel; Baltimore and Philadelphia, 25*s.* to 30*s.* 6*d.*; Ohio and extra, 28*s.* to 30*s.* 6*d.*; Canadian and extra, 26*s.* 6*d.* to 31*s.* At Paris, the range for consumption was 35*s.* 11*d.* to 39*s.* 2*d.* per 280 pounds.

MAIZE.—British imports of maize during September were quite unimportant. No advance upon previous low prices was noted. In Mark Lane white was quoted at 80*s.* to 32*s.* per quarter, and yellow at 29*s.* to 31*s.* In Liverpool, American brought 29*s.* 3*d.* per 480 pounds for mixed; Galatz, 31*s.* to 36*s.*; Trieste, 29*s.* to 29*s.* 3*d.*

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33, 6 van, 36, 30, 32, 37, 24, 22, 26, 21,
17, 18, 19, 16, 15 van; 12,
9, 10 van. 1 van. 1 van. 7. 1 van, 8, 6 van.

MONTHLY REPORT

OF THE

DEPARTMENT OF AGRICULTURE

FOR

NOVEMBER AND DECEMBER, 1875.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1875.

CONTENTS.

MONTHLY REPORT.

DEPARTMENT OF AGRICULTURE,
STATISTICAL DIVISION,
Washington, D. C., Dec. 1, 1875.

SIR: I present herewith for publication a synopsis of the returns of statistical correspondents for November, showing the production of corn, cotton, potatoes, tobacco, and other crops, in comparison with the products of 1874; and domestic and foreign market-reports and minor statistics.

Respectfully,

J. R. DODGE,
Statistician.

Hon. FRED'K WATTS,
Commissioner.

DIGEST OF CROP REPORTS.

CORN.

Our November returns show the estimated corn yield of 1875 in percentages of the crop of 1874. The final estimate of the Department, however, is not made till after the reception of the December returns embracing the average yield per acre. The acreage having been given in previous reports, we shall then have the data for an independent estimate, which, by comparison with the aggregate yield reported in November, enables us to reach a common result by separate lines of inquiry. With this explanation the November returns are accepted as foreshadowing very nearly the final results. They indicate that the crop of 1875 was one of the largest ever grown in the country, probably equaling the very large crops of 1870 and 1872. It is at least a fourth greater than the crop of 1874, and about a third larger than the crop of 1869 reported in the last census.

Every section of the Union reports some increase. The New England States appear to have made a small increase; the Middle States about 10 per cent.; the South Atlantic Coast States a small advance, and the Gulf States about 17 per cent.; the Southern Inland States over 50 per cent.; of the States north of the Ohio, Illinois has made an enormous increase upon the small crop of last year, and the States west of the Mississippi nearly 60 per cent., or more than 100,000,000 bushels.

The quality of the crop is below that of 1874 in most of the States. In New England, only New Hampshire equals her previous crop in

this respect. It is remarkable that none of our reports from this State contain any complaints of injury from frost, while all the other States of this section will have a large proportion of soft corn, either from frost or imperfect ripening. Of the Middle States, New York and Pennsylvania report poor quality, while New Jersey and Delaware have sounder corn than in 1874. In Maryland and Virginia the quality of the crop is above average, in spite of local injuries; but in the other Atlantic Coast States the quantity is deficient. Complaints of rotten or chaffy corn are frequent in this region, while on the other hand the crop is regarded in many places as the best for many years. Of the Gulf States and Southern inland States, Florida and West Virginia report the average quality low, while all the others report crops of better quality than last year. The improvement in Arkansas is especially marked, being estimated at over 50 per cent. Local injuries from storms depressed the general average below what it would otherwise have been. Of the States north of the Ohio, only Illinois reports a crop equal to last year's in quality. The more northern counties report the greatest depression, which resulted from heavy frosts or cold, wet, autumnal weather. Floods and storms were especially destructive to crops in the larger valleys, but the injury from this source was greatly exaggerated in the first reports of the newspaper press. Rotten and chaffy corn will be in excess. The same causes injured the quality of the crop in Minnesota and Iowa, while in Missouri, Kansas, and Nebraska, the improvement in the quality of the crop keeps pace with its astonishing increase of yield. Early-planted crops were especially prolific and good. Local prices have been greatly depressed by large yields. On the Pacific coast the quality of the crop is nearly equal to last year.

MAINE.—*Sagadahoc:* Injured to some extent by early frosts. *Cumberland:* Injured by early frost.

NEW HAMPSHIRE.—*Rockingham:* The crop large, ripe, and sound throughout the county.

VERMONT.—*Rutland:* Did not ripen perfectly. *Lamoille:* Prevented from fully ripening by a heavy frost September 22.

MASSACHUSETTS.—*Berkshire:* Much soft corn.

CONNECTICUT.—*New London:* A little injured by frosts.

NEW YORK.—*Delaware:* A heavy frost June 14, and another September 23, made a short corn season. *Queens:* Very sound, and turns out, on being husked, much better than last year. *Washington:* The crop injured materially by a large white grub. *Steuben:* Affected by frost. *Warren:* A heavy growth of stalks, but not so well eared as usual, in proportion, and more soft corn. *Genesee:* Not well ripened when the frost came. Early planted was not much injured, but fields planted late are of little value. One acre of the best is of as much value as ten of the poorest. *Saratoga:* Injured by early frosts; very early planted fine. *Wayne:* Badly injured by the cold season. *Wyoming:* Injured some by frost. *Ontario:* Much soft. *Sullivan:* Much soft.

NEW JERSEY.—*Ocean:* The lightest crop harvested for many years, owing to extremely dry weather during the whole growing season. *Burlington:* Seldom favored with such a large crop. *Hudson:* The ears not so large or well filled as usual. *Salem:* Exceedingly good; 25 per cent. above average.

PENNSYLVANIA.—*Clearfield:* Frosts in June, drenching rains in July and August, and early frosts in September have injured the crop materially—more in quality than quantity, the great bulk being soft. *Clinton:* Late fields did not mature before the frost. *Perry:* The largest crop ever produced, and of good quality. *Elk:* Killing frosts in September injured almost all the crop; some fields not producing one sound ear in a bushel, and scarcely any ripening well. *Montgomery:* A full crop of very good quality. *Westmoreland:* A much larger portion of the crop than usual immature. *York:* The largest yield within a farmer's lifetime. *Armstrong:* Good on the hills, but the valleys frost-bitten; one-half soft. *Chester:* The largest yield for years, but more moldy corn than usual. *Cambria:* A great amount of soft corn, owing to late planting and early frost. *Sullivan:* One-fourth or more has not ripened. *Bedford:* Good crop in stalk and ear, but much of it not matured when frost came; 60 per cent. of late corn soft. *Beaver:* A great amount of soft corn. *Indiana:* More soft corn than was ex-

pected. *Lancaster:* An immense crop; nearly all husked. *Lawrence:* An immense quantity of soft corn; killed by frost before ripe. *Erie:* A good crop, but owing to wet and cold weather in October not seasoned well for husking and the crib. *Lycoming:* A little thin on the ground, but well cared. *Montour:* Being secured in good condition; not as much soft as was anticipated. *Potter:* What escaped spring frost was injured by the cold before ripening; some estimate their yield as low as 10 per cent. *Tioga:* Of inferior quality.

MARYLAND.—*Carroll:* Will average 50 bushels per acre. *Dorchester:* An immense yield of extra fine quality. *Harford:* The best crop for years. *Howard:* A large crop, but a little more soft corn than usual. *Caroline:* Not turning out as well as anticipated before harvesting. *Prince George:* Larger crop than last year, but more rotten corn than usual. *Baltimore:* The finest crop for many years; the fodder carefully saved. *Calvert:* Above average in quantity, but inferior in quality. *Cecil:* Never better.

VIRGINIA.—*Carroll:* A greater quantity of soft corn than I ever saw in any year before, owing to early freezes; but the yield of good corn is far beyond any previous year. *Fluvanna:* Better than an average crop by one-fourth. *Powhatan:* Now being gathered, and fully up to the standard of 150 in the October report. *Spottsylvania:* Now being harvested; sound and fully 25 per cent. above last year. *Craig:* The largest crop for years, but one-third injured by frost. *Floyd:* The quality injured 10 per cent. by frost. *King George:* A fine crop of excellent quality. *Matthews:* Farmers much disappointed in the yield; a larger bulk than usual, but poorly filled and a large quantity unsound. *Page:* Most of the crops are splendid, but the frost nipped some of the late corn, reducing the quality about 5 per cent. *Prince William:* The replanted corn generally did not mature. *Elizabeth City:* Much the largest and best crop since 1869; at least 25 per cent. increase in acreage, more than double the average yield, and superior excellence in quality, fully warrant the estimate of 250. *Orange:* The area exceeds that of last year 25 per cent., and the quality was never better. *Amelia:* The excellent season of August and September has given a large crop. *Henrico:* Unusually good. *King and Queen:* A decided improvement on any crop for six years. *Middlesex:* Turning out well. *Wythe:* The quality very fine. *Chesterfield:* The largest yield since 1860 and the quality very good. *Halifax:* Yield and quality excellent. *Highland:* Much of it soft when frost came. *Lancaster:* By far the best crop since the war. *Washington:* Not cured so as to crib. *Westmoreland:* Better than usual.

NORTH CAROLINA.—*Forsythe:* A very large crop, but late and not well filled. *Iredell:* Better than was expected. *Nash:* Better than for years. *Hertford:* The best in ten years. *Beaufort:* Unusual crop; of good quality. *Wilson:* Inferior to last year's crop, much being rotten. *Person:* Very fine on upland; damaged by rain on flat-land, yet largely above average.

SOUTH CAROLINA.—*Fairfield:* Saved in good order and turns out well. *Marlborough:* Large crop, but much complaint of rotten ears. *Orangeburgh:* As much made as last year, beause more planted, but the yield is only 80.

GEORGIA.—*Berrien:* Yielded better than was expected. *Harris:* The drought did not injure corn as much as cotton. *Gwinnett:* The crop very spotted, varying from full average to less than half. *Worth:* Light; not enough to bread the people. *Clayton:* Better than since the war. *Floyd:* An unusual amount of rotten corn; not less than 12 to 15 per cent. *Upton:* Turning out better than other crops. *Dooly:* Yields better than expected. *McIntosh:* Cut off one-half by the late drought. *Wilkinson:* Very large crop planted; enough made to do the county. *Wilcox:* Chaffy and considerably rotten. *Hancock:* Very good. *Towns:* The best crop for several years.

FLORIDA.—*Putnam:* The acreage somewhat larger, but the crop short from drought.

ALABAMA.—*Clarke:* Cut short by drought. *Greene:* Has exceeded expectations in quantity and quality; is plenty and cheap—40 to 50 cents per bushel. *Montgomery:* Better than for several years. *Lauderdale:* Never better. The yield of one acre, attested by good authority, measured 220 bushels, and received a premium at the State Grange fair; the largest yield known in our State. *Morgan:* Will crib double the corn we did in 1874, and of much better quality. *Covington:* A bountiful crop, owing to a large increase in acreage. *Colbert:* The largest crop we ever had, and of the finest quality. *Conecuh:* Turning out better than expected in quantity and quality.

MISSISSIPPI.—*Grenada:* The increased acreage makes the amount fully equal to last year's. *Pike:* Turns out fine, and quality good. *Newton:* More rotten than last year, but that not rotten of better quality. *Wayne:* A very satisfactory crop nearly gathered. *Lowndes:* An abundant supply housed, and a surplus in many places. *Jefferson:* A good crop, all housed; enough, I think, for home consumption.

LOUISIANA.—*Saint Mary:* The crop so abundant that no one will have to buy from the West. *Iberia:* The crop largely better than any since the war. *Morehouse:* The reduced quality due to storms which blew down the stalk and left the ear to rot on wet ground. *Franklin:* Large percentage of rotten corn, caused by winds and rains. *Saint Landry's:* A good yield; all housed.

TEXAS.—*Dallas:* All harvested; yields from 30 to 50 bushels per acre. *Red River:* Abundant crop; price 50 cents. *Upshur:* Small crop, damaged by smut; much of it not fit for bread. The county will need 5,000 bushels imported. *Collin:* Harvested better than expected. *Harrison:* A shade better than last year. *Bosque:* Great complaint of smut. *Titus:* Far short of the crop of 1874.

ARKANSAS.—*Arkansas:* The best yield for many years, and mostly gathered in good order. *Boone:* The best crop I ever saw. *Prairie:* The most bountiful crop we ever had. *Fulton:* So much superior to last year's crop that I was tempted to put it at 500. The heavy crop yet generally ungathered. General sickness for the past two months has caused farming operations to be almost entirely suspended. *Marion:* Made; almost universally an astonishing yield. *Bradley:* Harvested, and enough for home-consumption. *Woodruff:* Better than last year, 25 per cent. *Franklin:* Good in yield and quality.

TENNESSEE.—*Monroe:* Best crop for many years. *Bradley:* More abundant than ever before. *Lincoln:* Will be more than double last year's crop. *Gibson:* Unprecedented in area, yield, and quality. *Greene:* Late, and much not fully matured. *Loudon:* Turning out very well. *Polk:* Not as good as supposed before gathering. *Putnam:* Abundant crop. *Cheatham:* The crop twice as large as last year, and the quality much better. *Rutherford:* Increased acreage and vastly increased product, and of excellent quality. *Wilson:* The largest crop for years. *Robertson:* Very fine in product and quality. *Sullivan:* Where properly manured and carefully cultivated, the crop is very heavy. *Tipton:* The crop unprecedented. *Bledsoe:* A good crop; the ears sound and well filled. *Giles:* By far the best crop since 1861.

WEST VIRGINIA.—*Raleigh:* Turned out very well, but the quality not so good. *Putnam:* Better than expected. *Ritchie:* Unusually late, and more soft corn than average. *Summers:* Not well matured; considerable soft corn. *Braxton:* Very good both in yield and quality. *Brooke:* So large a portion was immature when the frost killed the stock that the quality is much inferior. *Upshur:* Made a wonderful improvement in the last month; cured out beyond expectation. *Jefferson:* Ripened well. *Mercer:* Frost prevented the late-planted from maturing. *Boone:* Has dried out well; late corn quite chaffy. *Mason:* Late in maturing and injured to some extent by frost.

KENTUCKY.—*Lewis:* Never before so good or the product so great. *Cumberland:* Not a large yield per acre, but of superior quality. *Ohio:* Very well matured. *Calloway:* Very fine. *Owsley:* Not more than half a crop. *Graves:* Never better. *Hardin:* Not turning out as well as expected. *Boyle:* Not well matured.

OHIO.—*Hocking:* Very fine yield, but some injured by early frost. *Pickaway:* Loose on the cob and inclined to be chaffy. *Preble:* Acreage greater than ever before, but poor yield and quality; injured by frosts. *Ross:* Chaffy; affected by early frosts. *Logan:* The product and quality considerably reduced by early frosts. *Warren:* Being gathered in fine order. *Coshocton:* Unusually good, but the frost came a little too early. *Sandusky:* A great deal of soft corn. *Van Wert:* Owing to early frost one-half soft and the other half rather poor. *Geauga:* Rather light. *Butler:* Poorer in yield and quality than expected. *Clarke:* Heavy, and being secured in good order. *Licking:* A great deal of soft corn in the level portions. *Medina:* Greatly exceeds the yield of last year, but poor in quality. *Mercer:* Very poor; not well matured. *Monroe:* At least 10 per cent. will be soft and unfit for market. *Noble:* Injured by frost. *Perry:* Large crop, but considerable soft, owing to frost. *Carroll:* Damaged by frosts. *Crawford:* Injured by frosts. *Delaware:* Increased acreage and greatly increased yield. *Holmes:* Large crop, but a considerable quantity overtaken by frost and not sound. *Athens:* Destroyed by floods on low-lands; a large crop on uplands, but much frosted. *Harrison:* Large yield, but not well matured. *Trumbull:* Much injured by frost; a great deal of soft.

MICHIGAN.—*Kalamazoo:* Considerable soft corn unfit for market, owing to early and severe frosts. *Wexford:* Almost entirely ruined by frost. One per cent. of a crop looks small, but it is fully as much as there is of sound corn. *Allegan:* Did not ripen, owing to early frosts. *Grand Traverse:* Injured by frost, back from the water. *Lapeer:* A good yield, but some soft corn owing to frost. *Ottawa:* The ripening stopped by frost while much was green. *Emmet:* Scarcely any matured. *Tuscola:* Serious injury by frost. *Van Buren:* Large amount of soft. *Washtenaw:* Much soft. *Lenawee:* Unusual growth and the best eared ever known, but injured by frost. *Barry:* A heavy crop but a great deal of soft, and nothing to feed it to. *Hillsdale:* Twenty per cent. soft, and not hogs enough to eat it. *Jackson:* Much larger amount of soft corn than usual; much the largest crop we ever had, but a small proportion sound. *Lake:* Badly damaged by frost. *Livingston:* Badly injured by frost. *Mason:* Almost an entire failure from frost. *Mecasta:* Cut off by early frost. *Muskegon:* Injured by frost. *Shiawassee:* Somewhat injured by early frosts. *Antrim:* Late planted not well ripened. *Charlevoix:* Injured by frosts. *Leelenaw:* Did not ripen well. *Newaygo:* Not more than 25 per cent. available for any purpose except immediate feeding. *Montcalm:* Nearly one-third soft, owing to frost. *Oakland:* A great deal soft, owing to frost. *Kent:* A heavy crop; badly injured by frost; 25 per cent. soft.

INDIANA.—*Grant:* Half a crop. *Madison:* Not more than half a crop, and that not of good quality; frost. *Posey:* The great flood swept away fully half the crop; the quality is good. *Decatur:* The rains caused the thin uplands to produce astonishingly, making up for the losses by high water. *Union:* Damaged by frost. *Ripley:* Loose on the cob. *Dearborn:* Lighter and more chaffy than last year. *Martin:* Much of it light and chaffy. *Wabash:* Poor; a cold, wet August and early frost will reduce the value of corn 50 per cent. *Warren:* Frosts injured the late planted; upland will yield 50 bushels per acre. *Wells:* Light and chaffy. *Hamilton:* A very large per cent. injured by frost. *Jasper:* All late corn unfit for market; damaged by frost. *Marshall:* Planted late and injured by early frosts; none yet fit to crib. *Warwick:* A great deal on bottoms entirely ruined. *Lawrence:* That left by the flood ripened well and is very sound. *Pike:* An average crop except on flat and bottom lands overflowed, on which 50,000 to 100,000 bushels were destroyed.

ILLINOIS.—*Henderson:* Late will be very light. *Fulton:* Large yield, but light and chaffy. *Lake:* The early frost destroyed the hope of a large yield of sound corn. *Woodford:* A very heavy crop. *Clinton:* Have not had as good a crop in the uplands for ten years. *Mercer:* Damaged by frost. *Pike:* Good and well matured. *Shelby:* All on high land well matured and yields 40 to 65 bushels; on low land, nipped by frost. *Grundy:* Yet unfit to crib. *Johnson:* Main crop in good condition, but late-planted injured by frost. *Lee:* Much soft. *Macoupin:* On upland, much better than usual; on lowland, injured by frost. *Vermilion:* Injured by frost. *Carroll:* Much soft. *De Kalb:* Did not ripen sufficiently to make good merchantable corn. *De Witt:* From 50 to 75 per cent. soft, and will not make good merchantable corn. *Iroquois:* The yield will be large, notwithstanding many pieces on flat land were destroyed; very little yet dry enough for cribbing. *Knox:* Damaged by frost; a wonderful quantity of soft corn. *Mason:* Late corn suffered from frost, but still the crop is very large and of good quality. *Ogle:* Badly injured by frost. Some farmers will not have half a crop in yield or quality. *Winnebago:* Not more than half a crop either year. *Franklin:* On all high land, never better in yield and quality; on low, flat land, a failure. *Montgomery:* Notwithstanding the amount drowned out, the crop is abundant, and is selling, delivered, at 25 cents. *Saint Clair:* Notwithstanding the losses by the heavy floods, we have an extraordinarily fine and well-matured crop; 60 to 80 bushels per acre on good corn-land. *Effingham:* As good a yield as last year, and better in quality, but hardly half a crop. *Henry:* Very large in quantity, but materially injured by frost. *Boone:* A considerable amount of poor, soft corn. *Jefferson:* Superior in quality on high lands. *Fayette:* On high lands, turns out well; of the best quality, and a fine fall for gathering it. *Peoria:* Lighter in weight than was anticipated. *Morgan:* Comes out much better than was anticipated.

WISCONSIN.—*Eau Clair:* The light crop owing to frost, August 22. *Juneau:* So badly frost-bitten and unripe, that very little will do for seed. *Rock:* Did not mature well; yield light, and quality very poor. *Chippewa:* Ruined by frost in August; some pieces of early corn produced part of a crop. *Clark:* Almost entirely destroyed by the frost in August. *Dodge:* Nearly all killed by frost in August. *Walworth:* In the northern part, on all low ground an entire failure; all light and of poor quality. *Richland:* Too green and soft to crib. *Washington:* One-half is soft. *Iowa:* Killed on low ground by early frost.

MINNESOTA.—*Redwood:* The best yield ever grown. *Winona:* Late in maturing, and too soft for market. *Fillmore:* Poor crop, owing to frost and wet, cold autumn. *Wright:* Injured by frost. *Isanti:* A very large percentage is soft, owing to the severe frost August 22. *Goodhue:* Very little ripened. *Jackson:* The season too cool to secure a good crop. *Mille Lacs:* Injured by frost in August. *Rock:* Caught by frost in most places.

IOWA.—*Black Hawk:* A fine crop, but the quality very inferior owing to frost. *Story:* Frost-bitten and loose on the cob. *Johnson:* Damaged by frost. *Mitchell:* A very slim crop. *Pocahontas:* Not turning out as well as expected. *Guthrie:* Not as good as expected before husking. *Franklin:* Killed before ripe; loose on the cob. *Hardin:* The more the crop is handled the poorer it is found to be. *Marion:* More unmerchantable corn than usual. *Clinton:* The season too short and cold for the crop to mature; a large per cent. unfit for market. *Des Moines:* Taking yield and quality together, not half a crop; more soft corn than for the past five years, owing to frost. *Fremont:* Late corn very much damaged; otherwise we should have had an enormous crop; some make 125 bushels per acre. *Greene:* Did not fill out as was expected. *Harrison:* Slow in drying; but little gathered. *Howard:* Very little sound corn. *Jasper:* Frost came before maturity; scarcely an ear can be found not loose on the cob. *Polk:* Will not do to crib for a month to come. *Pottawattamie:* Price, 25 cents per bushel. *Woodbury:* Prevented from maturing by continued rains. *Calhoun:* Not yielding as well, and not as sound, as was anticipated. *Grundy:* Soft and much shrunken. *Linn:* Not as good as was anticipated; much loose on the cob. *Madison:* Not yielding as expected; light and chaffy. *Emmett:* A poor crop. *Shelby:* Twenty per cent. will be

soft. *Washington:* Late-planted, light and loose on the cob; injured by floods on flat lands; but early-planted on dry land, never better.

MISSOURI.—*Chariton:* The largest crop ever raised, and of excellent quality; many will gather 75 to 80 bushels per acre. *Greene:* The best crop in ten years. *Camden:* Late corn materially damaged by frosts, but the best crop for four years. *Nodaway:* This year and last, 50 per cent. of a crop. *Moniteau:* Extraordinary in yield and quality. *Benton:* Magnificent. *Christian:* An abundant yield. *Saint Clair:* Ten to one of last year, and very good quality. *Saint Francis:* Considerably injured by frost. *Johnson:* That planted in June and July killed by frost. *Perry:* Compared with last year, 150, but about an average crop. *Phelps:* Very much more abundant than last year, and better quality. *Morgan:* The largest crop ever raised, and very sound. *Newton:* Unusually large yield. *Lawrence:* Better than for the last ten years. *De Kalb:* The early planted not injured by grasshoppers, heavy; replanted, fair. *Holt:* Of the first stand, which is one-half the entire crop, the yield is enormous, being from 80 to 100 bushels and higher. *Howard:* The best for thirty-five years. *Dent:* Late, injured by frost. *Maries:* Now in fine condition for gathering. *Cape Girardeau:* Good in yield and quality. *Laclede:* Good, notwithstanding the floods destroyed much on the river-bottoms.

KANSAS.—*Jackson:* The very favorable fall for corn planted after the locusts had left, accounts for the high percentage; selling on the streets by wagon-load for 20 to 25 cents per bushel. *Marshall:* Some fields yield over 100 bushels per acre. *Miami:* An extraordinary breadth, and the season just right; ears 12 inches long, well filled with the most solid grains, quite common. *Mitchell:* Stalks 17 feet high, with two or three good ears. *Doniphan:* Planted about the first of July, it makes a remarkably good showing. *Smith:* Will yield about 50 bushels per acre; the best filled of any crop ever raised. *Cherokee:* The quality very superior. *Cowley:* The product at least 500 per cent. greater than last year, grasshoppers not considered; will produce 1,250,000 bushels. *Butler:* Much better than ever raised before; will average more than 50 bushels per acre, and in some instances will yield 100. *Clay:* Will yield 50 bushels per acre; price 15 cents at the depot. *Labette:* The yield enormously above anything we ever had before. *Osage:* Immense crop; much now in the crib, averaging 85 to 100 bushels per acre, and the general average 50 bushels, of superlative quality. *Atchison:* That planted before June 20, fully matured; that later, frosted. *Leavenworth:* More than average in quantity, but a part soft. *Shawnee:* Will average about 60 bushels per acre.

NEBRASKA.—*Dixon:* The best crop ever raised. *Lancaster:* So much that farmers hardly know what to do with it. *Webster:* Last year none; this 60 to 100 bushels per acre, and the quality extra. *Antelope:* Will average 30 bushels per acre; 10 per cent. soft. *York:* None last year; 20 per cent. above an average crop this. *Cass:* A large amount being planted after the grasshoppers left, about the 20th of June, will consequently be very light. *Thayer:* None last year; 125 in yield and quality this. *Clay:* An entire failure last year; this, runs from 20 to 60 bushels per acre, and averages 40; all sound; sells at 20 cents. *Nuckolls:* Sound and good. *Merrick:* Last year none; this, a better crop than for ten years. *Adams:* Last year all taken by the grasshoppers; this, a good crop.

OREGON.—*Douglass:* Cut short by drought.

COLORADO.—*Wild:* Has generally matured.

UTAH.—*Washington:* Extra good. *San Pete:* Light, and the quality inferior.

POTATOES.

As foreshadowed in previous returns for condition, the crop is extraordinary in both product and quality. The total yield in the districts reported is made fully one-fourth greater than last year. Among the States producing heavy crops, New York exceeds last year's product 7 per cent.; Pennsylvania, 12; Ohio, 25; Michigan, 59; Indiana, 41; Illinois, 107; Wisconsin, 28; Iowa, 71. In Missouri, Kansas, and Nebraska, where partial failures were reported last year, the crops are very large, upon an increased acreage. North of the Potomac, States not claiming a larger yield than in 1874, are: New Jersey, 99; Delaware, 95; and Maryland, 86, the reduction being chiefly caused by early drought and by the beetle; and Maine 20 per cent. below last year in product, caused mainly by early rust, which killed the crop in many localities before maturing, and occasioned more or less rotting. In Aroostook County which grows potatoes on a large scale for both food and starch, and n which the yield is usually abundant and the quality superior, the ground

was "so saturated with water that the yield is light and the quali poor." The average quality for the State is 8 per cent. below that of last year, while in all the other New England States it is better than last year. Orleans, Vermont, has marketed many thousand bushels, at 20 to 25 cents, for starch. Berkshire, Massachusetts, reports the heaviest crops for many years, selling at 30 to 35 cents. In Washington and Warren, N. Y., the crop was injured "by a large white grub." Montgomery, Penn., reports that owing to the beetle many localities did not return the seed. But this is the only really adverse return. The prevailing descriptions of product are "immense," "prodigious," "greater than for twenty years," "greater than ever before," &c. The quality averges for the State 2 per cent. better than last year. The price reported in Cambria is 30 to 40 cents. In Virginia the yield is 8 per cent., and the average quantity is 3 per cent. better than in 1874. The returns from King George state that "neglected fields were completely ruined by the beetle," and from Washington, that the Peerless, especially, have rotted badly.

An unprecedented yield is indicated generally throughout the valleys of the Ohio, the Mississippi, and the Missouri. The same is true of Michigan as a whole, though there are some local exceptions. Menominee reports a yield much less than last year, but of good quality, while Delta reports a light yield, with quality much below par. In Antrim and Charlevoix, Peach-blows did not fully ripen. On the other hand, many counties report extraordinary crops in both yield and quality—among them, Lapeer, Lenawee, and Jackson, the largest ever grown; Newaygo, the best in yield and quality ever known, "selling at 20 cents, if lucky enough to find a buyer;" Tuscola, an extra crop, selling at 25 cents. Williams, Ohio, reports the best crop in yield and quality ever grown; dull at 25 cents. "Many specimens weigh 3 to 4½ pounds." The minimum price is 15 cents, in Marshall, Indiana; Schuyler, Illinois; Blue Earth, Minnesota; Pottawattomie, Iowa; and Clay, Kansas. In Mitchell, Kansas, the Peerless yielded 400 bushels per acre; and Butler produced many single potatoes weighing more than 1½ pounds. Hall, Nebraska, reports that from about 3 acres 1,100 bushels of excellent quality were sold off.

MAINE.—*Piscataquis:* Small, owing to early rust. *Aroostook:* Extensively raised both for food and for starch. Usually an abundant yield of superior quality; but this year the crop has been so saturated with water that the yield is light and the quality poor. *Waldo:* Very light crop, owing to rust, and the quality not average. *Cumberland:* Rotting to some extent in the cellar.

VERMONT.—*Orleans:* Late potatoes injured by severe freezes. Many thousand bushels marketed for starch at 20 to 25 cents per bushel. *Rutland:* A large yield and low prices, 25 to 30 cents. *Caledonia:* Good yield and excellent quality.

MASSACHUSETTS.—*Berkshire:* The heaviest crop for many years, and of excellent quality; price, 30 to 35 cents.

NEW YORK.—*Washington:* The crop materially injured by a large white grub. *Warren:* Much lighter crop than was anticipated; injured by a large white grub, and Peach-blows injured by frost before fully grown. *Wyoming:* Some affected by the rot. *Sullivan:* Unusually good.

NEW JERSEY.—*Ocean:* The smallest yield for many years, owing to early dry weather, the beetles, and excessive rains in August. *Burlington:* Late varieties destroyed by the beetle.

PENNSYLVANIA.—*Elk:* A prodigious yield, of superior quality. *Montgomery:* Many localities did not return the bushels planted, owing to the Colorado beetle. *Armstrong:* Large, and in good condition. *Cambria:* Immense crop; selling at 30 to 40 cents. *Sullivan:* Never better. *Bedford:* Excellent. *Butler:* Not such a crop in quantity and quality for the last twenty years; all housed in good condition. *Mifflin:* Very large crop, and excellent in quality; more in the county than ever before in one year. *Columbia:* Gathered, and keeping well. *Lycoming:* The crop very abundant and the quality fine. *Tioga:* Less in yield, but of excellent quality.

MARYLAND.—*Frederick:* A little rot. *Dorchester:* Almost a failure, on account of the

beetle. *Caroline:* Did better than was expected. *Prince George:* Late potatoes almost entirely destroyed by the beetle. *Baltimore:* Acreage much reduced, but the crop much better than last year.

VIRGINIA.—*Spottsylvania:* Large crop, and very fine. *King George:* The beetle completely ruined neglected crops. *Elizabeth City:* Much above average in quantity and quality. *Henrico:* Fine. *Chesterfield:* Very heavy yield; quality good and size large, some weighing 2 pounds each. *Highland:* Never better. *Lancaster:* Very good. *Washington:* Have rotted, especially the Peerless. *Westmoreland:* A good crop of very fine quality. *Wilson:* Small compared with last year.

FLORIDA.—*Suwannee:* The second crop not as good as the first.

ALABAMA.—*Lauderdale:* Good.

TEXAS.—*Dallas:* Yield and quality good. *Red River:* Abundant; price 75 cents. *Rusk:* The second crop promises a fair yield.

ARKANSAS.—*Fulton:* Excellent in yield and quality.

TENNESSEE.—*Monroe:* Good. *Bradley:* Few, but good. *Bledsoe:* Very good in yield and flavor.

WEST VIRGINIA.—*Ritchie:* Rotting to some extent. *Braxton:* A good crop in yield and quality. *Mason:* The largest crop ever raised.

KENTUCKY.—*Nicholas:* Larger yield and better quality than last year. *Ousley:* Badly injured by the beetle.

OHIO.—*Ross:* The largest crop for years. *Williams:* In yield and quality the best crop ever raised. Many specimens weigh 3 to 4½ pounds. I saw one specimen which weighed 4 pounds and 10 ounces; selling at 25 cents, and dull at that. *Sandusky:* The best crop ever known. *Van Wert:* Plenty, and very fine; 25 to 35 cents per bushel. *Geauga:* The most abundant crop ever known; good quality; in some instances one-half the crop offered for digging. *Butler:* Late; very short, and poor in quality. *Medina:* Only 25 to 30 cents in the county, and in Cleveland market only 30 to 45 cents. The Jersey Peach-blows sell for the highest price, and Early Rose the lowest. *Monroe:* Good; 25 to 40 cents. *Perry:* Large crop, of good quality. *Delaware:* Early Rose very fine; later varieties not so good, *Athens;* A very large crop, of fine quality. *Trumbull:* More plenty, and cheaper than for many years.

MICHIGAN.—*Menominee:* Good in quality, but the yield much less than last year. *Wexford:* Enormous crop. *Lapeer:* The largest product ever raised, and the quality remarkably good. *Delta:* A light crop, and the quality much below par. *Tuscola:* Extra crop; 25 cents per bushel. *Lenawee:* The largest crop ever known. *Barry:* Has not been such a crop in ten years. *Jackson:* Largely exceeds any previous crop in yield and quality. *Mason:* Very good. *Antrim:* Early Rose first-rate; Peach-blows not ripe. *Charlevoix:* A great yield, but Peach-blows more or less injured by frost. *Newaygo:* The best crop ever known in yield and quality; sell for 20 cents, if lucky enough to find a buyer. *Montcalm:* A very large crop. *Kent:* A heavy crop; rotted considerable in heavy soil.

INDIANA.—*Decatur:* Yielded enormously, but rotted before digging. *Dubois:* Very large crop, but some rotted in the ground. *Jasper:* The best crop ever known. *Marshall:* Worth 15 to 20 cents, and slow sale at that. *Perry:* Small crop, of good quality.

ILLINOIS.—*Piatt:* Extraordinary crop in both yield and quality. *Fulton:* The finest crop for many years. *Woodford:* A very heavy crop. *Clinton:* First-rate. *Pike:* Good and cheap. *Sangamon:* Very abundant. *Montgomery:* Plenty, the first time for many years, and of excellent quality. *Schuyler:* I think 250 rather under than over the mark. There is but little demand for potatoes at 15 to 20 cents per bushel. *Boone:* Very large and fine. *Fayette:* The finest crop ever raised. *Morgan:* Very great yield, but of poor quality.

WISCONSIN.—*Chippewa:* Early, very good; many late pieces were not dug. *Dodge:* Good in yield and quality. *Walworth:* Large yield, of good quality. *Crawford:* A big crop. *Iowa:* Injured by early frosts.

MINNESOTA.—*Meeker:* Remarkable yield. *Blue Earth:* Plenty, at 15 cents per bushel. *Redwood:* Excellent in yield and quality. *Steele:* Large crop. *Waseca:* Better than for many years.

IOWA.—*Pocahontas:* Excellent in yield and quality. *Marion:* Rotting to some extent. *Harrison:* Very fine in yield and quality. *Muscatine:* The quality decidedly poor. A peculiar dry black rot has attacked them. *Polk:* The best crop for many years. *Pottawatomie:* Price, 15 to 25 cents per bushel. *Linn:* Splendid crop. *Scott:* Unusually large crop and very fine.

MISSOURI.—*Chariton:* A large yield, of excellent quality. *Greene:* The best crop in ten years. *Camden:* Remarkably fine. *Cass:* Never a better crop. *Newton:* Good yield and fine quality. *Lawrence:* The Early Rose 50 per cent. superior to any crop for five years.

KANSAS.—*Miami:* The crop wonderful for extent, size, and quality. *Mitchell:* Peerless, 400 bushels per acre. *Cherokee:* The finest crop ever raised. *Cowley:* Very fine in yield and quality. *Butler:* The crop has scarcely a precedent, making in some instances 200 bushels per acre, of the best quality, many of the potatoes weighing more

than 1½ pounds each. *Clay:* Never better; price, 15 to 20 cents. *Labette:* Never better. *Osage:* Exceeds any crop before raised. *Leavenworth:* Badly ripened.

NEBRASKA.—*Dixon:* The best crop ever raised. *Lancaster:* Very large crop. *Hall:* The farmers of Nebraska will remember 1875 as "the great potato year." From about 3 acres 1,100 bushels of excellent quality were sold off. *Antelope:* An enormous yield; will average 225 bushels per acre, and one acre of my own gave 325, Early Rose and Harrison, of excellent quality. *Clay:* An increase of 25 per cent. in acreage; the yield twice that of last year, and the quality much better. *Nuckolls:* Good, and free from disease. *Merrick:* Quantity and quality better than since the world began.

CALIFORNIA.—*Sonoma:* Injured by blight. *Lake:* Unusually good. *Mendocino:* Badly affected by the blight.

OREGON.—*Douglas:* Cut short by drought.

COLORADO.—*Wild:* Remarkably good crop.

UTAH.—*San Pete:* Light crop, but the quality very good.

SWEET-POTATOES.

In the rainy section the crop suffered in yield and quality from excessive moisture. In the Gulf States and west of the Mississippi the yield largely exceeds that of last year, and the quality is about average. In New Jersey, Delaware, and Maryland the product is about 3 per cent. greater than in 1874; the quality in the two former is slightly depreciated, and in the latter slightly improved.

MARYLAND.—*Worcester:* Not average. The summer rains caused rank growth to the vines at the expense of the potatoes. *Caroline:* Turned out well.

VIRGINIA.—*Patrick:* Too much rain for this crop. *Matthews:* Very short crop; too much rain. *Henrico:* Fine. *Northampton:* Inferior in quality. *Chesterfield:* Quality excellent. *Lancaster:* Very good.

NORTH CAROLINA.—*Iredell:* Of fine quality. *Nash:* Very fine. *Gaston:* Good. *Chowan:* Only three-quarters of a crop.

GEORGIA.—*Berrien:* Materially benefited by recent rains. *Wayne:* Suffered much from drought; not more than half a crop. *Clayton:* Short; owing to drought. *McIntosh:* Cut off one-half by the late drought. *Wilcox:* Cut short by dry hot weather.

ALABAMA.—*Clarke:* Doing well since September rains. *Montgomery:* Turning out exceedingly well. *Lauderdale:* Good. *Covington:* Yield per acre short, but large increase in acreage.

MISSISSIPPI.—*Pike:* Abundant and fine. *Newton:* Of superior quality. *Jefferson:* Splendid.

TEXAS.—*Dallas:* Fine yield, of unsurpassed quality. *Red River:* Abundant; price 75 cents. *Upshur:* Quality much better than last year. *Harrison:* Good.

ARKANSAS.—*Arkansas:* A bountiful crop, of first quality. *Fulton:* Materially injured by drought.

TENNESSEE.—*Monroe:* Almost a failure. *Grundy:* Inferior in size and quality. *Greene:* Better in quality than quantity. *Cheatham:* A fair crop last year, and better this. *Bledsoe:* Generally very small. *Mason:* The largest crop ever raised. *Ousley:* Injured by the rains, and cut short by frost.

OHIO.—*Athens:* Less than average, and not good.

INDIANA.—*Ripley:* Yielded well, but were poor in quality.

IOWA.—*Harrison:* Too wet for sweet-potatoes.

MISSOURI.—*Chariton:* A large yield of excellent quality. *Camden:* A magnificent crop. Some specimens weigh 7 to 10 pounds.

KANSAS.—*Miami:* Too wet for sweet-potatoes. *Cowley:* Very fine in yield and quality.

COTTON.

November returns make a direct comparison of the product of this year with that of 1874. As former reports of condition have indicated, the States bordering on the Atlantic all show a reduced product, and those in the Mississippi Valley an increased yield.

Prior to November 1, killing frosts had appeared in the more northern States of the cotton-belt, in some counties of Northern Georgia, and in the district north of the Tennessee River, in Alabama. Elsewhere the cotton-plant was uninjured, and generally in vigorous growth on the best lands. In one parish in Louisiana (Claiborne) it is claimed that

a week's continuance of fine weather would increase the local yield several hundred bales.

There is much inequality in the progress of packing. In some counties of Georgia and Alabama the harvest is nearly over. In Mississippi, the work has been delayed by political difficulties and by sickness. In Washington County, two-thirds of the crop was ungathered, and it was feared that Christmas would find one-fourth still in the fields.

Fine weather has been the rule, with a few exceptions; but in Louisiana much fiber has been lost or stained by storms. The effect of the great September storm in Southern Texas proves less disastrous than was at first represented.

The amount of lint in comparison with weight of seed-cotton is quite variable, ranging from 25 to 33 per cent., but, so far as reported, appears to be less than in 1874.

The State percentages, representing the aggregate quantity as compared with last year, are as follows: North Carolina, 91; South Carolina, 76; Georgia, 74; Florida, 90; Alabama, 102; Mississippi, 111; Louisiana, 100; Texas, 114; Arkansas, 135; Tennessee, 116.

From a review of the monthly returns of correspondents, it appears that the area in cotton was increased about 2 per cent. The plant obtained rather a fairer start than usual, though germination was delayed on the Atlantic coast region. The June returns averaged, in condition, a small percentage under the standard of good development; in July, improvement was indicated in every State except Texas, where drought and insects were locally injurious, and the average condition of the entire area was very near the standard, or 100; in August, the effect of drought, particularly in South Carolina, Georgia, and Louisiana, was manifest in a small reduction of their percentages, yet the general average for this month was fully as high as that of June; and in August and September the blighting of drought was followed by excessive rains, causing injury by floods, by the shedding of bolls, by rust, and other abnormal conditions, reducing the general percentage, month by month, from August to October. The following comprises the tabulated statement of the season from June to November inclusive:

States.	Acreage, per cent. of last year.	Condition: 100 representing average growth and unimpaired vitality.					Product compared with last year.
		June.	July.	August.	September.	October.	
North Carolina	102	92	95	99	90	85	91
South Carolina	106	97	99	84	80	77	76
Georgia	96	91	97	86	76	71	74
Florida	99	94	101	85	75	70	90
Alabama	104	101	102	93	87	94	102
Mississippi	102	100	103	104	98	96	111
Louisiana	101	95	105	99	88	90	100
Texas	108	96	93	93	94	88	114
Arkansas	101	90	104	108	99	103	135
Tennessee	92	99	109	107	96	90	116

The percentages of the several monthly returns of the present year, up to the last report of "condition," in October, were higher than in the previous year, and naturally indicative of a larger crop. A possible modification of this increase—scarcely a total destruction of it—might arise in case of an early frost and bad weather for opening and picking, or both circumstances combined.

Next we come to the first direct estimates of quantity expected, made November 1, before killing frosts appear in the main cotton-belt. The tabulation of these gives the November percentages represented the quantity expected this year, compared with the *actual crop harvested last year*—figures about which there is no mystery or difficulty, expressing their meaning so plainly that a wayfaring cotton-broker, though a fool in his assumed simplicity, need not err therein.

Such is the record made by our correspondents. There will be one more in December, when all, except a portion of the last picking, has been gathered. Till then no estimate of the total product will be made by the statistician. It may be stated, however, to avoid misunderstanding, that the accurate figuring of the November percentages makes an aggregate approximating 3,900,000 bales—not 50,000 less, as some have calculated, their error consisting in giving too large a number of bales to the seaboard States, whose percentages are low, and too small totals to the Western States, especially in giving Alabama a larger production than Mississippi, which she lacks by nearly 20 per cent. But the November returns are always more conservative than those of condition during the summer, and a careful analysis of the season's reports, in all their aspects, would compel an estimate, if made with no further data, not far from five per cent. greater than the returns of November alone would indicate. It might be still larger but for comparative lateness of development and reduced yield of lint in proportion to seed. This renders it almost certain that the crop will pass the limit of 4,000,000 bales. So much may be said in advance of the final return and official estimate.

The best cotton-authorities of this country and of Europe have already made interpretations of the season's returns, which accord with their obvious general tenor. Among them may be named that eminent European authority, the firm of Ellison & Co., of Liverpool, an extract from whose communication of October 30 is as follows:

> Upon the basis of your reports we have made very successful estimates of the cotton-crop for two seasons past. Our plan is not to take the condition for any one month, but the average condition for the season. We may or may not be right in our theory, but for two seasons we have been successful. For the present crop we put down 3,900,000 to 4,100,000 in July last, when other people were making 4,500,000 to 4,800,000 out of your figures. Since then the tendency has been to come down to our figures. At present we lean toward 4,100,000, owing to the improved condition shown in your last report, and we think 4,250,000 possible with an open winter; but we think 4,500,000 out of the question, and we do not think that at any time this season so large a crop as 4,500,000 looked at all likely.

Experienced statisticians will not be guilty of the absurdity of interpreting any series of crop-reports by a comparison of the returns of any one month with those of the same month of the previous year, without reference to all the facts reported throughout the season. With fair expression of the most reliable human judgment as to the condition of the growing plant, it would be an impossible thing to indicate in advance the ultimate outcome in pounds of cotton, even if the state of future weather and length of the cotton season could be determined with prophetic accuracy. In an expected crop of four million bales, a reduction of the lint from 30 to 28½ pounds in each 100 pounds of seed-cotton would reduce the yield 200,000 bales; and there is greater difference than this in the yield of different years. If killing frost cuts short the period of growth and maturation a single week, the season is shortened one-tenth, and the crop, other circumstances being equal, is reduced at least a quarter of a million bales; and if the weather afterward con-

duces to waste and prevents picking, the reduction may be a half million bales.

These are circumstances that *may*, if all combined, which would be unusual but not impossible, reduce an expectancy of 4,000,000 bales in October of any given year to 3,300,000, or raise it to 4,700,000. Therefore it becomes the duty of the crop-reporter to give present facts rather than utter prophecies that the weather or other agency may overturn in the next ten days. Even after the crop was nearly gathered and almost half of it marketed, there were savans skilled in cotton lore that last winter exceeded the truth a round half million bales in their estimates.

The following extracts from correspondence are appended:

VIRGINIA.—*Dinwiddie:* The diminished area to make room for tobacco shortened the crop. It is opening well.

NORTH CAROLINA.—*Iredell:* The crop better than was expected. *Nash:* Short staple. Rust on some lands. Fine time for picking. *Gaston:* The frost about the 12th of October caused a much larger per cent. of unripe bolls than was expected. *Beaufort:* The picking season has been rather too wet, causing some rotting of bolls. *Chowan:* Injured by rust; staple short. Fine weather for picking. *Wake:* Short crops; the first picking yielded an astonishingly small proportion of lint; the late picking yields better. *Wilson:* Staple short and not yielding well. *Camden:* Better than indicated one month ago; the weather all that could be desired. *Anson:* Materially shortened by protracted drought and early frost. *Rutherford:* The increased product owing to increase in acreage.

SOUTH CAROLINA.—*Fairfield:* The great frost on the 16th of October cut short all hope of an average crop. *Marlborough:* All gathered, and turning out unusually bad from the seed; it requires 1,400 pounds to make a bale this year in place of 1,200 last. The weather was fine for picking and the lint is clean. *Orangeburgh:* Injured by drought. *Clarendon:* Less than half the product of last year; four pounds of seed yield one of lint. *Marion:* The yield of lint 10 per cent. less than last year, the seed-cotton being 80. *Newberry:* The yield higher than expected, but the lint rather short. *Georgetown:* Injured by frost on the 16th of October. *Lexington:* Not over two-thirds of a crop, but the quality very fine. *Spartanburgh:* Late cotton injured by frost. *Edgefield:* The percentage of poor cotton smaller than ever before. *Laurens:* Will be more yellow cotton than usual. The proportion of lint to seed-cotton less than last year.

GEORGIA.—*Berrien:* The top-crop materially benefited by recent rains. *Harris:* Almost a complete failure. *Montgomery:* Yielding much better than anticipated; the staple much better than usual and the finest weather for picking. *Dougherty:* Have had through the month splendid weather for cotton, which, if it continues, will add materially to the crop. *Forsyth:* Not over 75 per cent. of an average; 1,700 bales, of 450 pounds, will cover the crop, and 300 of these will be stained. *Gwinnett:* The staple is fine, and yields one pound of lint to three in seed, and pay for ginning. *Terrell:* The weather warm and dry, and some cotton may yet open. *Worth:* Badly rusted, and lint very light. *Clayton:* Very favorable for gathering; nearly all picked out in good condition and is of good quality. *Floyd:* The top-crop greatly damaged by a killing frost October 14. *Upson:* Short crop, and of inferior quality. *Dooly:* Badly injured by dry weather and rust. *McIntosh:* Cut off one-half by the late drought. *Mitchell:* Rusted and shed its fruit. *Wilkinson:* Injured by drought and rust. *Wilcox:* Cut short by drought and rust. *Carroll:* Light yield, owing to drought and rust. *Hancock:* Turning out poorly. *Walton:* The crop will be full average. *Whitfield:* Greatly injured by severe frosts. *Appling:* The full crop cut short by dry weather. *Douglas:* Favorable weather for picking. *Putnam:* A frost, about three weeks since, killed all the cotton. *Milton:* Owing to favorable weather, the yield at least 10 per cent. better than anticipated. *Early:* A wonderful top-crop of grown and half-grown bolls, but slow in opening.

FLORIDA.—*Gadsden:* The promise of a top crop on clay-lands has improved since the last report. Favorable weather for picking and help abundant.

ALABAMA.—*Clarke:* Since the September rains a new crop has started in places; a large number of bolls, nearly full grown, are on the plants, and, should no severe frost come, will open and make cotton in eight or ten days. *Greene:* Said to be the best crop for many years. *Madison:* Injured 10 per cent by the heavy frosts. *Montgomery:* Will average about 170 pounds of lint per acre. *Shelby:* Favorable weather for cotton-opening. *Chambers:* Nearly all gathered and sold. *Lauderdale:* The lightest crop since 1866. *Limestone:* Cut off fully 33 per cent. by a destructive frost October 12. *Russell:* The bulk of the crop gathered and sold. *Franklin:* Scarcely two-thirds of a crop will be gathered. *Monroe:* Very favorable for gathering. The quality of the

lint not so good as last year, owing to drought and rust. *Covington:* A large increase in the quantity planted, but shortened by what is reported as rust, but is in reality the ravages of small insects. *Colbert:* Favorable season for picking, but a large part yet unpicked for want of labor. Will average about 700 pounds per acre in seed-cotton and 235 in lint. *Wilcox:* Very favorable for picking. *Barlow:* Very favorable for gathering; picking almost finished. *Conecuh:* Owing to absence of frost the plant is doing well, and will reach a full crop. *Bullock:* The favorable fall has improved the yield greatly.

MISSISSIPPI.—*Grenada:* The increased acreage makes the aggregate 10 per cent. greater than last year. Not more than half as much picked out as last year at the same date, owing to much sickness, politics, and laziness. *Pike:* Nearly a full crop, but the quality not very good; being gathered and brought to market rapidly. *Warren:* Some loss by rains and winds. *Lafayette:* The quality greatly improved by the favorable weather of the past month. *Newton:* The yield fully one-third less than last year and the lint of inferior quality. *Wayne:* Since the 15th of August has grown finely, and is maturing very well. *Washington:* From present appearances nearly one-fourth of the crop will be found in the fields on the 1st of January for want of labor; not one-third yet gathered, though the better part of the season is past. *Lee:* An unusual amount open and unpicked in the field. *Lowndes:* Favorable weather for gathering. *Tishemingo:* Not as much in market at date as last year, owing to much sickness. *Adams:* Fine weather for picking. *Jefferson:* Reduced by early frost, rot, and rust.

LOUISANA—*Iberia:* The crop largely better than any since the war. *Lafayette:* Last year, 50 per cent. of an average; this year, 75. *Caldwell:* More favorable than anticipated in September. *Morehead:* Turning out better than was expected. *West Feliciana:* The picking-season one of the most unfavorable ever known, owing to excessive rains. *Caddo:* Very trashy, from being beaten and blown out of the bolls by wind and rain. Labor picking well, and the crop will all be gathered early. *Madison:* The crop being saved in very good condition. *Claiborne:* Heavy rains and winds have greatly injured the quality. There is now a crop of green bolls just beginning to open, good staple, and, if the present favorable weather holds on a week, the crop in this parish will be increased several hundred bales. *Franklin:* The yield of seed-cotton per acre will equal last year's, with a greater proportion of lint of superior quality. *Saint Landry:* Fine weather for picking. *Concordia:* Picking retarded by sickness; loss by storms and rot; an immense amount open and unpicked.

TEXAS—*Bowie:* Turning out a great deal better than expected. The Red River bottoms are yielding an average of 500 pounds of lint per acre and the uplands 200. *Dallas:* Turning out finely. The crop will average 400 pounds of lint per acre, and in quality will class above any crop before raised in the county. *Palo Pinto:* Better than for several years. *Washington:* Yields a little over half a bale per acre. *Red River:* Abundant crop; better than for many years. Fine weather for picking, but labor scarce. *Upshur:* The fall remarkably favorable for the maturing of the late crop; often see the cotton-bolls ripe and open from the ground to the top. *Williamson:* Acreage and product increased over last year. *Collin:* Opening very fine, and very favorable weather for picking. *Cooke:* Good time for picking. *Falls:* The fall very favorable for cotton. *Rusk:* The greater portion gathered. *Laraca:* The top crop is maturing, and much has already matured. The cotton from this county has graded higher than ever before. *Polk:* The damage by flood and wind not as great as at first supposed. *Anderson:* Favorable indications for a heavy top crop. *Harrison:* The crop nearly all gathered. *Lamar:* Far the largest and best crop since the war; the lint very fine and good; classes very high in market. *Nacogdoches:* The crop has improved. *Smith:* Fine weather, and the crop still doing well. *Bosque:* All late cotton damaged by drought and early frost, but very fine season for picking; quality good. *Titus:* Yield much better than expected; the weather fine and the crop nearly gathered; lint fine and staple better than for many years. *Fort Bend:* Owing to the very favorable weather, much more has been picked than was anticipated. *Bastrop:* Mostly saved, owing to the favorable season. *Matagorda:* A fair indication of nearly half a bale per acre. *Hunt:* Fine weather for picking.

ARKANSAS.—*Arkansas:* Good; great part picked; favorable weather. *Boone:* The dry weather the last two months has caused the crop to open better than usual. *Little River:* Extraordinary yields; in four or five large crops the first picking is reported as yielding 2,000 pounds per acre, and as much more in the field. *Dallas:* Most favorable weather for housing the crop. The fiber the best I have seen for years. The labor better than it has been. *Fulton:* So much superior to last year's crop that I was tempted to put it at 500. *Izard:* Very favorable fall for picking, but much sickness has caused the larger part to be left still hanging on the stalk. *Marion:* On very rich soil the stalk grew too large, but on land not so rich, particularly on sandy soil, the crop was extra fine and opened well. The lint of fine quality. *Saint Francis:* Greatly damaged by rust or blight. *Yell:* The season has been very favorable for opening and picking. Some farmers have made 450 pounds of lint per acre. *Bradley:* Being gath-

ered slowly, owing to more sickness than for a number of years. *Independence:* Seriously injured by early and severe frosts. Very favorable for picking. *Woodruff:* Will fall short of the September estimate 33 per cent. *Ouachita:* Matured and opened earlier than ever known before. Weather very favorable. *Franklin:* In making the estimate 130 indicates the quality; the aggregate product will be at least 200 per cent. more. The fall exceedingly favorable for cotton. The staple is good in quality and condition.

TENNESSEE.—*Lincoln:* Seriously injured by frost. *Maury:* Seriously damaged by frost. *Gibson:* Very seriously damaged by frost. *Putnam:* Slow in opening and not as good as usual. *Fayette:* Better than last year 10 per cent., but 15 to 20 per cent. below an average. *Rutherford:* Damaged by frosts. *Wilson:* The yield very light. *Tipton:* The acreage 10 per cent. less, but the crop 10 per cent. greater than last year. *Hardeman:* Very fine on new lands, but light on old. *Giles:* The outlook gloomy; the crop will prove a great loss to those growing it.

TOBACCO.

Our November returns indicate an increase in the tobacco-yield of over 75 per cent. as compared with last year, when a partial failure was experienced. All the large tobacco States show a marked increase in production, especially Tennessee and Kentucky. The New England crop has increased about 10 per cent. in quantity, and every county reporting from this region indicates a greater or less improvement in quality. The cut-worm was injurious in some parts of Connecticut during the early stages of the crop, making the growth somewhat uneven, but favorable conditions for curing indicate a very fine quality for leaves for cigar-wrappers. The other tobacco States of the Atlantic slope indicate an increased production and an improved quality. Maryland increases her yield about one-tenth and Virginia and North Carolina between a fourth and a third. Worms were troublesome, disfiguring the leaf in Amelia, Virginia; and excessive rains are complained of in one or two counties; but the general conditions of growth, harvesting, and curing appear to have been very satisfactory. Iredell, North Carolina, reports the finest bright wrappers ever produced in that county. Quite a number of counties doubled their production. Georgia and the Gulf States all show an increased yield. In Bowie, Texas, some farmers made two crops. The plant will probably be grown on an enlarged scale in this region hereafter. All the Southern inland States show an increased product and an improved quality. A lack of skill in curing is noticed in some counties of Arkansas and Kentucky. In some of the more northern counties frost cut off some of the crops, and in others a lack of sunshine is noted; but these were exceptions to the prevalence of good growing and curing weather. No complaints of any sort accompany the reports of Tennessee, where the yield has increased enormously from last year. In all the tobacco States north of the Ohio River there has been an increased production, but a greater or less decline in quality. In many cases the crop was cut green to avoid frost, which was very destructive. All the States west of the Mississippi report a great increase in yield, especially Missouri and Nebraska. Chariton and Howard Counties, Missouri, will probably market each 10,000,000 pounds of fine quality. Frost was but slightly felt here, but was more severe in some other counties. In Contra Costa, California, an experiment in tobacco-culture upon thirty acres of dry soil, unirrigated, was quite successful. It is thought that California can raise a very fine article of smoking-tobacco.

CONNECTICUT.—*Hartford:* Very much injured by the cut-worm in its earlier stages, which makes the growth uneven. Favorable weather for curing, and appearances indicate a very fine leaf for cigar-wrappers.

MARYLAND.—*Montgomery:* Perhaps the largest crop ever grown. The quality generally good and secured in good condition. *Howard:* A good planting, growing, and

gathering season and a larger area than usual combine to give us a large crop. *Charles:* The crop one-third better in quantity and quality than last year, and the yield of last year was underestimated. *Calvert:* The season for curing fine.

VIRGINIA.—*Caroline:* Harvested in good condition; the weather favorable for curing. *Carroll:* Beyond any previous year in quantity and quality. All I have seen is of the first grade, and will be used exclusively for wrappers. *Fluvanna:* The largest crop for 10 years. *Powhatan:* The figures (200 for quantity and 150 for quality) I think are below the reality, but prefer to fall below the mark rather than overestimate. *Spottsylvania:* Tobacco (marked 150) ought to be put 300 for quantity. *Pittsylvania:* The quality injured by too much rain. *Dinwiddie:* The area twice that of last year. The crop was cultivated and secured with more care than any previous one; no grass to bother, but few worms, and just rain enough to make it grow. *Orange:* The season has been unusually favorable for curing, and the quality will be above average. *Amelia:* The excellent season of August and September has given a large crop. The yield is large in pounds, but the leaf is disfigured by worms. They were more numerous than ever before. *Henrico:* We have but little, but the yield is double the average. *Chesterfield:* Large area, yield very heavy, cut and cured in good condition; quality average. *Grayson:* Much larger and better product than last year. *Halifax:* Quality injured by excessive rains. *Mecklenburgh:* The season very propitious for cutting and curing; none injured by frost.

NORTH CAROLINA.—*Forsyth:* A very large crop; I think over 1,000,000 pounds in this county. *Iredell:* All housed and safe; at least double the quantity of last year and fully equal in quality. Have seen the finest samples of bright wrappers that I have ever seen in the county. *Haywood:* The wet which destroyed the cereals has been an advantage to the tobacco. *Caswell:* The staple in this county, poor in quality, in weight will fall 25 to 30 per cent. below the average. *Durie:* Double last year's amount, and of better quality. *Person:* Seriously damaged by wet weather while ripening, yet almost a double crop.

FLORIDA.—*La Fayette:* Badly injured by drought.

ALABAMA.—*Covington:* Increased acreage and the quality improved as the farmers learn better how to handle it.

TEXAS.—*Bowie:* Will be an extensive product in the future. Better this year than ever known before, and in many instances has made two crops. *Titus:* A large crop planted, but much died out from drought.

ARKANSAS.—*Arkansas:* A good crop, but not well cured in some places. *Fulton:* A choice crop in yield and quality.

TENNESSEE.—*Maury:* Not over fifty acres last year; this year the acreage ten times greater. *Gibson:* The area larger than since 1865. *Putnam:* Acreage 50 per cent. above average and the quality very good. *Cheatham:* Have put the crop at five times as much as last year, and think this is short of the reality. The quality is much better. *Trousdale:* The fall very favorable for tobacco. The crop will be larger in pounds than in 1873, but not so good in quality. *Wilson:* A large crop has been made and all out before frost. *Dickson:* Housed in good condition. *Robertson:* Will about equal the crop of 1873 in product, and the quality 25 per cent. better than last year. *Lewis:* Five times the amount that was raised last year.

WEST VIRGINIA.—*Putnam:* Too much rain and too little sunshine for the crop. *Summers:* Above the average in every respect 50 per cent.

KENTUCKY.—*Adair:* The latter part of the season very favorable and the crop improved very much. *Lewis:* The product very satisfactory. Inexperience in tending and securing the crop affected the grade and quality. *Cumberland:* The greater portion will be of inferior quality. *Nichols:* Some injured by the early frosts. *Ohio:* The last six weeks quite favorable, and the yield will be larger and the quality better than anticipated. *Todd:* About 90 per cent. of an average crop, but the product compared with last year is 150. *Warren:* All housed and of fine quality. *Breckinridge:* A full average crop for any year. The quality reduced by its being of a smaller staple. *Graves:* The largest crop we have ever housed, but somewhat impaired in quality. *Butler:* A large crop and but little frosted.

INDIANA.—*Vanderburgh:* Not quite a full crop, but the quantity at least double that of last year. *Warwick:* A poor crop in yield and quality.

ILLINOIS.—*Johnson:* Most of the crop was cut too green through fear of frost, hence the inferior quality.

WISCONSIN.—*Rock:* Acres in 1874, 518; in 1875, 2,210. A good growth, but the August frosts did much damage, especially on low ground.

MISSOURI.—*Chariton:* The crop estimated at 10,000,000 to 12,000,000 pounds in the county. Many think this estimate too low. The quality is fine. Not damaged by worms or storms, and but a small portion by frost, and that slightly. *Camden:* A heavy crop, but somewhat damaged by frost. *Perry:* Average with last year, but only half a crop and poor quality. *Howard:* The yield will probably reach 10,000,000 pounds.

CALIFORNIA.—*Contra Costa:* About 30 acres were raised for the first time. It did remarkably well on dry soil, without irrigation. The promise is that we can raise the finer varieties of smoking-tobacco to perfection.

FRUIT.

The yield of the various fruits corresponds to the low condition indicated in our previous reports. The year has been mostly one of disaster to the fruit-growers, though some parts of the country have enjoyed a total or partial exemption from this injury. Late spring-frosts following severe winter-freezes, with the recurrence of low temperatures in April, crippled all the leading crops at the opening of the season. Insect-injuries were inconsiderable in extent, though quite a variety of these pests were noted at different times in different parts of the country. The severe winter of the previous year had killed many of the bearing trees. Those parts of the country which received good crops found the high prices of transportation a great hinderance to their disposal; so that, while some communities were entirely destitute, others were compelled to see their crops rot on their hands or dispose of them at unremunerative prices.

GRAPES.—Grapes attained higher condition than either apples or peaches, yet the yield equals last year only in Rhode Island, Delaware, Maryland, Mississippi, Texas, Arkansas, and Oregon. In New England early autumnal frosts shortened the crop. In some parts of New York and Pennsylvania the fruit did not ripen, but turned sour; while, in Virginia and South Carolina, there is complaint of late spring-frosts. In South Carolina there was a tendency to rot, but the Scuppernong showed its characteristic vitality in the South generally. Few specific complaints came from the region south of the Ohio River, Texas, or Arkansas, though the yield in several of these States was below last year, Kentucky not being over two-thirds. North of the Ohio River and west of the Mississippi River the crop was quite scanty. In the southern counties there was a tendency to rot, while to the north there was a failure to mature and an early recurrence of frost to cut off the crop; yet some counties report extra crops. The crop of California, though full average, falls 10 per cent. short of last year in its yield. In Lake County the crop was injured by the white fly. In Utah grapes which escaped frost were generally fine.

APPLES.—The apple-crop yielded above last year in Rhode Island, Mississippi, Texas, and Arkansas. In all the other States the yield is reduced, the minimum, 13 per cent., being in Ohio. The distribution of disasters was quite singular and capricious; while Rhode Island gathered 25 per cent. more than last year, Connecticut harvested 74 per cent. less. The Atlantic slope reports a greatly diminished yield, though in some counties there was an abundance of good fruit. The Gulf States do better, nearly equaling their previous year's gathering. The Southern inland States, except Arkansas, are all below last year, West Virginia not gathering over 20 per cent. of her previous crop. North of the Ohio the case is still worse, the crops ranging from 13 per cent. in Ohio to 62 per cent. in Michigan. West of the Mississippi River the yield is larger, ranging from 36 per cent. in Kansas, where many trees had been destroyed by grasshoppers, to 89 in Minnesota. California gathered 70 per cent., and Oregon 93 per cent., of last year's crop. Drought injured the crop in some parts of the Pacific slope.

PEARS.—This crop did not suffer quite so severely as the apples, but it falls below last year in all the States except Florida, Texas, and Arkansas. It returned the smallest averages in West Virginia, 26 per cent.; in Ohio, 32 per cent.; and in Virginia, 36 per cent. The New England and Middle States and Maryland gathered at least three-fourths of last year's crop; South Carolina, about half; and the Gulf States,

about seven-eighths. The other States, both north and south of the Ohio River, exhibit the same destructive meteorological conditions which so nearly destroyed the apple-crop. The States west of the Mississippi, except Kansas and Nebraska and on the Pacific slope, will average over three-fourths of last year's crop. In the neighborhood of Salt Lake, Utah, the codling-moth was destructive to this fruit as well as to apples.

MAINE.—*Piscataquis:* Few apples on the trees, and small in size. *York:* The frost of September 25 spoiled our grapes. *Waldo:* The lightest crop of apples for years.

NEW HAMPSHIRE.—Grapes destroyed by early frosts.

CONNECTICUT.—*New London:* Grapes injured by frost.

NEW YORK.—*Queens:* All kinds much less than last year, especially grapes and pears. *Washington:* Apples and pears more plentiful than was anticipated, but have not ripened well; grapes in many of the best yards are nearly a failure, becoming sour, instead of ripening naturally. *Steuben:* The grape-crop short, from dry and cold weather. *Wyoming:* Grapes did not ripen; pears, half crop and blighted.

NEW JERSEY.—*Warren:* Very short crop of apples, but good in quality; the crop of pears good in product and quality.

PENNSYLVANIA.—*Bedford:* Grapes poor in quality; did not ripen well. *Erie:* Not over one-tenth the fruit in the county there was last year. *Potter:* Nearly a full crop of apples. *Tioga:* A large crop of grapes, but they did not mature well; a small crop of apples of first-rate quality; a good crop of pears of fine quality.

MARYLAND—*Dorchester:* Apples abundant. *Caroline:* Best crop of apples for years; pears dropped off before maturing. *Prince George:* Very few apples. *Baltimore:* Abundant fruit for home consumption; grapes a reliable crop of late years.

VIRGINIA.—*Pittsylvania:* Grapes promised better than ever before, but rotted before ripening. *Page:* Our fruit-crop almost an entire failure, owing to frosts in the spring. *Dinwiddie:* Late frosts injured the grapes and nearly destroyed all the apples and pears. *Chesterfield:* Large yield of pears and good in quality. *Washington:* Grapes rotted badly.

NORTH CAROLINA.—*Davie:* Grapes very good. The Concords and the Clintons stood the wet weather better than any other varieties. *Hertford:* The grape-crop very abundant. *Chowan:* Grapes short; frost in spring killed the buds, except Scuppernong, which are fair.

SOUTH CAROLINA.—*Clarendon:* Small varieties of grapes rotted badly; the Scuppernong the only kind that reached an average.

MISSISSIPPI—*Pike:* Apples, pears, and grapes very fine.

LOUISIANA.—*Union:* The fruit-crop unusually large, and of superior quality.

TEXAS.—*Red River:* Apples and pears improving every year in quantity and quality.

ARKANSAS.—*Fulton:* Apples and grapes fine.

TENNESSEE.—*Monroe:* Grapes good; pears almost, and apples quite a failure. *Bradley:* Grapes abundant; sold at 5 cents. *Greene:* Grapes yielded largely, but rotted badly.

WEST VIRGINIA.—*Jefferson:* Heavy crop of grapes; apples and pears light. *Mercer:* Less fruit than for ten years.

KENTUCKY—*Lewis:* Apples a failure, except on old seedling trees. *Meade:* The yield of apples much greater than anticipated in the early season. *Campbell:* The fruit-crop an absolute failure.

OHIO.—*Pickaway:* Apples and other fruit almost a complete failure. *Preble:* No apples, and grapes considerably affected with the rot. *Ross:* Except two or three varieties of grapes, all fruit a total failure. *Monroe:* Very little fruit; grapes almost a failure.

MICHIGAN.—*Kalamazoo:* Apples not over half a crop and not of first quality; grapes much injured by frost. *Allegan:* A large yield of grapes, but did not ripen well. *Lenawee:* The largest apple-crop ever known. *Hillsdale:* Double the apples expected, and the quality very fine. A fair yield of grapes, but seriously damaged by frost. *Jackson:* Grapes more than half frozen on the vines. *Livingston:* Apples cut short. *Leelenaw:* Grapes did not ripen well. *Newaygo:* All kinds of fruit unusually light except grapes.

ILLINOIS.—*Mercer:* Grapes did not ripen well. More apples and better than were anticipated. *Pike:* Apples scarce and high. *De Witt:* Apples almost a failure. Grapes in some vineyards matured nicely; as fine as I ever saw; in others, not half a mile distant, they began to rot when half grown and not a tithe ripened. I have never seen the like before. *Franklin:* The grape-crop nearly a total failure from rotting. The apples dropped from the trees and rotted badly. *McHenry:* Grapes promised well, but were overtaken by frost before maturing. *Montgomery:* A hail-storm destroyed many of the apples left by the spring frosts. Grapes were badly injured by the wet

weather. *Schuyler:* Never so near a total failure of apples since orchards commenced bearing. *Boone:* Few apples. *Morgan:* Almost no apples.

WISCONSIN.—*Brown:* At least two-thirds of the grape-crop did not ripen. *Clark:* Grapes fatally injured by the August frosts. *Jefferson:* Grapes a total failure from frosts. *Washington:* An abundant crop of grapes was spoiled by a hard freeze in September. *Iowa:* The best crop of grapes for many years spoiled by frost.

MINNESOTA.—*Isanti:* Apples and grapes damaged by frost in August.

IOWA.—*Marion:* Good crops of apples and grapes. *Decatur:* A good crop of fruit. *Harrison:* Grape-crop fine, and apples unusually fine.

MISSOURI.—*Perry:* Apples half a crop. Grapes all rotted. *Schuyler:* The grape-crop was rotted by the warm moist weather.

CALIFORNIA.—*Sonoma:* The grape-crop a full average, though 90 compared with last year. *Butler:* The fruit-crop almost a failure owing to the dry season. *Lake:* Grapes injured by the white fly.

UTAH.—*Washington:* Pears good; grapes extra; other fruit damaged by frost. *San Pete:* Grapes and apples much injured by hail. *Salt Lake:* Apples and early pears destroyed by the codling-moth. *Beaver:* Fruit entirely destroyed by frost in June.

HAY.

In 1874, New England, except Maine, and the Middle States, reported a large crop, of good quality. Compared with last year's crop, Maine reports an increase of 10 per cent, but in the other States of that section, also in Virginia and West Virginia, there is an average falling off of about 13 per cent.; the principal cause being an early drought. In New England, as a whole, the good quality of 1874 is fully maintained; but in the other States throughout the whole section north of the thirty-sixth parallel, and east of the Mississippi, the quality was much damaged by the rains prevailing in the season of cutting and curing. In all that section, Michigan is the only State which returns an average quality equal to that of last year. West of the Ohio and south of Virginia, Georgia, 97, Alabama, 96, Louisiana, 98, California, 92, and Oregon, 99, are the only States returning a yield below last year's. In the following States, which report an extraordinary increase on last year's crop, the figures for 1874, as compared with the previous crop, are given first, as affording a better indication of the import of those for 1875: Mississippi, 100; 145; Texas, 113; 121; Arkansas, 74; 200; Tennessee, 75; 126; Illinois, 95 and 116; Kansas, 94 and 184; Nebraska, 81; 216. The entire crop, compared with that of 1874, is 3 per cent. greater in quantity.

MAINE.—*Piscataquis:* Not secured in good condition, owing to bad weather. We are learning that it pays to cut hay early. *Aroostook:* Abundant, but much injured in quality by rains in the cutting-season.

VERMONT.—*Caledonia:* Quality extra.

NEW YORK.—*Washington:* The crop materially injured by a large white grub. *Sullivan:* Suffered by drought; not much over half a crop.

NEW JERSEY.—Very light crop, and not gathered in good condition, owing to heavy rains in July.

PENNSYLVANIA.—*Monroe:* Very short, owing to drought. *Bedford:* A larger crop than last year, but much damaged by excessive rains. A good crop of aftermath was secured in good condition. *Montour:* Very light, nearly a failure on upland, owing to drought. *Potter:* A full crop, of excellent quality.

MARYLAND.—*Frederick:* Probably less than 40 per cent. of a crop. *Howard:* A great deal damaged by the protracted wet. *Baltimore:* Short crop of all kinds.

VIRGINIA.—*Carroll:* Suffered very much from wet weather during the haying season. *Powhatan:* Good, both cultivated and wild. *Spottsylvania:* Very short crop, but good in quality. *Floyd:* The quantity reduced by drought, and the quality greatly injured by wet weather. *Dinwiddie:* Late frosts and early drought cut short the quantity; the quality is good. *Wythe:* A much larger crop than last year, but the quality very bad; it being impossible to cure it, owing to the rains. *Chesterfield:* Short. *Highland:* good yield and quality. *Washington:* Very much injured by wet weather in harvest. *Franklin:* Much entirely lost in curing, and the remainder greatly injured.

NORTH CAROLINA.—Good crop. *Davie:* Could not be cut at the proper time, owing to wet weather. *Chowan:* Much damaged by wet weather.

ALABAMA.—*Montgomery:* Our hay, that promised nothing the 1st of August, is now turning out heavy and of excellent quality. *Lauderdale:* Never so great before; principally Hungarian and German millet. *Colbert:* A large quantity saved.

MISSISSIPPI.—*Jefferson:* Splendid.

TEXAS.—*Red River:* Abundant and fine crop. *Collin:* Second crop extra.

ARKANSAS.—*Arkansas:* A good crop; somewhat damaged by rains. *Fulton:* A good crop, but injured by rains.

TENNESSEE.—*Grundy:* Great quantities of wild hay have been saved. *Greene:* Much destroyed by floods and rains. *Putnam:* Extra crop; more saved than ever before. *Cheatham:* Better in quantity and quality than last year. *Rutherford:* Large crop of superior quality. *Wilson:* German and Missouri millet and Hungarian grass were sown in large quantities, and a very heavy yield of hay has been secured. *Robertson:* Good crop. The acreage of German millet and other annual grasses was largely increased.

WEST VIRGINIA.—*Putnam:* Spoiled by rains; no good hay. *Ritchie:* Damaged, at least 25 per cent., by floods. *Summers:* Greater yield than last year, but injured by rains. *Braxton:* Large product, but damaged by the rains. *Monongalia:* The smallest crop in twenty years. *Monroe:* Better than last year 25 per cent., though not quite average.

KENTUCKY.—*Nicholas:* Very light, and put up in a damaged condition. *Meade:* Product large, but very much injured by the rains.

OHIO.—*Pickaway:* The crop equal to last year's, but that was short; the quality the worst for years. *Morgan:* Much injured by wet. *Van Wert:* Badly damaged by wet. *Clark:* Large crop, but much damaged by rains. *Monroe:* Much damaged by the rains. *Noble:* Injured by floods. *Athens:* Greatly injured bythe rains.

MICHIGAN.—*Delta:* A light crop. *Montcalm:* Very poor.

INDIANA.—*Vanderburgh:* Cut late and injured by rains both before and after cutting. *Decatur:* Was good, but damaged, and much of it lost by the rains. *Hamilton:* The quality very inferior. *Warrick:* Fine yield, but large per cent. damaged.

ILLINOIS.—*Piatt:* Prairie-grass was better than usual and a large amount was saved in excellent condition. There was also considerable Hungarian raised and well saved. *Clinton:* Never more nor better. Seed that was sown with wheat last fall, has produced, since the wheat was cut, from one to two tons per acre. *Macoupin:* A larger crop than usual, but saved in an inferior condition. *Saint Clair:* A very fine crop very poorly saved. *Effingham:* A much larger crop than usual, but of very poor quality. *Morgan:* Damaged by rains.

WISCONSIN.—*Dodge:* Good. *Walworth:* In unusual abundance, and of the best quality.

MINNESOTA.—The best in quantity and quality, both tame and wild. *Winona:* Seriously injured in the stack by excessive rains. *Pope:* Damaged by rains. *Steele:* Much injured in yield and quality by rains.

IOWA.—*Story:* Damaged by overflows. *Hardin:* A heavy crop, much damaged in stack. *Harrison:* The floods destroyed great quantities on the bottoms. Some farmers lost 200 or 300 tons in the stack. *Madison:* Damaged by rains. *Emmett:* All wild, but never more abundant or better.

MISSOURI.—*Nodoway:* Prairie-hay never better. *Benton:* Magnificent. *Christian:* Much damaged by rains. *Vernon:* Prairie-hay seeded this year and the crop enormous. *Johnson:* No timothy or clover, but those who had prairie-meadows or sowed Hungarian grass or millet, reaped a bountiful harvest. *Perry:* Abundant in yield but poor in quality, owing to rains. *Morgan:* Badly damaged by rains. *Newton:* Heavy crop, but injured by rains. *De Kalb:* Cheaper than at any time for five years. *Howard:* Hungarian grass and millet are abundant, but timothy was destroyed by the worms. *Cape Girardeau:* Reduced by ravages of the army-worm. *Butler:* A good crop but damaged by rains.

KANSAS.—*Cherokee:* Very fine. *Cowley:* Large and fine. *Osage:* Exceeds any crop before raised. *Atchison:* Fifty per cent. more put up than usual. *Leavenworth:* In excess of any previous year, and of very good quality.

NEBRASKA.—*Cass:* Very much damaged by the rains. *Clay:* More than last year 25 per cent., and of better quality.

CALIFORNIA.—*Placer:* A full crop, of splendid quality.

BUCKWHEAT.

Returns indicate that the entire product equals that of last year. Early frosts reduced the crop largely in Illinois, Wisconsin, and Minnesota, and slightly in the section east of Lake Erie. Except in Wisconsin, 45, the crop does not fall more than 1 per cent. below that of last year in any State in which it is extensively grown. Maine returns 116; Vermont and New York, 99; New Jersey, 100; Pennsylvania, 112;

Michigan, 132. These States grow considerably more than four-fifths of the entire crop. In the Missouri Valley the figures are very high, owing partly to the reduced yield last year. They are, compared with previous crops, for 1874 and 1875, respectively, in Missouri, 65 and 237; Kansas, 43 and 202; Nebraska, 50 and 544. This great increase in product is also owing in part to a largely increased area—20 per cent. in Missouri; 23 in Kansas, and 28 in Nebraska. In Virginia, West Virginia, Missouri, and Nebraska, the silver-hull variety, from seed from the Department, is reported as a decided success, being very prolific in yield; in Madison, Nebraska, "by count, one stalk yielded 3,340 grains, after some grains had been lost off in carrying it to the house." The product was 12 per cent. greater than last year in Michigan, Indiana, and Texas, and 18 per cent. in California.

CONNECTICUT.—*New London:* Injured by frost.

NEW YORK.—*Steuben:* Affected by frost. *Saratoga:* Early sown, very heavy; late sown, badly blasted.

PENNSYLVANIA.—*Monroe:* One farmer sowed 4 bushels on the 5th and 6th of July, and thrashed 331 bushels. *Sullivan:* Never better. *Butler:* Not such a crop in quantity and quality for the last twenty years; all housed in good condition. *Tioga:* Good yield and fine quality.

MARYLAND.—*Caroline:* Cut by the frost.

VIRGINIA.—*Spottsylvania:* A fine crop. *Highland:* The best crop for many years. The silver-hull, from the Department, takes the lead of all other varieties, being earlier, heavier, and more productive.

WEST VIRGINIA.—*Mercer:* Good; the silver-hull preferred.

OHIO.—*Perry:* Plenty, and of good quality.

MICHIGAN.—*Wexford:* Nearly ruined. *Ottawa:* Injured by frosts, early and late. *Emmett:* That sowed late an entire failure. *Lake:* Almost a total failure from frost. *Mason:* Almost all killed. *Muskegon:* Destroyed by frosts. *Montcalm:* A good crop.

INDIANA.—*Decatur:* A good crop. *Marshall:* Extra good.

WISCONSIN.—*Eau Claire:* The light crop owing to frost August 22. *Dodge:* Killed by frost in August. *Jefferson:* A total failure, owing to early frosts.

MINNESOTA.—*Redwood:* Has yielded far better than last year. *Isanti:* A very large percentage damaged by frost in August. *Mille Lac:* Entirely destroyed by frost in August.

IOWA.—*Hardin:* More extensively sown than usual, and yielding well. *Marion:* Very poor crop. *Harrison:* Increased acreage, and fine crop. *Howard:* A failure from frost.

MISSOURI.—*Cass:* The like of the crop was never raised in the county before; average, 15 bushels per acre. *De Kalb:* Raised more extensively than ever before. The silver-hull, from the Department, is a success, giving large returns.

KANSAS.—*Osage:* Exceeds any crop before raised.

NEBRASKA.—*Cass:* A great amount sown, in consequence of the destruction of wheat and corn by the grasshoppers. *Madison:* The silver-hull did *very* well.

SORGHUM.

An extraordinary increase in this crop, over last year, is indicated in the Southern States and in the Missouri Valley. Georgia returns an increase of 40 per cent.; Alabama, 93; Mississippi, 83; Arkansas, 121; Tennessee, 59; Kentucky, 28; Missouri, 54; Kansas, 90; Nebraska, 56. Further north there is a general decrease, though Indiana, 116, and Michigan and North Carolina, 108, are exceptions. While Dearborn, Indiana, reports a very heavy increase in the product, Butler, Ohio, reports that the culture is decreasing every year, and Medina, that it has already reached the vanishing point. The report from Cowley, Kansas, states that at least one-third of a crop, very fine in quantity and quality, will not be worked up; the reason is not given, but apparently because the crop exceeds, by that much, the capacity of provided machinery. Our correspondent in Kane, Utah, reports that fields in that county have yielded as high as 200 gallons of sirup per acre; also,

that he raised, on 1¼ acres, 250 gallons of excellent quality, weighing 11 pounds per gallon, and worth $1 per gallon.

NORTH CAROLINA.—*Hertford:* Above an average crop, yielding well.
GEORGIA.—*Clayton:* Have made more than since the war. *Dooly:* Injured by dry weather.
ALABAMA.—*Calhoun:* The figures for sorghum (800) may seem unreasonable, but it is the first year it has been raised to much extent in this county. I know of three farmers in the same vicinity who have made, in the aggregate, over 3,000 gallons of good sirup; and nearly all the farmers have made their own supply. *Chambers:* The people have made more this year than heretofore. *Conecuh:* Yield 100 per cent. greater than reported in October. *Bullock:* Unusually large crop planted, and the yield improved by the favorable fall.
MISSISSIPPI.—*La Fayette:* The favorable weather of the past month has improved the quantity and quality in an unprecedented degree. *Choctaw:* Not less than 50,000 gallons of sorghum molasses made in the county this year.
TEXAS.—*Red River:* Good; raised to a considerable extent this year; none heretofore. *Upshur:* Twice as much made this year as in any former. *Rusk:* A good deal of sirup made and the culture on the increase.
ARKANSAS.—*Fulton:* Splendid crop, and quality of sirup choice.
TENNESSEE.—*Blount:* Good; more made than for several years. *Monroe:* A heavy crop, and the quality of sirup superior. *Greene:* Good. *Loudon:* Farmers are improving very much in raising sorghum and making sirup. *Rutherford:* An enormous crop. *Wilson:* Much above an average.
OHIO.—*Butler:* The culture growing less and less every year. *Medina:* We have ceased to grow sorghum.
INDIANA.—*Dearborn:* A very heavy increase in the product.
IOWA.—*Marion:* Very poor crop. *Calhoun:* Very poor yield. The stalks seemed to be destitute of the usual amount of sweetness.
MISSOURI.—*Johnson:* More abundant than anticipated, and good molasses is being manufactured.
KANSAS.—*Cowley:* Very fine in yield and quality, but at least one-third of the crop will not be worked up. *Osage:* Exceeds any crop before raised.
NEBRASKA.—*Antelope:* Excellent in quality; average yield, 100 gallons of sirup per acre.

HOPS.

NEW YORK.—*Schoharie:* More than an average crop, good in quality; selling at 10 cents.
WISCONSIN.—*Juneau:* The least profitable of any crop; average price not over 8 cents. *Clark:* Fatally injured by the August frost.
IOWA.—*Jones:* About 25 per cent. of an average crop. *Fremont:* A large crop.
CALIFORNIA.—*Contra Costa:* A yard of 10 acres is the first planting in the county. The plants grew well under unfavorable conditions, and the product is half a crop of choice quality. *Mendocino:* Becoming an important crop; the acreage 50 per cent. increase on last year, and a fair yield.

FLAX.

OHIO.—*Van Wert:* A great crop, but damaged by rain.
ILLINOIS.—*Piatt:* A larger area sown than ever before, but, owing to the excessive rains, little of the crop was harvested, and that in bad condition. *McLean:* The crop for seed was a good deal injured by the long-continued rains. *Boone:* Unusually large acreage, and yield as high as 17 bushels per acre.
MINNESOTA.—*Pope:* Did not yield nor fill well.
IOWA.—*Hardin:* Sown to a greater extent than ever before, but damaged by wet weather.
MISSOURI.—*De Kalb:* A good crop; never raised here before.
KANSAS.—*Bourbon:* Badly damaged by rain, after being harvested.
NEBRASKA.—*Clay:* Did not yield as well as last year, but the acreage was much larger and the product is fully 500 per cent. greater.

Table showing the condition of the crops, &c., on the 1st day of November, 1875.

States.	CORN.		POTATOES, (*Solanum tuberosum.*)		POTATOES, (*Batatas edulis, sweet.*)		TOBACCO.		HAY.		BEANS.	PEASE.
	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.	Product compared with last year.	Average quality compared with last year.	Product compared with last year.	Product compared with last year.
Maine	106	96	80	92	.....	.....	.....	.....	110	99	101	98
New Hampshire	105	102	98	101	.....	.....	110	103	91	102	101	100
Vermont	97	92	107	103	.....	.....	90	100	95	103	97	98
Massachusetts	97	91	132	107	.....	.....	109	110	83	102	100	100
Rhode Island	85	88	115	116	.....	.....	.....	.....	75	97	103	100
Connecticut	106	97	113	101	.....	.....	110	110	79	107	109	100
New York	96	83	107	99	.....	.....	98	95	93	99	99	96
New Jersey	121	101	99	98	103	99	.....	.....	75	94	99	95
Pennsylvania	110	90	112	102	99	91	117	103	94	96	97	97
Delaware	115	100	95	90	105	95	.....	.....	87	90	100	.....
Maryland	121	105	86	94	103	100	110	106	90	94	104	101
Virginia	118	101	108	103	96	97	128	103	95	96	103	104
North Carolina	104	99	100	98	91	94	132	100	104	100	108	101
South Carolina	91	91	95	96	79	94	.....	.....	101	101	100	82
Georgia	92	93	90	96	79	87	100	101	97	99	97	89
Florida	90	93	96	90	87	93	150	110	.....	.....	112	100
Alabama	122	106	91	98	92	94	105	112	96	101	94	105
Mississippi	127	115	110	108	126	114	140	133	145	111	144	145
Louisiana	114	105	104	105	123	106	.....	.....	98	95	100	107
Texas	110	102	109	104	100	100	102	100	121	103	93	101
Arkansas	200	154	144	122	119	105	187	116	200	111	118	154
Tennessee	105	133	119	108	105	102	633	116	126	107	112	134
West Virginia	119	94	129	104	103	96	131	102	101	83	107	101
Kentucky	124	107	180	115	89	91	268	106	105	91	108	107
Ohio	95	83	125	102	90	92	130	88	105	78	94	100
Michigan	106	67	159	108	107	102	89	75	105	100	99	103
Indiana	90	81	141	110	90	90	113	96	107	75	95	94
Illinois	130	104	207	131	90	90	124	91	116	86	99	92
Wisconsin	62	57	128	104	.....	.....	250	79	110	97	85	104
Minnesota	92	89	117	105	.....	.....	.....	.....	105	101	101	94
Iowa	101	86	171	108	102	95	.....	.....	112	98	104	101
Missouri	194	140	175	123	121	104	248	104	112	103	137	117
Kansas	425	200	223	155	138	117	120	113	184	124	157	133
Nebraska	550	175	400	159	119	102	217	100	216	114	181	122
California	103	98	95	95	100	96	.....	.....	92	98	82	85
Oregon	102	98	96	96	.....	.....	.....	.....	97	101	100	100

Condition of the crops, &c., on the 1st day of November, 1875—Continued.

States.	BUCKWHEAT.	FLAX.	COTTON,		SORGHUM.	SUGAR-CANE, (not sorghum.)	GRAPES.	APPLES.	PEARS.
	Product compared with last year.	Product compared with last year.	Indicated product compared with last year.	Indicated product, (lint,) per acre, *in pounds.*	Product compared with last year.	Indicated product compared with last year.	Product compared with an average crop.	Product compared with an average crop.	Product compared with an average crop.
Maine	116	.....	.....	.....	.....	.....	70	43	80
New Hampshire	100	.....	.....	.....	.....	.....	92	78	96
Vermont	99	.....	.....	.....	.....	.....	80	91	97
Massachusetts	75	.....	.....	.....	.....	.....	52	85	95
Rhode Island	.....	.....	.....	.....	.....	.....	103	125	83
Connecticut	101	.....	.....	.....	100	.....	75	26	83
New York	99	100	.....	.....	.....	.....	79	65	74
New Jersey	100	.....	.....	.....	.....	.....	89	57	85
Pennsylvania	112	100	.....	.....	.....	.....	91	45	64
Delaware	100	.....	.....	.....	90	.....	107	85	85
Maryland	105	.....	.....	.....	98	.....	100	79	90
Virginia	111	101	96	190	99	.....	86	43	36
North Carolina	97	93	91	156	108	.....	98	43	31
South Carolina	100	.....	76	140	88	.....	88	41	51
Georgia	98	.....	74	126	140	77	98	76	85
Florida	.....	.....	90	115	.....	87	97	100	.....
Alabama	.....	.....	102	158	193	111	99	80	79
Mississippi	.....	.....	111	212	183	113	103	101	99
Louisiana	.....	.....	100	239	115	109	87	92	92
Texas	112	.....	114	269	117	94	105	111	108
Arkansas	92	.....	135	239	221	.....	112	103	106
Tennessee	98	100	116	142	157	.....	90	70	65
West Virginia	98	93	.....	.....	103	.....	81	20	26
Kentucky	93	101	107	.....	128	.....	65	41	40
Ohio	105	89	.....	.....	97	.....	66	13	32
Michigan	132	105	.....	.....	108	.....	71	62	58
Indiana	112	87	.....	.....	116	.....	74	30	37
Illinois	83	124	.....	.....	93	.....	89	45	54
Wisconsin	45	95	.....	.....	62	.....	81	58	71
Minnesota	83	85	.....	.....	84	.....	87	89	.....
Iowa	109	106	.....	.....	92	.....	94	83	88
Missouri	237	166	102	186	154	.....	77	77	78
Kansas	206	110	.....	.....	190	.....	71	36	38
Nebraska	544	149	.....	.....	156	.....	79	75	50
California	118	100	.....	.....	.....	.....	97	70	73
Oregon	100	86	.....	.....	.....	.....	120	93	89

EXTRACTS FROM CORRESPONDENCE.

SMALL POTATOES FOR SEED.—*Elizabeth City, Virginia:* I have made an experiment the past season, the result of which, I think, explodes the theory that small potatoes for seed will only return a *small crop of small potatoes.* Cut seed planted under our burning July sun is sure to rot, while the use of large whole potatoes involves considerable expense. A square of ground containing 2,500 square feet, from which a crop of cauliflower had recently been taken, was prepared and planted July 12, with white Peachblow culls. Few of them, if any, were larger than pigeon's eggs. As is always the case here, even with the best seed, some failed to grow, say 5 per cent. The plants began to show themselves early in August, at which time heavy rains set in and so continually saturated the soil that no working was possible until September 5. Then a plow was run through the rows and a dressing out with the hoe was given them. Soon after the vines so covered the ground that further cultivation was impossible. The patch was harvested October 30. The product was a fraction over 20 bushels of the largest and finest potatoes ever grown in this section. With the exception of 2½ pecks of small potatoes, about the size of the seed sown, all are large. Fully one-half average one pound each in weight, and the remainder are of full marketable size and fine appearance. This yield is at the rate of 350 bushels per acre. A heavy coat of barn-yard manure was applied to the previous crop, but no additional fertilizer was used.

MAST.—*West Virginia, Braxton:* The corn-crop is supplemented at least one-third by the very large acorn-crop. It is large in quantity and very good in quality. Hogs are getting very fat in the woods, and the crop will probably feed all the hogs left in the county, after butchering, all winter.

Indiana Hamilton: A fair crop of mast.

DROUGHT.—*Kansas, Wabaunsee:* There is a great drought in this section; no rain to amount to anything since July. Cattle are being driven five and six miles to water. If winter should set in without rain, our condition would be alarming, for over one-half of our population would be entirely without water.

HOGS.—*West Virginia, Jefferson:* About 100 hogs have died of cholera within the past six weeks; about a dozen have been stolen from the pens during the past month, and 700 or 800 have been driven from the county, mostly at 7 cents per pound, gross. Nearly all went to the Hannisville distillery near Martinsburgh, Berkeley County.

Ohio, Montgomery: There has been a serious loss of hogs by cholera. Some farmers have lost all their stock. The usual remedies have failed to save them.

Indiana, Bartholomew: The cholera has played sad havoc with our hog-crop this season. It will not exceed half that of previous years. *Fayette:* Hog-cholera has been prevailing, and is still, to an alarming extent. Many farmers have lost $1,000 worth of hogs. Hogs of all ages have died. The remedies heretofore thought to be good have failed. *Henderson:* Hogs have all died, so that there will not be enough in the county for our own meat. *Johnson:* Hogs are dying of cholera and other diseases to an alarming extent. It looks as if the farmer would have to turn his attention to some other kind of stock. *Lawrence:* Hogs are dying with the cholera at a fearful rate. *Pike:* Our hogs have been

and are dying with cholera, in consequence of which the crop will be short.

Illinois, Fulton: Hog-cholera is prevailing to an alarming extent. *Clinton:* About one-third of our hogs have died of cholera. *Pike:* Hog-cholera bad. *Vermillion:* A great deal of hog-cholera in different parts of the county. *Hancock:* Hog-diseases more than usually present. *Scott:* A great many hogs have died with cholera.

Wisconsin, Richland: Fat hogs have been mostly bought up and driven out of the county.

Iowa, Marion: Hogs are extensively diseased. A very large number have died within the last three months. Many farmers have barely enough left for domestic use. The disease is called hog-cholera. I think it a disease of the throat and lungs. *Washington:* A few hogs have died with cholera.

FINE MERINO WOOL FOR A DIME.—*Nebraska, Saunders:* I send herewith a sample of Nebraska wool from sheep unhoused and unwashed; such as can be grown in any portion of the State at a cost of 10 cents per pound, and in the western portion for less. Will Congress continue the present wool-tariff until this great national industry becomes fully established throughout the West? Millions are involved in the solution of the question.

RESULT OF SEED-DISTRIBUTION.—*Wisconsin, Outagamie:* There will be hundreds of acres of Fultz wheat sown in this county next year. There were over 700 bushels raised this season, all from the 4 quarts sent me by the Department four years ago. The Schonen oats are now sown by nearly all the best farmers in the county. They average at least 10 bushels per acre more than any other variety. So it is seen that the introduction of new seeds is doing a great amount of good, especially for field-crops. *Clark:* The Fultz wheat furnished by the Department is growing into general favor. It makes about two weeks earlier than the other varieties. The different varieties of oats and barley furnished by the Department seem well adapted to our soil and climate.

Kansas, Woodson: At our district fair (including four counties, and open to the world,) the Westchester corn from the Department bore away the premium; also the silver-hull buckwheat took the first premium; it yielded 45 bushels per acre; also the red (Etampes) pumpkin. It is large, rich, sweet, and the grain solid and fine as that of a squash. *Allen:* From seed sent out by the Department were produced a mammoth squash weighing 115 pounds, and a total on one vine of 1,096 pounds; also potatoes weighing 2 pounds each; beets, 9 pounds; turnips, 14 pounds; cabbage, 36 pounds.

Nebraska, Thayer: The winter-rye sent from the Department, in hardiness and yield, beats anything in these parts.

Virginia, Grayson: From seed sent to me by the Department last spring, I have raised large bright yellow pumpkins, weighing 112 and 117 pounds apiece.

North Carolina, Forsyth: Mr. A. Fagle, from 1 bushel of Clawson wheat raised 41 bushels.

Arkansas, Saint Francis: The Westchester yellow-corn sent from the Department last spring is a grand success; I raised some that measured 13 inches to the ear. It is some three or four weeks earlier than our ordinary corn, and yields as much per acre as the very best. *Benton:* My Willis corn yielded 40 bushels per acre; common white, 55; Pennsylvania yellow, 65.

Tennessee, Macon: The early yellow corn forwarded to me by the Department is the largest field-corn within my knowledge.

OUTSTRIP THE BEETLE.—*New York, Montgomery:* In many of the potato-fields beetles have been found in the hill this fall, ready for the next year's crop. In view of this would it not be well for the farmers to plant the early kinds as early as possible? They might thus avoid destruction by the beetles.

Maryland, Cecil: The early planted yielded tolerably well where care was taken to destroy the bugs; the late planted and late varieties were more seriously injured. The true plan is to plant early and early varieties; they then ripen before the later swarms of beetles make their appearance.

MINOR CROPS.—*Pennsylvania, Bedford:* Broom-corn is being introduced and promises to be a profitable crop. The yield is good. *Beaver:* The farmers have grown a larger breadth of beets and turnips than usual, and have succeeded well.

Maine, Cumberland: The culture of cranberries in this county is increasing, but the yield this season is small.

Florida, Manatee: Oranges are in fine shipping condition. *Putnam:* Oranges in product are 125; in soundness for shipping, 150. Bananas, compared with last year, are 150 in product and 125 in quality.

Ohio, Medina: Onions are a drug in the market at 40 to 45 cents.

Wisconsin, Walworth: All root-crops have done well.

Iowa, Johnson: Timothy for seed is a staple crop in this county. Five to six bushels per acre are generally harvested and the hay is good for feed after thrashing. It pays as well as any other crop. *Scott:* Onions are raised very extensively in the county, and this year have been one of the most profitable crops, where suitable land could be had. The yield is from 200 to 450 bushels per acre.

Missouri, Cass: Over 20,000 bushels of castor-beans have been delivered already, and there are at least 5,000 more to be delivered. *Saint Clair:* Castor-beans have been a profitable crop this year. *Vernon:* A large acreage and good yield of castor-beans, averaging 15 bushels per acre.

Kansas, Mitchell: An unusual acreage of turnips has been grown. All vegetables are of an enormous size: beets, 12 inches long and 8 inches in diameter; pumpkins, weighing one hundred pounds; corn, 17 feet high, with two and three good ears on a stalk; Peerless potatoes, 400 bushels per acre. Tree-growth is also remarkable: cottonwoods grown from last year's seedlings have made 7 feet; seedling apples, 3 feet 8 inches; hedge from seed, about the same.

LARGE YIELD OF WHEAT.—*Pennsylvania, Lancaster:* I raised 600 bushels of wheat on 32 acres, (18¾ bushels per acre,) and this is a fair average of the county.

DEPARTMENT REPORTS.—*Arkansas, Prairie:* The Department of Agriculture should be so enlarged as to put a copy of the report in the hands of every farmer on payment of the cost of publication. I have very many more applications than reports to distribute, and I loan my own copies until they are almost worn out.

GRASSHOPPERS.—*Texas, Gillespie:* The grasshoppers arrived two weeks since and are depositing their eggs. *Uvalde:* Grasshoppers appeared here from the north in great numbers on the 25th of September. They seem southward-bound though they are checked up by a heavy south wind. Coming to the ground, they immediately commence feeding on

anything green, though they prefer beans, cabbage, and other soft vegetable varieties. For the last few days they have been very busy in depositing eggs in the ground. They prefer sandy loam for that purpose. In places, the earth is literally filled with eggs to the depth of one inch. *Bandera:* We have had myriads of grasshoppers for a month. They made their appearance two weeks earlier than formerly.

Missouri, Jefferson: The meadows are literally covered with small red grasshoppers. *Franklin:* Grasshoppers are damaging wheat in some places. *Moniteau:* The destructive grasshopper, *Colopterus spretus*, is scattered in small numbers all over our county, and great fears are entertained that they are depositing eggs.

Utah, Box Elder: The grasshoppers have come from the north in clouds and are depositing their eggs in various parts of the county.

WHEAT-PLANTING.—*Pennsylvania, Beaver:* The wheat sown this fall is not making the progress in growth it should. The weather of September was unfavorable. *Indiana:* Prospect that a greater area of small grain will be sown this fall than ever before. *Elk:* A very great breadth sown.

Virginia.—Spottsylvania: Sowing has commenced, and the ground is in fine condition. *Caroline:* The ground is in excellent condition. *Page:* Seeding is progressing finely.

Texas.—Coryell: A larger acreage than ever before will be planted. *Dallas:* The acreage will be increased 25 per cent.

Arkansas.—Arkansas: Many have sown, and the plant looks beautiful.

Tennessee.—Giles: A large acreage will be sown. *Loudoun:* Being planted in better condition than usual. *Hancock:* The weather is very favorable, and a larger acreage than usual is being put in. *Henry:* September was so dry, that no stubble-land could be plowed. This will render wheat-sowing universally late, and much will be sown in bad order.

West Virginia.—Marion: The ground is in fine order, and more than average acreage is being sown. *Wood:* About the usual amount has been, and some more will be, sown.

Ohio.—Franklin: It has been a very hard time for farmers to put in their wheat, and the usual quantity is not yet in. *Montgomery:* The prospect for wheat is moderate; the dry weather, since the floods, has baked the ground badly.

Indiana.—Ripley: Less than usual will be sown. The want of good seed and very dry weather make it very difficult to seed. *Elkhart:* Wheat has been sown on good moist soil, has germinated well, and has a good start. *Brown:* Wheat is not coming up well. *Marion:* The ground is very dry and hard, which renders seeding difficult, and leaves the grain sown in bad condition. *Gibson:* Seeding progresses finely.

Illinois.—Monroe: Stubble-land is so dry that farmers dislike to sow. In many cases they are leaving the rolled fields to wait for showers. *Scott:* Less has been sown than for several years. *Marshall:* But little wheat sown this fall. *Massac:* It is too dry for breaking up land for wheat.

Missouri.—Jefferson: Owing to the dry weather no wheat has been sown yet. *Boone:* There will not be more than two-thirds of an average crop sown. The ground is too hard to plow. *Camden:* Owing to dry weather very little has been sown, and the indications are that there will be a falling off in area of 25 per cent. *Nodaway:* The new-sown wheat is 110. *Crawford:* Very dry, and but little has yet been sown; not over one-third of last year's area will be sown. *Perry:* It is

too dry to prepare for seeding. We have not yet begun, when we ought to be nearly done. *Moniteau:* No rain since the last of July, and very little sown. *Franklin:* No rain for six weeks. The ground is so hard that farmers cannot plow; 20 per cent. less than average will be sown, and that late. *Jasper:* No rain for two months, and wheat-sowing nearly suspended. *Putnam:* Late rains have made the ground in good condition, and a large area is being plowed for fall crops. *Pettis:* The ground is too hard to break up, owing to the extremely dry weather, and there will not be nearly last year's amount sown.

Kansas.—Woodson: The area will be double that of previous years. *Bourbon:* Dry weather makes it bad for sowing wheat. *Jackson:* More sown than in any previous fall. *Cloud:* The seeding is all done. *Labette:* Chinches have injured the wheat after it came up, by killing some. *Lyon:* Dry; the wheat not growing, and much of it not up. The prospect for a crop next year is growing less every day, but that which was drilled in early is growing and looks well. *Cowley:* A full crop is being put in. *Shawnee:* A large acreage sown.

Pennsylvania.—Bureau: An increased breadth sown, but the wheat has not grown as it should. *Lancaster:* Thickly and well set, and looks very fine. *Columbia:* Planted in good condition and looks very fine.

Maryland.—Harford: A greater breadth being put in than usual. At least three-fourths of the farmers prefer drilling. The fine weather causes the crop to look well. *Queen Anne:* An unusual breadth seeded. The almost entire failure of the oat-crop for several years past has induced the farmers to put nearly all their corn-land into wheat. This has been seeded rather late, but fertilizers have been used freely, and abundant rains have put the crop in fine growing condition. The Fultz wheat has grown in public favor rapidly, and all who could obtain seed have seeded largely with it.

Virginia.—Caroline: The weather has been favorable for seeding. *Spottsylvania:* A fine fall for seeding wheat. A greater breadth than usual sown, and looks well. *King George:* Farmers have generally finished sowing. The wheat comes up well. *Middlesex:* The weather is remarkably pleasant and fine, and efforts are being made to seed heavy crops of wheat. *Frederick:* The wheat sown from the 20th of September to the 1st of October was never exceeded in promising condition.

North Carolina.—Nash: More seeded than usual. *Caswell:* Fall remarkably favorable for seeding, and a full average sown.

Georgia.—Harris: The farmers have planted largely. *Troup:* Will be more sown this year than last. *Barton:* Early-sown wheat is looking well. *Carroll:* Planters will sow largely; more than usual. *Douglas:* The farmers are sowing a great deal of wheat. *Jefferson:* The ground is dry as an ash-heap; in condition for nothing but sowing wheat, oats, &c. My experience is that the cereals all do better sown in dry weather. More small grain will be sown this fall than for a number of years.

Alabama.—De Kalb: Preparations are being made to sow a wide area of wheat.

Texas.—Dallas: Planters trying to sow. The seeding will be much retarded for want of rain. *Cooke:* The ground so dry and hard that wheat-sowing is suspended. *Uvalde:* Wheat-sowing deferred up to date, waiting for the disappearance of the grasshoppers. *Bastrop:* Will be a greater breadth sown than last year. *Hunt:* Too dry to sow wheat.

Arkansas.—Baxter: So dry that farmers have not sown any wheat, and cannot till it rains. *Boone:* So dry that no wheat has been sown

yet. *Prairie:* The best season ever known for sowing grain. *Izard:* No rain since August, which has greatly retarded the sowing of wheat and rye. *Marion:* The extremely dry fall unfavorable to sowing wheat.

Tennessee.—Knox: The ground better prepared than heretofore; better seed selected, and more being sown. The past year demonstrated clearly the marked value of the drill and fertilizers. *Fayette:* The acreage is being increased considerably this fall. *Montgomery:* Grasshoppers are eating the early-sown wheat, which injures it very much. Farmers unusually backward in putting in wheat; dry weather. *Giles:* A large acreage being seeded.

West Virginia.—Marion: Larger acreage than usual sown; has come up, and looks remarkably well. *Wood:* Looks finely.

Kentucky.—Hardin: Looks badly, on account of the dry weather; grasshoppers have eaten a good deal.

Ohio.—Miami: Wheat-fields are looking green and in the best condition. *Vinton:* September and October dry. The ground is hard; wheat backward and looks bad. *Montgomery:* The seeding has been later than usual, owing to the bad condition in which the summer-rains left the ground. It will require a favorable November to make the growth large enough to stand the winter. *Clark:* Much ground has been seeded, and looks well. *Mercer:* Making a splendid start; never looked better. *Crawford:* Looking well. *Fairfield:* Growing wheat rather backward. *Harrison:* Starting well.

Michigan.—Washtenaw: Looking well. *Charlevoix:* October was too cold and wet for late-sown winter-wheat.

Indiana.—Grant: Early-sown wheat looks well. *Madison:* Young wheat looks rather poor, having no rains and no warm weather. *Posey:* Our farmers are sowing very large crops, using the most approved plows and drills. *Dubois:* A large breadth is sown, notwithstanding the weather was very dry in breaking-time. A large portion of it is drilled. *Lawrence:* An average acreage sown, which looks exceedingly well. *Pike:* A large acreage sown and looks well.

Illinois.—Pike: The weather is dry and the wheat small. *Crawford:* A dry fall and the prospect for a wheat-crop next year very poor.

Wisconsin.—Clark: The area of winter-wheat will be much larger than last year. *Crawford:* The prospect is poor, on account of late sowing, wet, and cold. *Richland:* Less sown than usual.

Missouri.—Camden: Indications that not one-half as much will be sown as last year. *Franklin:* Continued drought has caused farmers to be very late in sowing. Grasshoppers are damaging wheat in some places. *Moniteau:* Not one-third of the usual amount sown. No rain since July 31. *Benton:* The seeding this fall presents a fine appearance. *Saint Francis:* Very little sown owing to dry weather, and what has been sown and come up is being destroyed by the Hessian fly. *Maries:* None of any consequence sown; set in dry the middle of August, and no rain yet. *Cape Girardeau:* The fall too dry for the wheat-crop; many farmers still sowing. *Clay:* A drought has prevailed for two months, very trying to the small grain seeded, but a rain last night will make all right.

Kansas.—Jefferson: Looking well, though the weather is almost too dry. *Clay:* Never looked better. *Lyon:* The dry weather hard on wheat; much of that sown has not sprouted. *Marion:* Grows very slowly; very dry since August 1. *Leavenworth:* Does not grow well for want of rain.

California.—Stanislaus: Farmers have planted two-thirds of their grain, and a fine rain gives them a good prospect.

Utah.—Box Elder: As it has been proved that fall-wheat will grow faster than spring-wheat, and be out of danger of the grasshoppers before they become developed for work, the farmers are striving to put in much this fall, but the process is difficult, as we have had no rain for a long time.

AGRICULTURAL VICISSITUDES.—*Maryland.—Howard:* Our people are advancing rapidly. We are putting up many new houses and other barn-buildings, and are materially improving our farming implements and processes. The politicians are beginning to act with more honor and patriotism, and with their help we shall have an agricultural millenium in Howard County.

North Carolina.—Beaufort: Until this year this county has imported large quantities of hay from the north. This year it has imported none, and the quantity of long forage, mostly fodder and sheaf-oats, now on hand, is more than sufficient to supply all demands until the next crop comes in. *Duplin:* A larger breadth of wheat will be sown in this county than ever before, and our farmers are generally returning to the system of raising their own supplies of every kind. If the low price of cotton continues, this county will sell pork and corn, instead of buying, within two years. Pork at $8 per hundred, the present price here, is a much better business than cotton at $12 per hundred.

South Carolina.—Barnwell: With short crops and short prices we are to have a hard time, but it may be beneficial in *driving* our farmers to the production of what they now import, and at less cost. *Marion:* The outlook for the farmers is gloomy; a short cotton-crop and a low price for the staple, while 35 per cent. of the hogs have died of cholera. *Georgetown:* Great mortality among hogs and poultry throughout this county during the past summer. The extent of the loss among hogs could not be ascertained while they were pasturing in swamps and woods, but now that they are looked for to put in potato-fields, &c., they cannot be found. In many cases from $\frac{1}{4}$ to $\frac{4}{5}$ of the number are missing.

Georgia.—Harris: The farmers have lost largely this season, and much suffering is anticipated another year; but they have planted largely in wheat, rye, oats, and barley, and the prospect is good. *Clayton:* Our prospect is better than it has been since the war. We have planted more corn, and it has been better cultivated; we have also made better crops of wheat, and will fatten more meat. We shall be nearer self-sustaining than usual, though the price of cotton is low, and I suppose will be, until our people learn not to plant so much, to the neglect of other crops which we ought to raise. *Upson:* Cotton is selling below the cost of production. This will leave the mass of planters and farmers in debt, with little or no hope of extricating themselves; all the result of the blind policy of planting cotton to the exclusion of home-supplies. *Mitchell:* Cattle and sheep are healthy and in fine condition, but only a few hogs are left by the cholera. The short corn-crop will necessitate the buying of both corn and meat by our planters, very few of whom will be able to pay cash, owing to the short cotton-crop and the unremunerative price. Hence, they must pay big rates of interest for acceptance by the commission-men. The outlook is not in the least encouraging.

Alabama.—Greene: The farmers are in a fair way to prosper. We will import no corn and less meat than usual. The cotton-crop, though the price is low, will almost pay the county out of debt. The freedmen have more to show for their labor than any year since 1865. *Henry:* Our

people are fast awakening to the importance of raising all our supplies of every kind as nearly as possible—corn, small grains, bacon, and beef—and not devote so much land, time, and labor to cotton-planting, to our own injury. *Marengo:* A favorable change in our mode of planting is apparent this season. Cotton and corn are not the only products raised; oats, field-peas, sorghum, and sugar-cane are attaining the importance of crops. A wide-spread interest, also, is shown in improved cattle, sheep, and hogs. We can raise almost everything we need to feed and clothe ourselves, while we are blessed with a climate healthful and delightful. This portion of Alabama cannot be surpassed in the world as a farming country. *Russell:* More grain, especially rust-proof oats, will be sown this fall than ever before. The low price of cotton has forced the majority of farmers to change their smoke-houses and corn-cribs from the West to nearer home. The general topic is, more grain and less cotton. The bulk of the latter has already been gathered and sold; yet times are tight and tighter, and meat is scarce and scarcer. Hundreds of families, both white and black, have not had a pound in a week—some, in months; rabbits and opossums are all the meat they get.

Mississippi.—Lowndes: An abundant supply of corn has been housed, and in many places a surplus. There is a great demand for hogs and stock of all kinds to breed from; indications are hopeful. There is a general determination to diversify products, plant less cotton, and become self-sustaining. Cotton is below the cost of production, and necessity will force the planter to raise home-supplies. *Choctaw:* The farm-stock numbers about 30,000. There appears to be a great improvement in every branch of agriculture; also in procuring new and improved farm-implements, in reducing expenses, and bestowing better preparation and cultivation on a decreased acreage. *Kemper*: There is a greater disposition to diversify crops. More small grain is being sown, particularly wheat.

Texas.—Falls: It is an unmistakable fact that cotton is ruining us. Our people *must* try mixed husbandry, or all go into bankruptcy. *Harrison*: There is a disposition here to sow grain, and to plant less cotton and more corn. Many farmers have already sown wheat, oats, barley, rye, &c., for pasture next spring. This is a move in the right direction, for almost anything will beat cotton, as the price now is.

Arkansas.—Prairie: The drought of last year has been of great benefit to our State in turning the attention of farmers to other crops than cotton and corn. Nearly all our farmers will be out of debt with the proceeds of this year's crops. Quite a number of our farmers have bought steam-power for gins, and several new steam gins and mills have been built. *Saint Francis:* Farmers are intending to abandon cotton and go into the production of small grains, in order to avoid bankruptcy. *Sebastian:* Our success with wheat, oats, and barley has very much encouraged us to go ahead with further experiments. There will be less cotton and corn and more small grain planted in 1876 than ever before.

Ohio.—Medina: We have ceased to grow sorghum; I hardly know why. The extent in the western reserve counties in 1873 was as follows: Ashtabula, 9 acres; Lake, 1; Medina, ½; Portage, ⅝; Mahoning, 7; Geauga, Cayuga, and Lorain, none. According to the State statistician, we have decreased from 4,696,089 gallons of sirup in 1866 to 692,314 in 1873. The southern and some of the new western counties continue to grow it in considerable quantities.

Michigan.—Sheboygan: This county is new, but is being rapidly settled

with thrifty and active farmers. Some three hundred families have moved in within the past year.

Indiana.—Posey: The great flood along the Wabash Valley and tributaries swept away fully one-half of our corn-crop. But the farmers have gone to work, replaced the fences, cleared out their fields, and say they will raise the next season, the Wabash permitting, the largest corn-crop ever grown. They are sowing very large crops of winter-wheat, and using the most approved plows, drills, and other modern labor-saving machines.

Illinois.—Livingston: At this season last year a great scarcity of all grains existed; now we have plenty, and to spare. What we have to buy is low; what we have to sell brings a fair price. This is about as near the millennium as the average farmer expects to get. *White:* The outlook before us for the coming winter is dark. But all our stock that we could spare, except horses and mules, has been sold off and shipped to the more fortunate localities, from whence we will ship corn for our remaining stock.

Wisconsin.—Jureau: The hog-crop will pay better than any other farm-production in this county; price 6 to 7 cents, live weight. Hops are the least profitable of any crop; the average price in this market is about 8 cents, which is not more than half the cost of producing. *Clark:* The whole season has been very uncomfortable and unprofitable. Although a larger area was planted and sown, the yield has been far below the average. Still, the farmers are not at all discouraged. They are making preparations for a much larger planting next spring. The area of winter-wheat will be much larger. *Crawford:* Times are good for farmers out of debt, though hard for those having demands to meet. Wheat is worth $1 per bushel; corn, 50 cents; barley, 75 cents; oats, more than a full crop, 25 cents; potatoes, a big crop, 25 cents; cattle, $2 to $3, gross; hogs, $6.50 to $7, gross; sheep, gross, $2.50 to $3. *Shawano:* This is a new county, mostly settled by Germans. Among its products in 1875 were about fifty tons of maple-sugar and about one thousand bushels of blueberries marketed.

Minnesota.—Nobles: We have produced the past season the best crops ever raised in the county, both in quantity and quality. *Martin:* Cannot report in comparison with last year, as we produced nothing of any account, owing to destruction by grasshoppers. This year all kinds of crops raised here are generally good. Broom-corn, a specialty with some of our English farmers, was of first quality, but suffered much for want of help to save it. Help could not be secured. Wheat averaged 20 to 22 bushels per acre. It was but little damaged, about half being No. 1. *Steele:* The season has been a good one for farmers. All kinds of grain are turning out a larger yield, and less injured by the August rains than expected. Dairy products have yielded well, and bear remunerative prices. The end of the season finds the farmers in better condition than for three or four years.

Iowa.—Guthrie: Our people are not ready for winter, and are behind every way. There is too much speculation, and not enough good farming; too many mortgages on the farms, and not enough manure and clean culture. Ruin is coming to hundreds of homes in this way. *Des Moines:* Since the 20th of May, about twenty-six inches of water has fallen. While this has damaged our crops very materially, it has stimulated tile-draining to a wonderful degree; so that good may yet come from an apparent evil. *Jasper:* Iowa has less corn by 15 per cent. than at this date last year. The high price of corn during the year, and the

failure of the wheat-crop, caused the old corn to be sold out closely, especially as a large new crop was in prospect.

Missouri.—Saint Clair: Our people are hauling more produce to the railroad, at various points, than ever before: castor-beans, broom-corn, flax-seed, onions, potatoes, and cabbage. The two years of failure have recuperated the soil, and caused the people to plant more kinds. Hence every one has something besides corn to sell. *Johnson:* Nearly all the pear-trees standing one year ago have since died, or are badly blighted. The cause is difficult to discover. The autumn has been propitious for the farmer. No excessive rains have fallen to injure the fodder of corn in the shock, which is our main dependence as forage for the winter. Even corn cut entirely green is now thoroughly cured. All vegetables that are seasonably late are abundant, and of excellent quality. *Clay:* Since the destruction by the grasshoppers, crops of all kinds have grown beyond precedent, as to quantity and quality. Food for stock is abundant, and pastures abound with rye instead of blue-grass. *Laclede:* Although the floods destroyed much corn, wheat, oats, &c., on the river-bottoms, yet almost all kinds of crops are good. The uplands are so much better than common that the whole crops are placed above average and the prospects of the county are far better than last year.

Kansas.—Miami: The failure of wheat, oats, timothy, clover, flax, &c., by ravages of the grasshopper, caused the planting of an extraordinary breadth of corn, potatoes, beans, buckwheat, and vines of all kinds. Then the finest season for the growth of these crops has brought our farmers bountiful harvests of them. There was a little too much rain for sweet-potatoes, but the season was just right for Irish potatoes and corn. Ears of corn 12 inches in length, and well filled with the most solid grains, are quite common. The potato-crop is wonderful for extent, quality, and size, worth 15 cents in the market here. The crops of pumpkin and squash are great. Of the Chilian mammoth squash, many weigh 100 pounds, and the premium one at our county fair weighed 143. Our people are well supplied with everything but "greenbacks." *Nemeha:* Last year we had almost nothing; this year we have a great abundance. *Cowley:* Our corn-crop this year, averaging 35 bushels per acre, will yield 1,250,000 bushels; wheat, 20 bushels per acre, 500,000 bushels; oats, 40 bushels per acre, 250,000 bushels. *Graham:* All our crops were destroyed last year, while this year they are all good. *Osage:* Last season we had nothing worth noting; this season our crops are large beyond any precedent.

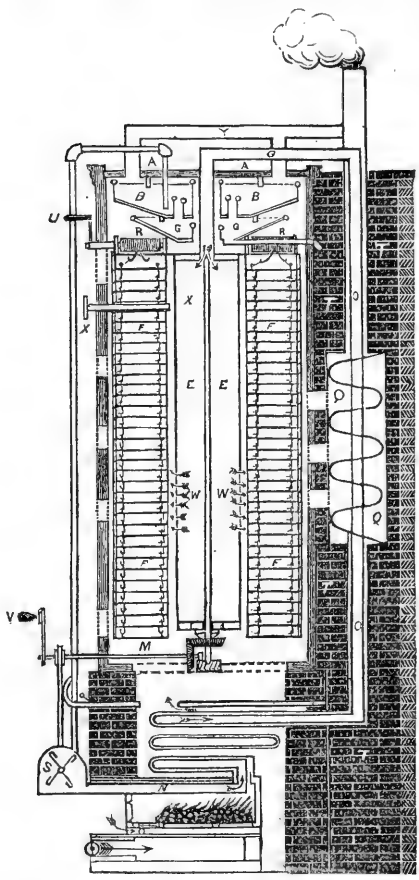
Nebraska.—Dixon: Neither corn nor potatoes were raised last year. The whole crops were destroyed by grasshoppers. This season we have the best crops ever raised.

THE DESICCATION OF FRUITS AND VEGETABLES.

BY THE COMMISSIONER.

There is, perhaps, no subject which at this moment is commanding more attention, and none which possesses more substantial interest to the agriculturist, than the process for the preservation of food. Of all the vegetables which supply the wants and provide for the comfort of men and animals, there are but few that do not soon decay and are lost. And perhaps, of all the fruits and vegetables that grow, it would be

safe to say that one-fourth at least become useless and perish, because there are no means at hand for their preservation. From seventy to ninety per cent. of them all consists of water, which is the cause of their decay.



In all time the desiccation of fruit and vegetables has been deemed an industry of some importance and of great necessity; but it is carried on by a process so slow, so uncertain, so inefficient, and so unprofitable, and, withal, so unsatisfactory in its results, because of the oxidation of the substance dried, of its loss of some of its valuable constituent parts, and especially of its exposure to vermin during the long process of drying. It is, therefore, a matter of congratulation that the minds of ingenious men have been successfully applied to the invention of machinery by which any species of fruit or vegetable may be so effectually, speedily, and cheaply desiccated as that it may be kept for any time and in any climate, without decay or injury.

Within the last few years three several machines have been patented, each of which professes to have attained the desired object—a perfect desiccation of fruits and vegetables.

In 1861, letters-patent were granted to Francis H. Smith, of Baltimore, "for improvements in the drying and preserving of fruits, vegetables," &c. In 1870, like letters-patent were granted to C. Alden, of New burgh, N. Y. In June, 1875, letters-patent were granted to A. J. Reynolds, of Baltimore, for a machine called "Reynolds's improved evaporator."

It may be truly said of all these, that it is their object, their principle, their plan, and mechanical operation, by the application of artificial heat, to drive off all the water which is contained in the matter subjected to them, without depreciating in any degree its valuable properties; so that when the fruit or vegetable is again subjected to water, it is restored essentially to what it was before it went into the machine. It is doubtlessly true that the slow process of drying by exposure to the sun and air greatly oxidizes and discolors the material, and doubtless deprives it, to some extent, of its saccharine constituent; while the oven, which is used for the same purpose, is somewhat irregular in its action, not effectually drying some and scorching some, while it also deprives the material of some of its valuable constituent parts. The merits of the machines lately invented, I believe, consist in the application of artificial heat to the material to be desiccated, within a confined space,

whereby it is speedily dried, and not subjected to the escape of any of its constituent parts, except that of water. The fruit is preserved in its purity, to be restored to its original condition when again subjected to water.

It is not my province to exercise any judgment, nor do I purpose to express any opinion of the relative merits of these patented machines, but only to communicate to the agricultural community an idea of the mechanical structure of them, that they may judge of their mode of operation, their efficiency, and their practical usefulness.

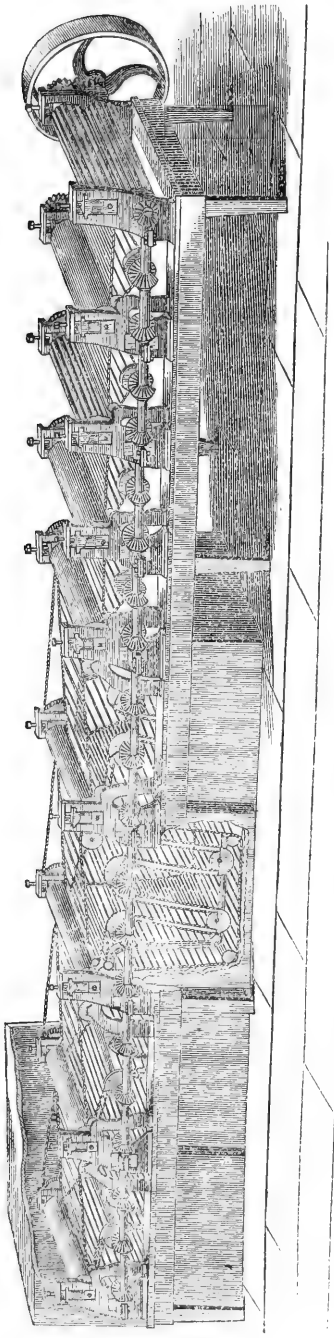
Of the first two named, Alden's and Smith's, while I readily observe the difference in their mechanical operation, I confess I cannot perceive any difference in the principle which governs the application of heat, or the result obtained. Each consists of a vertical square box of wood, lined with galvanized iron, varying in height from fifteen to five and twenty feet, in which is hung a series of shelves, about nine inches apart, upon which is placed the fruit or vegetable to be dried, and at the bottom of which artificial heat is applied. These shelves, made of wire or of any perforated material, are moved up and down, in one case, by an attachment to an endless chain, and in the other, by a screw. The green fruit is placed upon these shelves at the bottom, or at the top, as the case may be, and taken out at the bottom or top when sufficiently dried. The shelves are moved up and down by a crank, the speed of which is governed by the necessity of the case and the judgment of the operator. Each of these machines is large or small as the exigencies of the case require a greater or less amount of work to be done. And their cost is in the same proportion, varying from one to five thousand dollars.

The machine of A. J. Reynolds differs essentially from the others in its application of heat. Its shelves of fruit, operated also by a crank and cog-wheels, have a rotary motion; the heat is introduced at the bottom of a cylinder, which may be of a size proportioned to the amount of work to be done, within which rotate the fruit-shelves upon a spindle which supports them, and in the center is a hollow drum, whose only office is to occupy space, and thereby confine the heat to the material to be dried. Unlike the machines of Alden and Smith, before described, the vapor created by the heat and process of drying is not allowed to escape directly at the top, but is there conducted into condensing-tubs of water and flows off gradually. The shelves of fruit, when dried, are all removed at once by opening a door of one side of the outer cylinder. Heat is also introduced into the side of this machine through the medium of the smoke-pipe, which passes up alongside of the outer cylinder. It is claimed for this machine, that it consumes less fuel and diffuses the heat more generally and continuously than any other; that it may be used of so small a size as to be adapted to the top of a common stove, and from such a size up to the largest, which is 10 feet in diameter and 16 feet high. The price varies from fifty to twelve hundred dollars.

When we consider the great importance of the desiccation of fruit and vegetables effecting the saving of so large a portion which is now lost; for keeping them for any length of time, and in all weather and climates, and in view of their transportation, (their weight is reduced at least three-fourths,) too much importance cannot be attached to the subject.

I would have been pleased to have furnished drawings of each of these machines, whereby they might have been better understood, but only that of "Reynolds's Improved Evaporator" was at hand, and that is herewith given.

FACTS FROM VARIOUS SOURCES.



A NEW RAMIE-MACHINE.—At the late Mechanics' Institute fair in San Francisco, Mr. C. C. Coleman, of Honolulu, Sandwich Islands, exhibited a machine of his invention for the preparation of the fiber of the ramie or China grass. From the description given, the process appears to be very simple. The plant, freshly cut at its full-ripe stage, is passed through a series of rollers, being carried along by moving wire screens. It dips into tanks filled with steam, hot water, and bleaching-chemicals.

The rollers crush the plant and squeeze out the glutinous matter, which is absorbed by the water and steam. The mass is passed through the machine as often as may be necessary to dissolve and remove all the extraneous gum and other elements and to bleach the fiber itself. After each submersion it is passed through rollers, which squeeze out the water with the matter it has absorbed from the plant. It is not even necessary to remove the leaves, as these are separated by the machinery. The fiber is not broken nor even weakened by the process. This is an immense reduction of labor from the manual process of India and China, where a workman does well if he secures a pound and a half of clean fiber per day, making its cost about $150 per ton.

If this machine should realize the expectations of its inventor, it will solve at once the problem of ramie-production in this country. It is claimed that large tracts of land in California will average 1,250 pounds of pure fiber per acre, calculating it at 10 per cent. of the entire bulk of the plant. Others estimate the yield of fiber at only 5 per cent., and the truth lies, probably, between the two estimates. The prepared fiber, formerly exported from California to England, passed through the custom-house at a declared value of £9 to £80, or $45 to $400 per ton. It is claimed that Coleman's machine will clean the fiber at a cost of $20 to $30 per ton.

AGRICULTURAL EXPERIMENTS IN NEW JERSEY.—Results of experiments by Dr. George H. Cook in growing corn on the Agricultural College farm are reported as follows: The corn was planted on plots of one-tenth of an acre each. On two plots

planted on sod without any manure, it yielded at the rate, respectively, of 93 and 94 bushels per acre. On a third plot, ammoniacal manure, costing at the rate of $26 per acre, gave an increase of only one bushel per acre. On a fourth plot, 100 pounds of muriate of potash, costing $2.75, increased the yield to the rate of 109 bushels per acre. The quantity was determined by weighing the corn on the cob, and allowing eighty pounds to the bushel.

Dr. David Petit, of Salem County, is reported to have harvested this season, from corn planted 2 feet by 3 feet apart, 283 bushels per acre, the fact being attested by a "sworn statement." It is added, that he has produced single ears of "yellow field-corn" which would yield a quart of shelled corn each.

Mr. John Wall, of Madison, Morris County, grew a field of fifteen acres, which was treated as follows: Six years ago the field was cleared, plowed, treated with 50 bushels per acre of gas-lime, and sown in grass. Last spring the sod was turned, a little ashes and bone put in the hill, and, after the corn was up, 50 bushels per acre of slacked lime spread on. The product of one acre, judged to be a fair average of the whole, was measured, and the yield was 171 bushels of very large ears.

Mr. Wall also reports the result of an experiment in growing potatoes. On sod-land, barn-yard manure was dropped in heaps last fall, at the rate of twelve loads per acre. In the spring this was spread broadcast and plowed in. With a "cabbage-plow," very shallow furrows were made 3 feet apart, and about 600 pounds per acre of bone-dust were dropped in the furrows, in which cut potatoes, of the Peerless variety, with two eyes in a piece, were planted, 12 inches apart, and covered lightly with the plow. When the plants were 5 inches above ground, 50 bushels per acre of slacked lime were spread on. The field was plowed three times: first deep, and throwing the furrow away from the rows; second, throwing the furrow to the rows; and third, the middles were split, throwing the furrow to the rows. The beetles were caught and killed. The product measured 288¾ bushels per acre. Most of the seed used was of large potatoes, which gave a better yield than that of small. On measured portions of the field, Mr. Wall applied bone-dust in different quantities, and from the result concludes that 2,000 pounds per acre is the most profitable rate. He is decidedly in favor of shallow planting and covering.

Cranberries in New Jersey.—A correspondent in Atlantic County New Jersey, reports the following facts respecting cranberry production in the western portion of that, and in the eastern part of the adjoining county of Camden. Within an area having a radius of about ten miles, there are 1,000 to 1,200 acres in cranberry meadows. They are owned partly by companies and partly by individuals, and vary in extent from half an acre to 100 acres. The early promise of an enormous yield the past season was reduced at least one-third by the rot. On all meadows thoroughly drained and well supplied with running water, the fruit suffered but little. On low places where the water is stagnant, and on meadows where the top muck has been removed, the fruit rots every year. This year the fruit was attacked by a new disease, or by the old one in a new form, and later in the season. In a bunch of matured berries, in contact, a part will be sound and others affected, and single berries are found one-half sound and the other soft. Some meadows have proved an entire failure, while others have yielded more than 100 bushels per acre. The average yield will not be more than 35 or 40 bushels per acre. In respect to size and evenness, the quality is about

average. Our correspondent regards it as settled, that cranberries cannot be successfully raised without a muck-subsoil, sanded on the top, good drainage, and a command of plentiful running water.

PEANUT CROP IN VIRGINIA.—The following statistics, respecting the peanut crop of Virginia, for the year ending September 30, 1875, are condensed from a "review" prepared and forwarded to this department by Mr. Thomas B. Rowland, of Norfolk. Scarcely a bag of the old crop was left in the State on the 1st of October, when the new began to appear in the Norfolk market. The price began at $2.50 per bushel, and ranged between that and $2.25 the first half of that month; but during the last half worked down to $1.50. In the first half of November it descended as low as $1.25, but by the 20th was up again to $1.50, between which and $1.80 it ranged, for the most part, through the year ending September 30. But under "speculative attempts" and "spurts" limited sales were effected in February at $2; March, $1.90 to $2.25; April, $2.25 to $2.50; and in May, $2. By the 1st of October, 1875, none of the old crop that could be classed "good" was left in market. Mr. Rowland gives the monthly receipts at Norfolk for the year, and the lightest were, October, 1,051 bags; the heaviest, December, 12,117 bags; January, 14,689; February, 15,047; March, 16,339. The aggregate was 91,407 bags. At Petersburg 15,910 bags were received, and Mr. Rowland estimates the receipts at Richmond at 20,000, making the total production in the State, in 1874, 109,317 bags. At 3½ bushels per bag, which Mr. Rowland regards as rather under the average, the amount would be 382,610 bushels. Mr. Rowland thinks the acreage of the crop of 1875 was 10 to 20 per cent. above the previous one, and that it is "excellent in quality." He states that the light frosts have scarcely damaged it, and that the crops left in the ground have continued to improve in maturity to a wonderful degree, promising that the later diggings, which constitute by far the larger portion of the crop, will be extra, plump, and well filled, needing only bright cool weather to cure one of the best crops ever made. The receipts of the new crop at Norfolk, up to November 1, were 2,186 bags.

LARGE CORN-CROP.—Mr. Tom Crutchfield, of Amnicola, near Chattanooga, Tenn., reports the yield of his corn-crop in 1875 as follows: In a field of 40 acres, bottom-land, an average acre, gathered and measured November 2, yielded 119⅓ bushels by measure, or $106\frac{15}{28}$ by weight. An average acre in another part of the field, planted earlier, gathered and measured on the 21st, yielded 114¾ by measure, or $109\frac{19}{28}$ by weight. In a field of 118 acres upland, an average acre in one part, gathered and measured on the 22d, yielded 55½ by measure, or $51\frac{33}{56}$ by weight; in another part, 58½ by measure, or $55\frac{11}{28}$ by weight. The bottom-land had been in grass some years and heavily pastured with sheep annually, from the time the hay was cut until the following March. Last spring the flood left upon it a sediment 6 to 18 inches deep. It was plowed to the depth of about 9 inches, cross-plowed, harrowed, checked off, 4 feet by 2, and planted from the 29th of April to the 11th of May. The seed was soaked twenty-four hours in copperas water and rolled in gypsum. The covering was done with a shovel-plow. After a good stand was secure, it was thinned to an average of one stalk per foot in the row and kept clean and well cultivated.

IMPROVEMENT IN WHEAT CULTURE.—A correspondent in Henderson County, Tennessee, in reporting favorably on the condition of wheat sown this autumn, states that in that section there is a decided im-

provement in the process of wheat culture; such as a more careful preparation of ground, selection of seed, &c.

CATTLE DISEASE IN ARKANSAS.—The following statements are condensed from a communication by our correspondent in Crittenden, respecting a disease among cattle in that county: The disease is confined to cattle along the river, (in no way exposed to Texas cattle,) and among them those on some farms entirely escape; those on the farm of our reporter, residing at Grayson, were not attacked; on two adjoining farms nine-tenths were lost. In that immediate neighborhood the loss amounts to fully three-fourths of all the cattle, but will not average for the county more than one in two hundred. The first symptoms are loss of appetite and high fever. In some instances death follows in a few hours, but the average interval between the attack and its fatal termination is about four days. One farmer, who out of twenty-five lost all but two, reports that he saved the latter by feeding them on cotton-seed. He thinks the whole seed better than meal, and ascribes its virtue chiefly to its effect in moving the bowels.

EPIZOOTY.—Our correspondents in different sections have noted a distemper or influenza prevailing among horses this autumn. It is generally described as a recurrence of what was known as the epizooty. But if so, it is in a much milder form than at its previous visitation. Very little serious damage and scarcely any loss has been reported; though a correspondent in Mobile writes, November 18, that in that city, and throughout Alabama, the disease is causing much trouble, and "seems to be growing worse every day."

COTTON MANUFACTURE IN TEXAS.—The Northeast Texas Council, Patrons of Husbandry, headquarters at Jefferson, Marion County, report the organization of a joint-stock company for manufacturing cotton fabrics. The president and local agent is Dr. J. R. Biggs, of Jefferson. The stock is issued in shares of $25, to give everybody a chance to participate. Every county should organize a similar enterprise, by doing which the cry of hard times would be banished from the South.

LOSS OF ANGORA GOATS.—Mr. Hardy, of Mohave County, Arizona, recently purchased 2,000 Angora goats in California. As they were passing through the Mohave Desert, in Kern County, they ate freely of a variety of milk-weed, from the effects of which 500 died, and many of the remainder are left in a very enfeebled condition.

ANGORA GOATS IN OREGON.—Messrs. Landrum and Rogers, of Westonville, Cal., introduced 2,400 of these goats into the Willamette Valley to aid in subduing the "club land" for cultivation.

HORSE-BREEDING IN ENGLAND.—Sir Charles Legard, member of Parliament, commenting upon the remission of the tax on horses, stated that the historical pre-eminence of England, as a horse-producing country, had of late been contested by several continental countries in which special attention had been paid to this branch of agricultural industry for the past twenty years. Foreign breeders have shown a determination, at almost any cost, to obtain the best blood of England for their own studs, and their late triumphs at some of the English races was a note of warning to the government to take immediate steps to retain in the country the choice stallions and the best strain of the blood extant. Prussia had especially been active, buying up all the active, short-legged, sound hack-mares in the United Kingdom at £5 per head more than any other buyer would offer. This class of animals was now almost

extinct in the country. The progeny of these mares, crossed with pure-blood stallions, gave the Prussian cavalry a great efficiency in the late Franco-German war. While the British government haggled about £40 per head for artillery horses, the French government got the choice of the market at £45 and £50 per head. During 1872 14,000 brood-mares were exported to France, every one of which should have been retained in the country. The honorable gentleman proposed that the government should keep a full number of first-class stallions in different parts of the country, and allow them to serve good mares at as low prices as would be consistent with the expense incurred.

Mr. Jacob Smith, chairman of the Boroughbridge Agricultural Association, differed from the above conclusions of Sir Charles Legard in several points. He did not think that there was any scarcity, for instance, of thoroughbred horses. Hunters of high character had increased in value, but were accessible to those who were willing and able to pay the market price. The scarcity was greatest among harness-horses, especially on farms. The select parliamentary committee had attributed this scarcity first to exportation of mares, but this export had nearly ceased. Secondly, the attention of farmers was distracted from horse-breeding by the superior profits of cattle and sheep, assuming that there was some profit in horse-breeding, which the speaker doubted. He did not believe that one in twenty of English horse-raisers could, upon an intelligent presentation of expenses and values, show any appreciable margin of profit upon a four-year-old horse, while many were conscious of serious loss. The third reason urged by the committee for the decline in horses—that the rapid growth of the population in numbers and wealth, by enlarging the demand, produced a relative if not an absolute scarcity—he thought did not apply to carriage-horses. The greatest demand now is for a class of animals formerly almost unsalable, ride and drive horses, and horses between that class and cart-horses. Agricultural horses had increased most in value, and had fluctuated most in price. The supply of the latter is undoubtedly increasing. Nearly every farmer now has cart-mares, and will breed from them at current prices. Though not disposed to attack racing, he could not help alluding to the large number of fine mares kept for sport which should be put to breeding. The high prices of horses was producing a reaction. The number of mares kept unbroken for breeding purposes in England was 268,177 in 1874, an increase of 25,695 over 1873. Every county in England and Wales showed an increase. The English farmer would not be slow to find a margin of profit in horses as well as in sheep and cattle.

BRITISH MALT CONSUMPTION.—During the year ending with September, 1874, the common brewers of the United Kingdom consumed 47,219,780 bushels of malt, an increase of 1,685,804 over the preceding year. The increase was nearly all in England alone, Scotland showing a decrease and Ireland only 39,000 bushels more than in 1873. The consumption of other parties than the common brewers, such as victualers, licensed retailers, &c., brewing their own beer, amounted to 10,843,493 bushels, a decrease of 868,268 bushels.

DEEP OR SHALLOW WHEAT CULTURE.—Mr. Mechi has been in the habit of cultivating wheat after mangel, kohl-rabi, cabbage, and turnips. For the preliminary crop he subsoils deeply and manures heavily, but for the subsequent wheat-crop he breaks the ground only with a single plowing with one pair of horses. He finds that deep culture just before wheat-sowing enlarges the straw product at the expense of the grain.

The heavy foliation of the plant is often very deceptive in regard to its yield, while light-looking fields generally produce largely in quantity and of very superior quality. He quotes Liebig in support of his views as follows: "But in proportion as the conditions for the formation of the straw and leaves became more favorable, so did the quality of the seed deteriorate as the quantity diminished." He cites the practice of some successful farmers who, on finding their crops too rank, trod them with men and horses. Salt stiffens the straw and checks rank vegetation, but it should be used in moderation. He always scattered it in connection with guano.

FRENCH CROPS.—M. Barral, with the approbation of the *Association Française pour l'Avancement de Science*, proposes the following method of estimating the crops of France. The departments are divided into six classes, according to the extent and quality of their crops. The first class embraces those in which the crops are very good, and their area is multiplied by 20; the second class is characterized as good, and their area multiplied by 18; the third class, as tolerably good, and multiplied by 16; the fourth class, passable, multiplied by 14; the fifth class, as poor, and multiplied by 12; the sixth class, as bad, and multiplied by 8. The sum of these products, divided by the sum of the areas, is assumed as an approximate indication of the yield and quality of the crops. In 1874, M. Barral determined the average of the wheat-crop at 18.50, the maximum being 20, the total yield being estimated at 130,000,000 hectoliters, or 368,916,600 bushels. In 1875 he makes the average but 12.50, and the yield 82,000,000 hectoliters, or 232,701,240 bushels. During the current year none of the departments reach the first class as yielding very good crops; 13 departments are of the second class; 26 of the third; 25 of the fourth; 30 of the fifth, and 8 of the sixth. France annually consumes from 72,000,000 to 74,000,000 hectoliters, and uses 14,000,000 to seed her wheat-fields. She has then a deficiency of 4,000,000 hectoliters, or 11,351,280 bushels. This deficiency, however, is more than made up by the unconsumed surplus of 1874. About 10,000,000 hectoliters of the crop of 1874 were exported; a portion of the remainder was of poor quality, leaving from 15,000,000 to 18,000,000 hectoliters available for consumption. The foreign outlook shows a small crop in England; a good one in Germany; a bad one in Russia; below average in the United States; a good one in Italy and Austria; a bad one in Hungary; below average in the Danubian principalities. Foreign countries will therefore demand a portion of the French crop instead of supplying its deficiencies. The French rye-crop is good; barley and maize are below last year, and oats much better.

The Paris correspondent of the Mark Lane Express says that the most trustworthy judges estimate the French wheat-crop at 95,000,000 hectoliters, (269,592,900 bushels,) with a surplus of the crop of 1874 equal to 20,000,000 hectoliters, (56,756,400 bushels.) Spanish crops have suffered from an unfavorable growing season.

FRENCH VINTAGE OF 1875.—The *Journal des Debats* says that the summer solstice was marked by wet, showery weather, which was followed by continuous sunshine, presenting, on the whole, a remarkably good season for the maturity of the fruit and the excellence of the wine-product. The noted wines of Bordelais and Burgundy promise their usual standard. In Central France, Lower Burgundy, and Champagne there has rarely been in the past a promise of larger yield than during the present year. Vine-growers in this region confess themselves perfectly

satisfied. In the south the damage from inundation, though serious, was not so great as was as first stated. The prolific yields of the past few years have placed the vine-growers in comparatively easy circumstances. On the whole the French wine-product will be abundant, and at least of medium quality; it will probably reach 60,000,000 hectoliters, or 1,585,068,000 gallons, worth, at 20 francs per hectoliter, $240,000,000. France exports wines to the amount of 250,000,000 francs per annum, but this represents less than one-tenth of the home consumption in a productive year. About one-tenth of the total product is used for the manufacture of brandy, and scarcely 1 per cent. for vinegar. Yet this mighty productive interest stands aghast at the ravages of the *Phylloxera*, which threatens to undermine its prosperity.

The Paris correspondent of the Mark Lane Express estimates the French vintage at 80,000,000 hectoliters, (2,113,424,000 gallons.) The distribution is quite unequal. The floods in the south have cut down the crop, while in the interior the yield is above average.

FRENCH AGRICULTURAL STATISTICS.—From the census of 1872 it appears that the agricultural population of France, including men, women, children, and domestics, numbered 18,513,325. Prior to the revolution of 1789 two-thirds of the landed property of the country was in the hands of nobles and ecclesiastics. In 1854 the number of land-owners was 7,846,000, or 1 in 5 of the population. From 1845 to 1872 the proportion of *cotes foncières* continued to enlarge, the number being 10,083,731 in 1815 and 13,863,793 in 1872. What is called "*petite culture*" ceased to increase in consequence of late changes in legislation, yet half the exploitations embrace tracts of 5 hectares (12½ acres) or less, and three-fourths of 10 hectares (25 acres) or less. Medium culture embraces tracts between 10 hectares and 40 hectares, (100 acres,) and grand culture all properties still larger. Small culture embraces 75.18 per cent. of the whole number of exploitations; medium culture, 19.75 per cent.; and grand culture, 4.77 per cent.

The cash value of the soil, including shops, barns, &c., in 1821 amounted to 39,544,000,000 francs; in 1851, to 83,744,000,000, an increase of 116 per cent. in thirty years, and the cadastral revenue from 1,580,597,000 francs to 2,643,366,000 francs, or 70 per cent. during the same period. The present value is estimated at 120,000,000,000 francs.

The principal financial charges are the land-tax, (*impôt foncier,*) *les droits de mutation et d'hypothèques*, and the interest on mortgages amounting to about a third of the income of rural properties. Farm-laborers are divided into two categories, those permanently engaged and residing on the farm,, and day-laborers. According to a table compiled in 1858 by the minister of the interior, the average day's wages of a laborer was, at that time, 1.75 francs, and is now about 5 per cent. more. The statistics of 1852 showed the following average of annual expense of living of an unmarried day-laborer as follows: lodging, 27 francs; board, 230 francs; clothing, 45 francs; total, 302 francs. This expense has since risen to about 350 francs.

Human labor in 1852 was supplemented by the employment of 1,450,000 horses, 173,000 mules, 220,000 asses, 1,680,000 oxen, 1,370,000 cows, or 4,893,000 draught-animals. Cereal culture has ever been the predominant branch of French farming, occupying an annually increasing acreage since the commencement of the present century. In 1815, 32,814,481 acres were sown in cereals; in 1835, the acreage had risen to 36,790,713; in 1855, to 41,783,830, showing an average annual increase in forty years

of over 220,000 acres. Wheat-culture especially has shown great expansion. In 1815, this grain occupied 11,346,493 acres, producing 111,982,133 bushels, or 9.9 bushels per acre; in 1873, 16,857,469 acres yielded 232,296,648, or at the rate of about 13¾ bushels per acre. During the year last named the crops of leading countries in Europe and America were estimated as follows: England, 106,627,114 bushels; Scotland, 3,868,772 bushels; Ireland, 6,915,837; total United Kingdom, 117,411,723 bushels; Prussia, 80,278,861 bushels; Austro-Hungary, 112,151,000 bushels; Russia, 227,040,000 bushels; Spain, 187,308,000 bushels; Italy, 101,465,200 bushels; United States, 281,254,000 bushels. The ruling prices of wheat in France are stated as being between $1.14 and $1.35 per bushel, averaging $1.23; but local circumstances undoubtedly considerably widen this margin. In abundant years France has a surplus of wheat for exportation; in scant years she finds it necessary to import. From 1816 to 1873 short crops in thirty-four years required an excess of imports; in twenty-four abundant years the exports were in excess; the imports are mostly drawn from Russia, Poland, Prussia, the United States, Roumania, Spain, Italy, and Egypt. The liberalization of tariff legislation in different countries during twenty years has exerted a very favorable influence upon the French grain-trade.

The vineyards of France cover 4.27 per cent. of her area, and are found in all the departments except ten. This culture has notably increased since 1788, when from 3,873,943 acres 132,088,000 gallons of wine were produced, averaging nearly 35 gallons per acre. In 1873 the acreage had risen to 4,975,842, and the production to 943,528,080 gallons, averaging 189 gallons per acre. The most abundant year, 1875, yields about 2,113,000,000 gallons, while 1854, the poorest of late years, yielded only 285,044,601 gallons. In 1806 the average price was 20 cents per gallon; in 1873, 41½ cents. In 1837 the importation of common wines amounted to only 14,318 gallons, valued at $4,442, and the exports to 31,224,281 gallons, valued at $8,503,694. In 1873 the imports amounted to 15,976,303 gallons, valued at $4,913,448, and the exports to 106,652,195 gallons, valued at $55,453,249. Wines are imported mostly from Spain, Italy, and Germany. The bulk of the export goes to England, Belgium, the United States, Germany, and Algeria and other French colonies.

ROTATION OF FLAX.—At the last session, at Nantes, of the *Association française pour l'Avancement de Science*, M. Reynard presented a paper showing that economic or industrial plants, which return to the soil little or nothing in exchange for the fertilizing principles withdrawn from it, should not be cultivated two years successively upon the same ground. Flax is one of these, and should not be grown even once without a heavy covering of the strongest manures. In common with other tap-rooted plants absorbing their nourishment from the extremity, the flax uses the fertilizing principles of the surface while absorbing those of the subsoil. Pliny said, with reason, that this plant burned and impoverished the soil.

The interval between flax-crops has varied in past ages. Anciently it was fifteen years, but flax was then not in so general use as now; such long intervals then made the crops more excellent. Flanders, to sustain the reputation of her linen fabrics, formerly held to an interval of twenty years, though many efforts were made to shorten it, and the interval is now variable. In France it ranges from three to seven years. The shorter intervals secure but indifferent quality of fiber, while longer periods are observed by experienced cultivators. The Belgians vary from three to twenty years.

Experiments for the shortening of the interval, by means of powerful fertilizers, have been unsatisfactory. Soils thus forced do not readily recover their fertility. Even when cultivated on a new soil, but alongside of one cultivated in flax the previous year, this crop often fails to come to maturity for three or four meters next the old soil, and sometimes for double that distance.

In addition to these discouraging facts, the culture of flax is one of the most laborious, and its product can be utilized only after passing under the hands of the retter and the stripper, the latter being generally called the flax-maker. But if thus greedy of labor as well as of capital, flax-culture is one of the most remunerative, a good crop re-imbursing several bad ones. It also leaves the ground in better condition for subsequent crops.

For use, and on account of being an indigenous crop, flax is regarded as above cotton by the Belgians as a textile, though many farmers prefer hemp as a remunerative crop. Such ignore the fact that flax is more productive than hemp, and that in certain soils hemp is only used to prepare the seed-bed for flax. For use, also, hemp is much less durable than flax; the thickness of its fiber, charged with gum, gives it a weight which is greatly reduced by washing.

Subventions of the English government have caused the culture of 26,000 acres in Ireland with flax. The French government has never granted any subventions, but local committees have given partial assistance; hence flax-culture has lost ground in France.

Since the formation of the Belfast "Irish Association for the Propagation of Flax-culture," Robert Kane has been analyzing numerous types of this textile, and preparing a formula for good and cheap manures. This formula, still employed in Ireland, is composed of pulverized bones, chlorides of potassium and soda, powdered white plaster, and sulphate of magnesia.

Subsequently, at the Agronomic Institute at Versailles, Georges Ville proposed a formula for flax-fertilization antipodal to Kane's prescription. Regarding chlorides as injurious to many crops, especially to flax, his formulæ were exclusively composed of acid phosphate of lime, sulphate of ammonia, nitrate of soda, nitrate of potassa, and plaster, in different proportions. He cashiers all raw salts, chlorides and sulphates of soda and potassa. Ville's formula embraces 400 kilograms of superphosphate of lime, 200 kilograms of nitrate of potash, and 400 kilograms of sulphate of lime; total, 1,000 kilograms per hectare, or 892.2+ pounds per acre.

The *Société agronomique* of Eastern Flanders, located at Ghent, tried several experiments in flax-culture with farm-manures and with the formula of Ville on different plots of equal size. During five years, commencing with 1869, one of these plots was fertilized each year at the rate of 20,000 kilograms of barn-yard manure and 500 kilograms of colza-oil-cake per hectare, or about 17,844 pounds of the former and 446 pounds of the latter per acre. The other was fertilized with 1,000 kilograms of Ville's preparation per hectare, or 892.2 pounds per hectare. In 1869 the first plot produced 3,359.16 pounds per acre of straw and 679.86 pounds of beaten flax; the second, 4,098.81 pounds of straw and 817.26 pounds of flax. In 1870 the first produced 4,218.36 pounds per acre of straw and 807.45 pounds of flax; the second, 4,098.81 pounds of straw and 847.60 pounds of flax. In 1871 both plots produced the same amount of straw, 3,857.91 pounds per acre, but the chemical fertilizer made 1,048.35 pounds of flax, while the barn-yard manure made but 753.92 pounds per acre. In 1872 the Ville fertilizer produced 3,947.13

pounds of straw per acre and 868.12 pounds of flax, while the barn-yard manure made but 3,134.33 pounds of straw per acre and 505.88 pounds of flax.

Previous to 1872 flax had been sold in Flanders with but little regard for differences of fiber, but it was subsequently found that the flax grown with chemical manure was worth 1½ francs per 6 pounds more than that grown with barn-yard manure.

In 1873 the society renewed its experiments. Three sowings were made, two on experimental plots and a third on a well-worked oats-stubble, oats being considered a very eligible preliminary to flax-culture. The last-named plot had been treated with 33,011.72 pounds of barn-yard manure in November, 1872, and on the 5th of April, 1873, was fertilized with Ville's preparation at the rate of about 250 pounds per acre; it produced 4,881.27 pounds of straw, 1,262.48 pounds of flax, and 308.7 pounds of seed per acre.

The second plot, one of the original plots on which four previous crops of flax had been grown, was fertilized with Ville's preparation at the rate of 1,070.65 pounds per acre, and produced for its fifth consecutive crop 4,095.24 pounds of straw, 861.87 pounds of flax, and 240.89 pounds of seed per acre.

The third plot, of new ground, was treated with 35,688 pounds of farm-yard manure and 802.98 pounds of colza-oil-cake per acre; it yielded 1,446.27 pounds of straw, 251.6 pounds of flax, and 120.45 pounds of seed per acre.

From these experiments it appears that the new oats-ground, with a comparatively light chemical fertilization following the heavy stable-manuring of the previous autumn, yielded the largest crops, while the new land heavily manured just previous to the sowing showed the poorest return. The other plot, from which five crops had already been grown, maintained about its average production with previous years.

INFLUENCE OF AGRICULTURAL MACHINERY.—In a late address before the agricultural committee of Ambazac, in France, M. Teisserenc de Bort stated that while in France the culture of the soil employs forty-five persons per hectare, in England it employs but sixteen, and in the United States nine. This difference is ascribed to the extended employment of machinery, especially in America, which causes farming operations to be more thoroughly and promptly performed. French farms are mostly too small to admit the expense of perfected machinery. The great English land-owners subdivide their estates among tenants in such a way as to secure the greatest benefit. English farms average 45 hectares, and Scotch 30 hectares. Of 2,660,000 American farms, 2,070,000 are less than 40 hectares. A hectare is 2.47 acres. American farmers often associate their capital for the purchase of costly machinery, an example which French farmers would do well to follow. Large landed proprietors should take the initiative and secure machinery for the use of their tenants at a reasonable cost.

MARKETING OF FARM-PRODUCE IN PARIS.—The *Journal Pratique d'Agriculture*, from official sources, gives the following figures, showing the quantities of meat, butter, and eggs sold at the *halles* of Paris during 1872 and 1874:

	1872.		1874.	
	Quantity.	Average price.	Quantity.	Average price.
		Francs.		*Francs.*
Beef.....kilograms.	5, 747, 033	1. 43	6, 956, 550	1. 37
Veal.....do..	7, 614, 979	1. 56	8, 454, 683	1. 37
Mutton.....do..	2, 638, 971	1. 58	4, 024, 595	1. 33
Pork.....do..	2, 149, 675	1. 43	2, 728, 447	1. 30
Butter.....do..	10, 228, 933	2. 90	10, 349, 421	3. 18
Eggs.....thousand.	232, 195	78. 63	213, 413	81. 85

In addition to the above there were sold at the *Marché de l'abattoir de la Villette*, of beef, 238,093 kilograms, at 1.29 francs, in 1872, and 209,703 kilograms, at 1.14 francs, in 1874; of veal, 75,819 kilograms, at 1.24 francs, in 1872, and 92,870 kilograms, at 1.22 francs, in 1874; of mutton, 14,242 kilograms, at 1.42 francs; of pork, 20,323 kilograms, at 1.23 francs, in 1872, and 31,006 kilograms, at 1.14 francs, in 1874. The total quantity of meat marketed in 1872 was 18,499,140 kilograms, or 40,784,708 pounds; in 1874, 22,540,879 kilograms, or 49,696,729 pounds.

FRENCH EXPERIMENTS IN FIXING DRIFTING SANDS.—Along the coast of the departments of Gironde and Landes, in the southwest of France, dunes, or hills made by drifting sands, extend from the mouth of the Garonne to that of the Adour. The distance is one hundred and twenty miles, and they had attained an average breadth of about three miles. They thus covered a surface of 200,000 acres. By the action of winds they were steadily widening. In their progress they not only buried the soil, but all the improvements, including the buildings. At Soulac, these drifting sands had left only the belfry of the old church above the surface. In the sections where the winds have the clearest sweep, the hills thus formed had attained a height of 300 feet. All attempts to stay their overwhelming advance had failed, until a plan for covering them with a forest, designed and proposed by M. Brémontier, was tried. That, at a very small outlay compared with the beneficial results, has proved permanently effectual. Its essential features were as follows: beginning at the foot of the dunes on the west or shoreward side, a plat, not exceeding in extent the means at command for the required treatment, was sown with 18 pounds per acre of pine-seed and 7 of broom-seed, to which in case the location was specially exposed to the winds, were added 4½ pounds of gourbet-seed, (*Calamagrostis arenaria.*) Immediately after the sowing, was laid on a covering of small brushwood, cut so as to lie entirely flat, and made to lap like the feathers of a bird. At points where necessary, a further temporary protection was added by fences of boards or wattled fencing. The former was constructed of inch boards, 6 or 8 inches broad, 5 feet long, inserted in the sand 2 feet, with intervening spaces of ¾ of an inch; in the latter, the stakes were about 2½ inches in diameter and 5 feet in length, inserted 20 inches deep and 20 inches apart. The gourbet is described as a very hardy plant, unaffected by heat or cold, or proximity to the salt-water, growing at all seasons, and having the peculiarity of continuing a thrifty upward growth, however deeply the sand may drift around it. It is reported as growing vigorously through a layer of sand, above the surface on which it was planted, over 8 feet deep. The broom comes up much sooner than the pine, and, before the covering of cut brushwood fails, supplies its place with a vegetable growth. At the same time it serves as a protection for the later germinating and more slowly growing pines. But within four or five years after the planting, the pines

outstrip the broom, and become sufficiently rooted and branched to completely withstand the winds and fix the shifting sands. The broom is then removed and turned to profit by serving as brushwood for a new plat. The only further work required is to prune out the pines to the proper stand for the most thrifty forest. The work of thus staying the desolating line of march, one hundred and twenty miles long, and of repairing its zone of desolation, already three miles broad, was completed in 1862. The whole expense was 480,000 pounds sterling, averaging a little over 47 shillings, or $11.75, per acre. The pines, now covering the dunes "with a magnificent forest," are described as a variety of "sea-pines," very thrifty in that climate and soil, and valuable for both timber and resin.

CROPS OF DENMARK.—British consular reports show that Denmark has produced, the past season, about 9,000,000 quarters of grain. The carefully-prepared statistics of this little kingdom show an increasing surplus, during the last five years, of live stock and provisions, but a declining surplus of grain, indicating that cattle-feeding and butter-making are attracting increased attention and effort. During 1874, the export of butter amounted to 103,322 barrels, a large increase over the preceding year, and about double the export of 1870. Of the export of 1874, 81,351 barrels went to Great Britain, where they commanded high prices. The export of eggs, from very insignificant beginnings, has within five years reached the aggregate of 1,426,900 score, representing a capital of 600,000 rixdollars. The Danish rixdollar is worth about 48.8 cents. The last year's export of fowls was officially valued at 263,289 rixdollars, all of which went to Germany. Rabbit-breeding has become one of the recognized industries, and is expected to furnish considerable matter for export. Denmark has the largest proportion of agricultural population—more than three-fourths. Danish farmers receive comparatively little attention from the government.

IRRIGATION IN INDIA.—The cost of the irrigation-canals of the Punjaub was £2,684,279. The revenue from these canals amounts to £145,411, of which £48,555 were derived from water-rates, and £96,856 from increased land-revenue.

HOP-GROWING IN TASMANIA.—Near Norfolk and on the banks of the Derwent and Lachlan, are large alluvial, low-lying tracts, irrigated by dams in the rivers. The water of the Derwent is lifted by steam-pumps in order to gain the necessary fall. Here hop-growing has been inaugurated on a large scale by cultivators occupying from 6 to 90 acres each, the whole hop-acreage amounting to 488 acres. On the Huron and at other points, the acreage has been increased, making that of the whole island about 664 acres. Last year 627 acres in bearing averaged about 1,300 pounds, or 11¾ hundredweight per acre. The Norfolk district averaged 13 hundredweight per acre. During the current year it is estimated that the productive acreage will be smaller, and the average yield will be reduced to 11 hundredweight per acre, but from the decline of the British crops it is thought that the Tasmanian farmers will receive a larger sum for their product than last year. Prices ranged from 1*s.* 7*d.* to 2*s.* 6*d.* per pound. The primary markets of this trade, Melbourne and Sidney, are liable to be overstocked, not having any great capacity, and hence it becomes the producers to be careful in sending their crops to market. Irrigation is generally practiced, there being but few soils that can grow hops without it. Both science and experience are essential to the proper regulation of irrigation. Water must be admitted to the land at proper times and in proper quantity. Over-

irrigation induces an excessive flow of sap, which is sure to be arrested by the low temperature of the cold nights. This produces an abnormal condition favorable for the growth of the spider, for which no remedy has been discovered. The only way of resisting the spread of this pest is to destroy the infested plants.

Irrigation must be commenced before the natural moisture of the soil is exhausted; it is equally important to cut off the water at the right time, though occasionally, when pickers are scarce, it is let on again to keep the unripe plants green a little longer. Early irrigation is the most favorable to plant-growth. Poling is still in common use. Abundant manuring has been found necessary even on the richest soils. The picking season lasts five or six weeks. Pickers receive 1½*d.* per bushel, good hands averaging about 15 bushels per day. The poor people from the towns thus find good employment, enabling them to tide over the winter in tolerable comfort. The sparseness of population, however, will probably prevent any great enlargement of hop-growing by necessitating a short supply of labor. Hops must be picked immediately after ripening, and any considerable delay is attended by deterioration of the crop. Hops are kiln-dried with either charcoal or anthracite, and require about twenty-four hours for this operation. Careful arrangements are made to keep the picking, drying, and pressing going forward without interruption.

LATE AUSTRALIAN STATISTICS.—The returns for the year 1874–'75, show that South Australia still maintains its pre-eminence as a cereal-producing colony. In Victoria, wheat-culture has fallen off, which seems strange, in view of the fact that the country has been filling up more rapidly than ever before with population. The actually occupied area has reached 12,264,566 acres, or about half the area of Ohio. During 1874, 771,021 acres passed into private lands, nearly all of which is inclosed. The land under tillage increased 46,803 acres, making a total of 1,011,799 acres. The wheat-acreage declined 17,041; oats increased 3,930 acres, and barley 4,172 acres, yet the total grain-surface was but 496,141 acres, against 503,210 in 1873. Green and root crops, on a smaller acreage, yielded larger crops, especially potatoes, which, from an area 3,170 acres less than in 1873, produced 124,299 tons, or 14,477 tons more than the previous crop. The hay-crop of 157,336 tons covered 113,120 acres, or 3,448 acres more than the previous year. The average crop—1.03 tons per acre—was the same as in 1872 and 1873. The fallow land increased from 66,989 to 77,912 acres. Artificial grasses are increasing; rye-grass, lucerne, clover, and vetches, for fodder, declined 5,339 acres, but the loss is more than compensated by the increased culture of other perennial grasses, of which 46,374 acres were sown last year, making the total acreage in Victoria 254,278 acres. The acreage in tobacco has been enlarged to 733, and the crop, 6,839 hundredweight, is 3,145 hundredweight greater than last year. The vineyards report 8,545,364 vines, a decrease of 1,039,984, but it is believed that this decrease is mostly in worthless vines, adding but little to the productive value of the vine-area. The grape-yield has increased, 90,980 hundredweight beingmade into wine and brandy, or 5,709 hundredweight more than the previous year. The total vintage amounted to 599,093 gallons, an increase of 36,380.

Australian journals complain that Victoria does not produce enough breadstuffs for her own consumption. From the amount of land annually taken up, ostensibly for cultivation, it is argued that not only should the home demand be met, but also that a surplus for export should be

secured. The failure in this respect is attributed to the speculating character of the land appropriations. Men are purchasing largely of the best lands, and awaiting the rise in values in order to sell again. Only a portion of the new settlements are made by *bona-fide* cultivators. The liberalized land legislation is thus benefiting a class against whom it was intended to work, the land-sharks.

NEW ZEALAND STATISTICS.—Late returns do not indicate as rapid progress as in former years. The total area under cultivation in February, 1875, was 1,788,797 acres, an increase of 285,445 acres. The wheat-area was 105,673 acres against 132,425 the previous year, and the crop 2,974,339 bushels, a loss of 417,297 bushels. The average yield per acre, 28 bushels and 8 pounds, is still unapproached by any of the Australian colonies. Oats is the only crop showing a decided increase; it has become the leading grain-crop of the island. The acreage was 157,543, an increase of 48,071, and the crop 5,548,729 bushels, against 2,194,923 bushels the previous year. These figures do not include 21,053 acres of oats cut for hay, which, in addition to 41,159 acres of mown grass, yielded 52,201 tons of hay. The barley acreage declined from 22,132 to 16,235, and the yield from 606,492 bushels to 447,162 bushels. Potato-culture, on the contrary, advanced; the acreage rose from 11,614 to 12,152, and the aggregate yield from 51,757 tons to 63,682 tons. Permanent pastures cover 1,393,855 acres, an increase of 256,207. This one year's increase in New Zealand exceeds the entire breadth of Victoria. The high price of beef and mutton in New Zealand has induced this extension of grass culture. The agricultural population of the colony is rapidly increasing by immigration, and the railways under construction or in contemplation will soon give access to the markets of the world. The wheat-product is ample for home consumption. Including oats, there will be available, as breadstuffs-export the current year, over 20,000 tons.

SHEEP-HUSBANDRY IN GEORGIA.—A late "Manual of sheep-husbandry in Georgia," issued by the State commissioner of agriculture, gives the following points of information derived from inquiries addressed to correspondents in the different counties. Of those who have tested cross-breeds, 98 per cent. consider the cross between merino and native the most profitable. The following averages are deduced from a vast number of individual facts: Annual profit on capital invested in sheep, 63 per cent. Annual cost of keeping per head, 54 cents. Cost of raising wool, 6 cents per pound, the market-price for unwashed being 33⅓ cents per pound gross, and 27½ cents net. Each 100 ewes produce 74 lambs. Yield of unwashed wool, 3.44 pounds per head, yielding, at 27½ cents, 94 cents per fleece. Price of lambs sold to butchers, $1.87 per head; price of stock-sheep, $2.58 per head; price of mutton-sheep, $2.75 per head.

The census of 1860 reported 512,618 sheep in Georgia; the census of 1870, 419,465; the latest returns of the tax-receivers show but 319,323; decrease from 1860 to 1870, 93,153; from 1870 to 1875, 100,142; total loss in fifteen years, 193,295, or 38 per cent., whereas there should have been an increase of 100 per cent. Ninety per cent. of the reports show that dogs are the *principal* obstacle to sheep-husbandry—in most of them the *only* one. Several state that sheep-husbandry has been entirely abandoned in consequence of the ravages of curs. That is, a capital which, in favored localities, in spite of these pests, yields an annual return of 63 per cent., is crippled and depressed by the presence of 99,415 dogs, which killed 28,625 sheep during the year. The losses by

dogs amount to 15 per cent. of the whole, while the losses from all other causes are but 6 per cent. There are 31 dogs to each hundred sheep. The commissioner estimates that the abatement of this nuisance would greatly enlarge the capital invested in sheep, and raise the annual rate of profit from 63 to 72 per cent. In a few years the number would be quadrupled, and the clear profit on the investment would amount to $2,372,687 per annum, a sum exceeding the annual receipts of the State treasury, and more than a fourth of the State debt. The value of sheep killed last year, $73,852, would more than pay the per diem and mileage of the house of representatives of the State.

Correspondents estimate that 100 sheep, regularly folded, would fertilize eight acres so as to double its next subsequent yield. At this rate the number of sheep now in Georgia would annually fertilize 25,544 acres. Supposing that unfertilized land would bring half a bale of cotton per acre, the increased yield of this area would be 12,772 bales, worth, at $50 net per bale, $638,600. If the number of sheep were raised to 2,000,000, which might easily be done, if the dogs' ravages were arrested, their manure would add $4,000,000 annually to the production of the State. Thousands of farmers are ready to engage in this business as soon as the law affords adequate and just protection to this interest. Millions of acres, now unoccupied, will be opened as sheep-walks, and immigration will be enlarged. The large sheep-proprietors have capital enough invested to warrant keeping shepherds for the protection of their flocks. Small farmers cannot incur this expense, and consequently will not be able to engage in the business.

The climate of Georgia corresponds to that of the best sheep-growing regions in the world, *e. g.*, Spain and Australia. Mr. David Ayres, in Mitchell County, in the southwest, keeps 3,500 sheep, at an average annual cost of 14 cents per head; he shears about three pounds of wool per head, which he sells at 30 cents per pound, realizing 90 per cent. profit upon the capital invested. Lands suited to sheep-raising in that part of the State can be purchased at from $1.50 to $10 per acre. Mr. Ayres never feeds his sheep and has never introduced any improved breeds. A cross of merino upon his native stock would greatly enlarge these results. About all the care bestowed upon them is their annual shearing and marking. Dogs, hogs, and eagles are destructive, especially upon the lambs of this flock. This case is compared with that of a farmer in Washington County, Pennsylvania, who, from 650 highly-improved sheep, costing annually $1.54 per head, shears four pounds of brook-washed wool, at 56 cents per pound, or $2.24 per sheep. The last winter being very severe reduced his average return to $1.60 per head. The sheep are worth $3.50 per head, and the profits amount to 46 per cent. on the capital invested. The Georgia wool being free from hay-seed and cleansed by the heavy spring rains is nearly equal to the Pennsylvania washed wool. The latter occupies land worth $50 per acre, or ten times that of the Georgia farmer. The Pennsylvanian keeps two sheep per acre, and the Georgian one; the former invests five times as much money as the latter in land and realizes but one-half the rate of profit.

A farmer in Putnam County, Middle Georgia, keeps 138 sheep, a cross between merino and common stock, as a part of his farming enterprise. They cost "only the salt they eat," while they realize annually 100 per cent. on the capital invested, from lambs, mutton, and wool. The fleeces average three pounds per head, and bring a minimum price of 25 cents, costing only the price of labor in shearing. This flock utilizes the Bermuda grass, so much dreaded by Georgia farmers in the summer, and

in winter ranges the fields from which crops have been gathered, and the canebrakes. No diseases infect the flocks to any marked extent in Georgia.

The commissioner insists that increase of lambs is increase of wool, and that lambing should take place as early in January as possible, as "a January lamb is worth two March lambs." The bucks should be allowed to run with the ewes about the 1st of August. During the lambing season the bearing ewes should be kept in a separate flock and daily attended to. If pasture be short they should be fed moderately on cotton-seed, which, with oats and rye pastures sown early in the fall, will give an abundant supply of milk and keep the ewes in healthy condition. The commissioner presents a variety of judicious suggestions suited to the wants of sheep-raisers in Georgia. Of the sheep-raising capacity of the State he remarks that there are 10,000,000 acres of land suited to this industry, which are practically unoccupied. The spontaneous Bermuda grass forms an impenetrable sod, and is fully equal to the Kentucky blue-grass. Where partly protected by pine-trees it remains green all winter. On lands unprofitable for cultivation, this grass will support five sheep per acre during nine months of the year. Other natural grasses may be profitably utilized in sheep-husbandry. Artificial pasture may be easily and cheaply secured. Pea-fields from which corn has been gathered will fatten sheep or prepare them for winter-quarters in the cotton-field, which, having been sown with rye or oats in August and September, will give nutritious winter-pasture. Turnips sown at the same period may also be used to give green food until the return of early spring vegetation. Movable fences will render it practicable to herd the flock for successive periods upon separate areas of turnips sufficient for their support. In consuming the crop the sheep will fertilize the land.

The legal protection of this industry is urged on considerations growing out of the labor question. It will relieve the pressure of the demand, and enable the farmers to deal more independently with it.

Wool-production of South America.—The wool-export of South America, by a rapid increase, reached 234,916 bales in 1868, most of which was from Buenos Ayres. Since then this upward movement has been stationary, the export of 1874 being 237,458, or less than 3,000 bales increase in six years. In 1862 the port of Buenos Ayres shipped abroad over 58,000,000 pounds of wool; in 1866 this aggregate was doubled; and in 1873 the figures of 1866 were increased 50 per cent. The official statistics of 1868 show that the Argentine Republic then had 67,700,000 sheep. At present the number is about 70,000,000, of which 60,000,000 are in the province of Buenos Ayres.

Sheep-husbandry, which to-day constitutes the principal industry of the Argentine Republic and of Uruguay, has made great progress in those countries within the last few years, and finds a prospect of still further expansion in view of the increasing European demand. But the conditions of production have been gradually changing. Sheep have been multiplied, not by the processes of intelligent breeding, but by a headlong impulse to enlarge the flocks, with but little regard to the means of subsistence, or the more exacting requirements of the foreign market. Buenos Ayres, especially, shows signs of having been overstocked with sheep. Its pastures are running low, as is indicated by the spread of epidemic and parasitic diseases. The leading parasites infecting South American sheep are the fluke in the liver and worms in the head, showing either a deterioration in the organic constitution of the animals, or in the quantity and quality of the pastures. Perhaps

both these influences have been operative. Buenos Ayres has a dry, hot climate, and vast plains lightly timbered, and originally covered by nutritious indigenous grasses. The increase of wool-production was at one time so rapid as to give rise to fears of overstocking the market. But from protracted droughts, from overstocking of pasturage, and from political convulsions, threatening the security of both life and property, this industry has of late years experienced a severe check. It is not probable that the pastures already occupied constitute the whole or even the greater part of the areas of this continent available for wool-production, but the power of the government is not adequate to the protection of this class of property in large areas of land occupied by a frontier population, and but little amenable to the restraints of social order. But as government becomes more stable, its power will probably be exerted to repress such disorders, and thus widen the area within which it will be safe to invest capital in sheep-husbandry.

In Australia, wool-production can no longer expect those sudden expansions which have so seriously disturbed the markets of the world within the past few years, as in the case of the opening up of the Riverina and North Queensland sheep-walks. The newly reconnoitered regions of West Australia are said to be of comparatively limited area. In the extreme northern parts of the country sheep cannot be profitably raised. In North Queensland, for instance, imported flocks, after apparently doing well for a time, began to decline in both wool and flesh, and finally became worthless. But the regions farther south, by judicious management, are evidently capable of a great enlargement of wool-production, as well as of a great improvement in quality of fleece. Here, as in South America, the limit of wool-production upon natural grasses is indicated by the prevalence of epidemic and parasitic disorders. It is evident, then, that natural resources may be overtaxed, and that wild grasses must be supplemented by artificial grasses and fodder-plants, if wool-production is to experience any further enlargement even in the wildernesses of South America and Australia. Another element of profit is also to be introduced into the problem—that of meat-production. The necessity of this is felt by sheep-raisers in both these great regions. In Buenos Ayres, where mutton has hitherto been of little value, it is now shipped to London in boxes, and sold at 12 cents per pound. Operators in this new trade now talk of throwing the meat of 10,000,000 sheep upon the foreign market annually. Such expectations are doubtless extravagant, but they indicate the gradual perception of a change of condition in production, which will compel sheep-raisers to enlarge the scope of their industry beyond mere wool-production. If these wild regions can be brought under the regime of civilized industry, we may expect a more regular and normal growth of wool-production, with less destructive fluctuations than in the past.

Sheep-breeding in New South Wales.—At a late meeting of the New South Wales Agricultural Society, Mr. John Smith traced the history of merino breeds of modern Europe, and compared them with the Australian merino. The Spanish merino was introduced into England by George III, in 1791 and in 1804. At a public sale of the progeny, rams averaged £19 14*s.*, and ewes £8 15*s.* each. Four years later the rams averaged £33 10*s.* and ewes £23 12*s.* 6*d.* In 1810 rams were sold at an average of £58 and ewes £37 10*s.* per head. Subsequently the Merino Society was organized, under the presidency of Sir Joseph Banks, with fifty-four vice-presidents. Yet, after all this imposing demonstration, the attempt to cross the merino with the coarse-wooled

English sheep was a total failure. Not only were the points of difference too wide for combination, but also economic reasons arrested the project of amalgamation. Three Southdown sheep could be fattened as easily as one merino, and the demand of the English market for mutton rendered the lean merino a very undesirable acquisition. In Germany the perfection of the fleece was the leading idea, and hence the merino here found a more congenial home. The Australian merino is mostly of German origin instead of Spanish, its original stock. Hence, being the progeny of a cross, there is a tendency to individual degeneracy. Hence, also, the necessity, impressed by intelligent sheep-breeders, of culling out such animals from the breeding-flocks. Yet the merino type has attained in Australia higher qualities than any that could be imported from Europe at the present date. To a large extent sheep-breeding has there been judiciously conducted with reference to selection of breeding animals, and of the most eligible conditions of climate, soil, pasturage, &c. The undulating slopes of the great dividing-ridge of the continent turn out merinos in great perfection, endowed with superior softness and elasticity of fleece. The mild winters yield natural food, while the dryness of the climate favors the retention of yolk. The abundance of forest trees gives shelter in winter and shade in summer, thus modifying, to a very important degree the action of the natural elements upon the wool.

In Germany, sheep are too much confined in sheds, in order to preserve the fleece. Hence the growth of the animal, in size and muscle, is impeded, and its constitution weakened. The free exercise of the Australian sheep-walks, with the variety of pastures afforded, gives a symmetrical development and a hardy constitution, with a superior fleece. The German merino-wool, protected as it is from the elements, is superior to the Spanish in softness. Australian sheep-farming is yet to attain something of this result by providing shelter in the heavy-rain season. The flabby corrugations of the imported Negretti, in Australia, are soon rounded out by judicious breeding.

Adaptation to local climate and circumstances is a point of special importance in Australia. Flocks removed from the table-lands of New South Wales to the plains and sand-ridges of the Darling showed marked changes in the character of their fleece. Sheep first taken to Queensland, just north of New South Wales, and occupying the northeast corner of the continent, began to yield a light, harsh, and dry wool, bringing only reduced prices. In subsequent years, however, these qualities enhanced its value. Manufacturers found that the dry atmosphere, by absorbing oil from the fleece, increased the weight of wool proper, compensating the waste from scouring. Queensland wool then rose to prices higher than that of New South Wales of the same fineness. The hot sun and the fine sand mingled with the wool absorbed the yolk. The northern part of the continent lies within the tropics; hence it has been suggested that the breeds of these regions be constantly renewed, in order to prevent the deterioration of wool into hair. Much may be done in this direction by proper selection and by artificial shelter from the extreme sun-heat. The Negretti is, probably, the best sheep for these warm arid districts. Some districts of this region are supposed to be favorable to fine combing-wools. This class of wools require that the animal be kept in good condition through the winter as well as through the summer.

Some fine strains of Leicester blood have been introduced into Australia, but the perpetuation of their good qualities demands close attention and judicious management on the part of the breeder. Passing to

the interior, a great deterioration in sheep is noted. This is attributed to the land-laws not admitting of pastoral homesteads; and the *squatter* who merely camps upon the public lands breeds only for numbers, with but little regard for quality. A large portion of these sheep are not worth shearing. It is estimated that at least half of the 20,000,000 sheep of New South Wales should be slaughtered, and their places supplied by improved breeds of wool-producing animals. The improvement of 9*d.* per fleece on 10,000,000 sheep would amount to £375,000 or $1,875,000 per annum.

The speaker complained of the land legislation, which crippled the greatest industrial interest of the colony—wool production. Squatters who have gone in advance of civilization and have established sheep-stations in the wilderness, dining off the kangaroo, extinguishing the bush-fires, and adding greatly to the beef and mutton product of the country, are at the mercy of free-selectors, who, under the law, can appropriate all the improvements found upon the land. A pre-emption law, like that of our American public-land system, by giving the actual settler inceptive rights within a limited period to the refusal of the land, would arrest this land-grabbing process and secure the possession of the soil to that class of owners which will manage it more in accordance with the public interest. The regular occupation of the country and the erection of fences is necessary to secure the excellencies of the Australian merino. The indigenous grasses of the country are disappearing and varieties bearing pernicious seed are springing up in their place. The country must be fenced and sown in desirable varieties in order to secure adequate nourishment for the increasing flocks of the colony.

MARKET-PRICES OF FARM-PRODUCTS FOR NOVEMBER, 1875.

The following quotations represent the state of the market, as nearly as practicable, at the beginning of the month:

Articles.	Prices.
NEW YORK.	
Flour, superfine ..... per bbl.	$5 10 to $5 40
extra State ..... do...	5 50 to 6 30
extra to choice western, per barrel	5 50 to 9 00
common to fair southern extras ..... per bbl.	5 65 to 7 00
good to choice southern extras ..... per bbl.	7 10 to 8 75
Wheat, No. 1 spring ... per bush.	1 36 to 1 43
No. 2 spring ..... do...	1 28 to 1 34
winter, red, western, per bushel	1 23 to 1 45
winter, amber, western, per bushel	1 23 to 1 45
winter, white, western, per bushel	1 35 to 1 50
Rye ..... per bush.	75 to 88
Barley ..... do...	90 to 1 13
Corn ..... do...	70 to 76½
Hay, first quality ..... per ton.	17 00 to 21 00
second quality ..... do...	14 00 to — —
Beef, mess ..... per bbl.	11 50 to 12 00
extra mess ..... do...	12 00 to 13 00
Pork, mess ..... do...	22 75 to 23 00
extra prime ..... do...	16 00 to 16 50
prime mess ..... do...	19 50 to 20 00
Lard ..... per lb.	12¾ to 13⅝
Butter, western ..... do...	18 to 34
State ..... do...	23 to 36
Cheese, State factory ..... do...	7½ to 14
western factory .... do...	6 to 13½
Sugar, fair to prime refining, per pound	7¾ to 8
Cotton, ordinary to low ordinary ..... per lb.	11⅜ to 13⅛
low middling to good middling ..... per lb.	13⅛ to 14½
Tobacco, lugs ..... per lb.	7 to 9
low leaf to medium leaf ..... per lb.	9½ to 13
Wool, American XXX and picklock ..... per lb.	50 to 54
American XX and X, per pound	43 to 48
American, combing, per lb.	55 to 65
pulled ..... do...	27 to 46
California spring clip, per pound	22 to 32
California fall clip .. per lb.	17 to 22
BOSTON.	
Flour, western superfine . per bbl.	5 00 to 5 25
common western spring extra, per bbl	5 50 to 6 00
good to fancy northwestern extras ..... per bbl.	6 00 to 9 25
good to fancy western, per bbl	6 50 to 9 00
southern family .. per bbl.	7 50 to 9 00
Wheat ..... per bush	1 30 to 1 55
Corn ..... do...	79 to 83
Oats ..... do...	43 to 56
Rye ..... do...	95 to 1 00
Barley ..... do...	1 00 to 1 30
Hay, eastern and northern, per ton	13 00 to 22 00
Beef, mess ..... per bbl.	10 00 to 11 00
extra mess ..... do...	11 00 to 12 00

Articles.	Prices.
BOSTON—Continued.	
Beef, family ..... per bbl.	$16 50 to $17 00
Pork, mess ..... do...	23 00 to 23 50
prime ..... do...	16 00 to 17 00
Lard ..... per lb.	13¼ to 14¼
Butter, New York and Vermont, per pound	22 to 33
western ..... per lb.	18 to 34
Cheese, New York and Vermont factory ..... per lb.	10½ to 13½
western factory .... do...	8 to 13½
Sugar, fair to good refining . do...	7⅞ to 8⅛
Cotton, ordinary to good ordinary ..... per lb.	11⅝ to 12⅞
low middling to good middling ..... per lb.	13¼ to 14¼
Wool, Ohio and Pennsylvania, per pound	42½ to 50
Michigan ..... per lb.	42 to 45
other western ..... do...	42 to 43
pulled ..... do...	35 to 58
combing fleece ..... do...	38 to 62½
California ..... do...	16 to 36
PHILADELPHIA.	
Flour, superfine ..... per bbl.	4 62½ to 5 00
Pennsylvania extra to choice ..... per bbl.	4 75 to 6 75
western extra to choice, per barrel	6 00 to 6 75
Wheat, red ..... per bush.	1 00 to 1 40
amber ..... do...	1 32 to — —
white ..... do...	1 45 to 1 55
Rye ..... do...	75 to 78
Barley ..... do...	— — to — —
Corn ..... do...	72 to 75
Oats ..... do...	35 to 48
Hay, prime baled ..... per ton.	23 00 to 25 00
baled, common to fair shipping ..... per ton.	20 00 to 22 00
Beef, western mess ..... per bbl.	7 00 to 9 00
extra mess ..... do...	8 00 to 9 00
Warthman's city family, per barrel	16 00 to — —
Pork, mess ..... per bbl.	22 25 to 22 75
prime mess ..... do...	18 50 to — —
prime ..... do...	16 00 to 17 00
Lard ..... per lb.	13¾ to 14¼
Butter, choice Middle State . do...	28 to 38
choice western ..... do...	28 to 31
Cheese, New York factory, good to fancy ..... per lb.	12 to 14¼
Ohio factory, good to fancy, per pound	10 to 13½
Sugar, fair to good refining . per lb.	7¾ to 8⅛
Cotton, ordinary to good ordinary ..... per lb.	11 to 13
low middling to good middling ..... per lb.	13¼ to 14½
Wool, Ohio X and XX ..... do...	45 to 47
other western ..... do...	40 to 45
tub-washed ..... do...	54 to 60
pulled ..... do...	38 to 40
combing ..... do...	62 to 64
BALTIMORE.	
Flour, superfine ..... per bbl.	4 50 to 5 00
extra ..... do...	5 00 to 5 50
family and fancy .... do...	5 75 to 8 75

Market-prices of farm-products—Continued.

Articles.	Prices.		
BALTIMORE—Continued.			
Wheat, red ..... per bush.	$1 36	to	$1 48
amber ..... do...	1 50	to	1 55
white ..... do...	1 20	to	1 50
Rye ..... do...	80	to	85
Oats ..... do...	40	to	48
Corn ..... do...	63	to	77
Hay, Middle States ..... per ton	19 00	to	25 00
Pork, mess ..... per bbl.	23 50	to	— —
extra prime ..... do...	16 50	to	— —
Lard ..... per lb.	14½	to	17
Butter, western ..... do...	26	to	28
eastern ..... do...	26	to	35
Cheese, western factory, good to choice ..... per lb.	12	to	13½
eastern factory, good to choice ..... per lb.	13	to	14½
Sugar, fair to good refining .do...	7¾	to	8
New Orleans, grocery grades ..... per lb.	—	to	—
Tobacco, lugs ..... do...	6½	to	9
common to medium leaf, per pound	9	to	11
Cotton, ordinary to good ordinary ..... per lb.	—	to	12¾
low middling to good middling ..... per lb.	12⅝	to	13
CINCINNATI.			
Flour, superfine ..... per bbl	4 00	to	4 25
extra ..... do...	4 50	to	5 00
family and fancy ..... do...	5 40	to	6 25
Wheat, winter, red ..... per bush.	1 00	to	1 45
hill, (amber) ..... do...	— —	to	— —
white ..... do...	1 00	to	1 45
Rye	73	to	80
Barley ..... do...	50	to	1 20
Corn ..... do...	45	to	63
Oats ..... do...	25	to	42
Hay, baled, No. 1 ..... per ton.	18 00	to	19 00
lower grades ..... do...	12 00	to	16 00
Beef, plate ..... per bbl.	— —	to	— —
Pork, mess ..... do ..	21 00	to	22 00
Lard ..... per lb.	12⅝	to	13¾
Butter, choice ..... do...	26	to	30
prime ..... do...	24	to	26
Cheese, prime to choice factory, per pound	13	to	14
Sugar, New Orleans, fair to good, per pound	8¼	to	8¾
Tobacco, lugs ..... per lb	15	to	20
leaf ..... do...	28	to	30
Cotton, ordinary to good ordinary ..... per lb.	10¾	to	11¾
low middling to good middling ..... per lb.	12½	to	13⅜
Wool, fleece-washed, common to fine ..... per lb.	38	to	43
tub-washed ..... do...	43	to	58
unwashed, clothing .do...	28	to	30
unwashed, combing .do...	34	to	38
pulled ..... do...	31	to	38
CHICAGO.			
Flour, choice winter extras, per barrel	7 00	to	8 00
common to good white winter extras .. per bbl.	5 75	to	6 75
choice spring extras .do...	5 50	to	6 00
patent spring ..... do...	6 75	to	8 50
spring superfines .... do...	3 75	to	4 50
Wheat, No. 1 spring ... per bush.	— —	to	— —
No. 2 spring ..... do...	1 08½	to	1 13
No. 3 spring ..... do...	94	to	94½
Corn, No. 2 ..... do...	51½	to	52
Rye, No. 2 ..... do...	68	to	68½
Barley, No. 2 ..... do...	81	to	83½

Articles.	Prices.		
CHICAGO—Continued.			
Oats, No. 2 ..... per bush.	$0 31½	to	$0 31½
Hay, timothy ..... per ton.	14 00	to	16 00
prairie ..... do...	8 50	to	11 00
Beef, mess ..... per bbl.	10 00	to	— —
extra mess ..... do...	11 00	to	— —
Pork, mess ..... do...	21 00	to	21 50
prime mess ..... do...	18 00	to	18 25
extra prime ..... do...	14 00	to	14 25
Lard ..... per lb.	12 1-6	to	— —
Butter, choice to fancy .... do...	30	to	33
medium to good .. do...	20	to	24
Cheese, good to fancy ..... do...	11½	to	13
Sugar, brown, common to choice, per pound	7⅞	to	9½
Wool, tub-washed ..... per lb.	44	to	52
fleece-washed ..... do...	38	to	44
unwashed ..... do...	25	to	33
pulled ..... do...	—	to	— —
SAINT LOUIS.			
Flour, winter, common to choice, per bbl	4 00	to	6 75
spring ..... per bbl.	— —	to	— —
Wheat, white winter .. per bush.	1 10	to	1 35
red winter ..... do...	1 00	to	1 55
spring ..... do...	— —	to	— —
Corn ..... do...	46	to	68
Rye ..... do...	50	to	68
Barley ..... do...	55	to	1 30
Oats ..... do...	28	to	42
Hay, timothy ..... per ton.	16 50	to	18 00
prairie ..... do...	8 00	to	10 50
Beef, mess ..... per bbl.	14 00	to	14 50
Pork, mess ..... do...	21 60	to	22 00
Lard ..... per lb.	14½	to	14¾
Butter, prime to choice dairy, per pound	28	to	30
country packed ... per lb.	20	to	25
Cheese, Ohio factory ..... do...	12½	to	13½
N. Y. factory ..... do...	13	to	14
Tobacco, lugs ..... do...	5½	to	5⅝
leaf ..... do...	7½	to	17
Cotton, ordinary to good ordinary ..... per lb.	10½	to	11¼
low middling to good middling ..... per lb.	12	to	13¼
Wool, tub-washed ..... do...	49	to	56
fleece-washed ..... do...	47	to	48½
unwashed ..... do...	25	to	35
NEW ORLEANS.			
Flour, superfine ..... per bbl.	4 30	to	4 50
extra ..... do...	4 75	to	5 75
choice to fancy ..... do...	6 00	to	8 25
Corn ..... per bush.	75	to	85
Oats ..... do...	43	to	54
Hay, choice ..... per ton.	27 00	to	— —
prime ..... do...	22 00	to	25 00
Beef, Texas ..... per bbl.	10 00	to	10 50
western ..... do...	16 00	to	— —
Fulton market ... per ½ bbl.	11 50	to	12 00
Pork, mess ..... per bbl.	24 00	to	24 37½
Lard ..... per lb.	14½	to	15¼
Butter, choice Goshen ..... do...	33	to	35
choice western ..... do...	23	to	28
Cheese, choice western factory, per pound	13½	to	14½
N. Y. cream ..... per lb.	16	to	— —
Sugar, fair to fully fair ..... do...	7	to	7⅞
prime to choice ..... do...	8½	to	— —
clarified, white, and yellow ..... per lb.	8½	to	9¼
Tobacco, lugs ..... do...	7	to	9
leaf ..... do...	9½	to	17

Market-prices of farm-products, &c.—Continued.

Articles.	Prices.	Articles.	Prices.
NEW ORLEANS—Continued.		SAN FRANCISCO—Continued.	
Cotton, ordinary to good ordinary ..... per lb	— — to $0 11¾	Corn, white ..... per cental.	$1 20 to $1 40
low middling to good middling ..... per lb.	$0 12¼ to 14⅜	yellow ..... do...	1 17½ to 1 20
Wool, lake ..... do...	— — to — —	Hay, State ..... per ton.	12 00 to 21 00
SAN FRANCISCO.		Beef, mess ..... per bbl.	8 00 to 10 00
Flour, superfine ..... per bbl.	4 50 to 5 00	family mess ..... per ½ bbl.	8 00 to 10 00
extra ..... do...	5 25 to 5 75	Pork, mess ..... per bbl.	22 00 to 23 00
family and fancy .... do...	6 00 to 6 50	prime mess ..... do..	17 00 to 18 00
Wheat, California .... per cental.	1 85 to 2 05	Lard ..... per lb.	13½ to 16
Oregon ..... do...	2 00 to 2 05	Butter, overland ..... do..	15 to 25
Barley ..... do...	1 25 to 1 50	California ..... do..	30 to 60
Oats ..... do...	1 65 to 2 00	Oregon ..... do..	20 to 25
		Cheese ..... do..	12½ to 15
		Wool, native ..... do..	10 to 15
		California ..... do..	15 to 25
		Oregon ..... do..	15 to 25

LIVE-STOCK MARKETS.

NEW YORK.		CHICAGO.	
Cattle, extra beeves .. per cental.	$13 00 to — —	Cattle, extra-graded steers, 1,300 to 1,550 pounds, per cental	— — to — —
good to prime ..... do....	11 75 to $12 75	choice beeves, 1,250 to 1,450 pounds, per cental.	$5 80 to — —
common to fair ..... do....	8 00 to 11 50	good beeves, 1,100 to 1,350 pounds ..... per cental.	4 75 to $5 20
Texans ..... do....	6 50 to 8 50	medium, 1,150 to 1,250 pounds ..... per cental.	4 40 to 4 65
milch-cows ..... per head.	— — to — —	inferior natives .... do....	2 55 to 4 05
veal calves .... per cental.	— — to — —	Texans, through droves, per cental	2 75 to 3 75
Sheep ..... do....	4 75 to 6 00	Sheep ..... per cental	3 00 to 5 00
Swine ..... do....	8 66¼ to — —	Swine ..... do....	6 50 to 8 00
PHILADELPHIA.		SAINT LOUIS.	
Cattle, prime beeves .. per cental.	7 00 to 7 50	Cattle, good to choice native steers, per cental	5 25 to 5 50
fair to good ..... do....	5 50 to 6 75	common to fair natives, per cental	3 50 to 4 50
common ..... do....	3 50 to 5 50	inferior and common, per cental	2 25 to 3 50
Sheep ..... do....	4 50 to 6 00	Texans, fair to choice, per cental	3 00 to 4 25
Swine, corn-fed ..... do....	11 50 to 12 25	Sheep ..... per cental.	3 00 to 4 75
BALTIMORE.		Swine ..... do....	5 25 to 7 25
Cattle, best beeves .... per cental.	5 62 to 6 12	Horses, plugs ..... per head.	25 00 to 50 00
first quality ..... do....	4 50 to 5 62	plain ..... do....	60 00 to 70 00
medium or good quality, per cental	4 00 to 4 50	street-car ..... do....	75 00 to 125 00
ordinary ..... per cental.	2 50 to 3 50	heavy-draught .... do....	115 00 to 125 00
general average of the market ..... per cental.	4 12	good drivers ..... do....	100 00 to 150 00
most of the sales ... do....	3 50 to 4 75	extra ..... do....	175 00 to 200 00
milch-cows ..... per head.	35 00 to 40 00	Mules, 14 to 15 hands high. do....	80 00 to 120 00
Sheep ..... per cental.	4 00 to 5 50	15 to 16 hands high. do....	120 00 to 180 00
Swine ..... do....	10 50 to 10 75	extra ..... do....	175 00 to 200 00
CINCINNATI.		NEW ORLEANS.	
Cattle, good to prime butchers' steers ..... per cental.	4 00 to 5 50	Cattle, Texas beeves, choice, per head	40 00 to 46 00
fair to medium .... do....	3 00 to 4 00	first quality .... per head.	30 00 to 35 00
common ..... do....	2 00 to 3 00	second quality ..... do....	20 00 to 25 00
milch cows .... per head.	30 00 to 60 00	western ..... per cental.	— — to — —
veal calves .... per cental.	2 50 to 7 00	milch-cows ..... per head.	— — to 90 00
Sheep ..... do....	3 25 to 5 25	Sheep ..... do....	2 00 to 6 00
Swine ..... do....	6 75 to 7 60	Swine ..... per cental.	8 00 to 11 00

FOREIGN MARKETS.

The sales of English wheat in the United Kingdom, during the first week of November, amounted to 52,392 quarters, at 47*s.* 4*d.*, against

54,414 quarters, at 44*s.* 1*d.*, during the corresponding week of 1874. The London averages were 48*s.* 9*d.*, on 2,592 quarters. The imports into the United Kingdom during the last week of October were 1,286,686 hundredweight. The following Monday opened upon a moderate supply of British wheat, but with not less than 92,000 quarters of foreign wheat, of which 60,000 were from Russia and 12,000 from the United States. In Paris the wheat-offers by growers were scanty, but numerous holders at second-hand were ready to dispose of their stocks. Notwithstanding some local enhancement in the provinces, it was difficult to secure previous rates. Prices ranged from 42*s.* to 50*s.* per quarter, the latter for fine white. At Havre, fine American and Chilian received offers of 49*s.* 6*d.* per quarter. In the French country-markets offers were not numerous, and prices in consequence were steady. During the week 9 local markets had advanced, against 23 the previous week; 63 were from calm to firm, against 62 the previous week; 21 either declined, or showed such tendency, against 14 the previous week. At Brussels the top price of native wheat was 51*s.* per quarter. Wheat on the spot, at Hamburg, was calm at 43*s.*; at Cologne, firm at 44*s.*; at Berlin it stood at 42*s.* 6*d.*, with an upward tendency; at Dantzig it brought 55*s.* to 58*s.*

In Mark Lane, Essex and Kent white, 43*s.* to 55*s.* per quarter; ditto red, 42*s.* to 50*s.*; Norfolk, Lincolnshire, and Yorkshire, red, 41*s.* to 50*s.*; foreign wheats, Dantzig, 52*s.* to 57*s.*; Königsberg, 49*s.* to 54*s.*; Rostock, 47*s.* to 50*s.*; Silesian red, 46*s.* to 51*s.*; Pomeranian, Mecklenburg, and Uckermark, 46*s.* to 49*s.*; Ghirka, 45*s.* to 47*s.*; Russian hard, 42*s.* to 45*s.*; Saxenska, 46*s.* to 50*s.*; Danish and Holstein red, 46*s.* to 49*s.* American red, 45*s.* to 49*s.*; Chilian white, 51*s.*; Californian, 53*s.*; Australian, 52*s.* to 56*s.*

In Liverpool, British white was quoted at 10*s.* to 10*s.* 4*d.* per cental; ditto red, 9*s.* 6*d.* to 9*s.* 10*d.*; Canadian white, 10*s.* 6*d.* to 11*s.*; American white, 10*s.* 6*d.* to 11*s.* 6*d.*; ditto red winter, 10*s.* 3*d.* to 10*s.* 8*d.*; No. 1 Minnesota, 10*s.* to 10*s.* 3*d.*; spring No. 1, 10*s.* to 10*s.* 1*d.*; spring No. 2, 9*s.* to 9*s.* 8*d.*; spring No. 3, 8*s.* 10*d.* to 9*s.*; French, 10*s.* to 10*s.* 3*d.*; Bombay, 9*s.* 3*d.* to 10*s.* 6*d.*; Kurrachee, 8*s.* 11*d.* to 9*s.* 1*d.*; Egyptian, 7*s.* 7*d.* to 10*s.* 6*d.*; Californian, 10*s.* 11*d.* to 11*s.* 1*d.*; ditto club, 11*s.* 5*d.* to 11*s.* 8*d.*; Oregon, 11*s.* 5*d.* to 11*s.* 9*d.*; Chilian, 10*s.* 5*d.* to 10*s.* 7*d.*; Australian, 11*s.* 8*d.* to 11*s.* 10*d.*

Flour.—The imports of flour into the United Kingdom, during the last week of October, amounted to 144,549 hundred-weight. The following week opened with good arrivals of British flour, but the trade was quiet, only the best sorts of either domestic or foreign flour being sought for retail. In Mark Lane, the best town-households were quoted at 43*s.* to 47*s.* per 280 pounds; best country-households, 37*s.* to 40*s.*; Norfolk and Suffolk, 33*s.* to 35*s.*; American, 24*s.* to 29*s.* per barrel. In Liverpool, English and Irish superfines, 37*s.* to 39*s.* per 280 pounds; ditto extra, 40*s.* to 42*s.*; French, 40*s.* to 48*s.* 6*d.*; Trieste, 50*s.* to 62*s.*; Chilian, 36*s.* to 39*s.*; Californian, 39*s.* to 40*s.*; American, western and extra State, 26*s.* to 28*s.*; Baltimore and Philadelphia, 26*s.* to 31*s.*; Ohio and extra, 28*s.* 6*d.* to 31*s.*; Canadian and extra, 28*s.* 6*d.* to 31*s.* 6*d.* In Paris, prices for consumption ranged from 34*s.* 7*d.* to 38*s.* 7*d.* per 280 pounds; superior flour, for November, was held at 36*s.* 1*d.*

Maize.—In Mark Lane the supply of maize was fair, but previous values were maintained. White and yellow were quoted at 30*s.* to 32*s.* per quarter. At Liverpool, American white brought 32*s.* 6*d.* per 480 pounds; ditto, mixed, 31*s.* 6*d.* to 31*s.* 9*d.*; Galatz, 32*s.* 6*d.*; Trieste, 31*s.* to 31*s.* 6*d.*; Dais, 26*s.* to 29*s.* At Paris the best old maize was 38*s.* per quarter.

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