OATS.

Bushels of oats produced in 1860.

STATES.	BUSHELS.	STATES.	BUSHELS.
Alabama	682, 179	Pennsylvania	27, 387, 147
Arkansas	475, 268	Rhode Island	244, 453
California	1, 043, 006	South Carolina	936, 974
Connecticut	1, 522, 218	Tennessee	2, 267, 814
Delaware	1, 046, 910	Texas	985, 889
Florida	46, 899	Vermont	3, 630, 267
Georgia	1, 231, 817	Virginia	10, 186, 720
Illinois	15, 220, 029	Wisconsin	11, 059, 260
Indiana	5, 317, 831		
Iowa	5, 887, 645	Total, States	172, 330, 722
Kansas	88, 325		
Kentucky	4, 617, 029		
Louisiana	89, 377	TERRITORIES.	
Maine	2, 988, 939		
Maryland	3, 959, 298	District of Columbia	29, 548
Massachusetts	1, 180, 075	Dakota	2, 540
Michigan	4, 036, 980	Nebraska	74, 502
Minnesota	2, 176, 002	Nevada	1, 082
Mississippi	221, 235	New Mexico	7, 246
Missouri	3, 680, 870	Utah	63, 211
New Hampshire	1, 329, 233	Washington	134, 334
New Jersey	4, 539, 132		
New York	35, 175, 134	Total, Territories	312, 463
North Carolina	2, 781, 860		
Ohio	15, 409, 234	Aggregate	172, 643, 185
Oregon	885, 673		

More oats than wheat is raised in the United States by over a million bushels. In 1860 there were 172,643,185 bushels of oats raised, against 146,584,179 bushels in 1850. The increase is by no means equal to the increase in population, and is far less than the increase in wheat and Indian corn.

New York is the greatest oat-growing State in the Union, producing 35,175,134 bushels. Pennsylvania comes next, producing 27,387,147 bushels. Ohio stands third, producing 15,409,234 bushels. Illinois is fourth, producing 15,220,029 bushels. Wisconsin stands fifth, producing 11,059,270 bushels. Virginia comes next, producing 10,186,720 bushels.

The four States of New York, Pennsylvania, Ohio, and Illinois, produce more oats than all the other States and Territories.

The New England States produced 10,766,523 bushels in 1860, against 8,101,268 in 1850, as follows:

	1860.	1850.
Maine	2, 988, 939	2, 181, 037
New Hampshire	1, 329, 233	973, 381
Vermont	3, 630, 267	2, 307, 734
Massachusetts	1, 180, 075	1, 165, 146
Rhode Island	234, 453	215, 232
Connecticut	1, 522, 218	1, 258, 738
	10, 885, 185	8, 101, 268

Vermont is the largest oat-producing State in New England, Maine coming next. Both these States fell off in the production of Indian corn in 1860 as compared with 1850; but the oat crop has materially increased. In none of the New England States has there been any falling off in the production of oats, while in the aggregate there has been an increase of over 25 per cent.

In the middle States, the oat crop has increased from 54,323,836 bushels in 1850, to 72,137,170 bushels in 1860, as follows:

	1860	1850.
New York	35, 175, 133	26, 552, 814
New Jersey	4, 539, 132	3, 378, 063
Maryland	3, 959, 298	2, 242, 151
Pennsylvania	27, 387, 149	21, 538, 156
Delaware	1, 046, 910	604, 518
District of Columbia	29, 548	8, 134
	72, 137, 170	54, 323, 836

There is no falling off in any of the middle States. The increase from 1850 to 1860, in the aggregate, is over 25 per cent.

In 1860, as compared with 1850, the production of wheat in the middle States, as we have before remarked, fell off nearly five millions of bushels. On the other hand, the crop of Indian corn *increased* in the same period nearly fourteen millions of bushels; and, as will be seen from the above table, the crop of oats also increased in the same period nearly eighteen millions of bushels. In other words, while we lose five million bushels of wheat, we gain nearly thirty-two million bushels of Indian corn and oats. The decrease in the production of wheat, caused by the midge, is not an unmixed evil—the land has been devoted to other crops.

The following table shows the amount of oats raised in the western States in 1860 and 1850:

	1860.	1850.
Illinois	15, 220, 029	10, 087, 241
Indiana	5, 317, 381	5, 655, 014
Iowa	5, 887, 645	1, 524, 345
Kansas	88, 325	.....
Kentucky	4, 617, 029	8, 201, 311
Michigan	4, 036, 980	2, 866, 056
Minnesota	2, 176, 002	30, 582
Missouri	3, 680, 870	5, 278, 079
Ohio	15, 409, 234	13, 472, 742
Wisconsin	11, 059, 260	3, 414, 672
Nebraska	74, 502	.....
	67, 567, 257	48, 530, 042

Ohio produces more oats than any other western State. Illinois produces nearly as much, and shows a much greater increase than Ohio since 1850. Wisconsin comes next. The production of oats in this State has increased from less than three and a half million bushels in 1850 to over eleven million bushels in 1860.

The three States of Ohio, Illinois, and Wisconsin produce over 62 per cent. of all the oats raised in the western States. In round numbers these three States produce forty-two million bushels of oats, while all the other western States produce only twenty-five million bushels.

In the production of oats, as in other crops, Minnesota shows a rapid increase. In 1860 she produced over two million bushels of oats against thirty thousand bushels in 1850. Iowa, Wisconsin, and Michigan show a marked increase in the yield of oats. Indiana, on the other hand, has slightly decreased. Kentucky has fallen off nearly one-half. Missouri also shows a marked decrease in the oat crop, falling off from five million bushels in 1850 to three and a half million bushels in 1860.

On the whole, the western States do not show as great an increase in the production of oats as of Indian corn or wheat. The most remarkable decrease in the oat crop, however, is in the southern States. This will be seen from the following table, showing the production of oats in the different southern States in 1860 and 1850:

	1860.	1850.
Alabama	682, 179	2, 965, 696
Arkansas	475, 268	656, 183
Florida	46, 899	66, 586
Georgia	1, 231, 817	3, 820, 044
Louisiana	89, 377	89, 637
Mississippi	221, 235	1, 503, 288
North Carolina	2, 781, 860	4, 052, 078
South Carolina	936, 974	2, 322, 155
Tennessee	2, 267, 814	7, 703, 086
Texas	985, 889	199, 017
Virginia	10, 186, 720	10, 179, 144
	19, 906, 032	33, 566, 913

With the exception of Texas and Virginia, the oat crop has fallen off in every southern State. The crop in Alabama fell off from nearly three million bushels in 1850 to less than three-quarters of a million in 1860. Mississippi falls off from one and a half million to two hundred and twenty thousand, and other States, as will be seen from the table, also fall off to an equal extent.

This rapid decrease in the production of oats in the slave States is quite curious. In the table showing the amount of oats raised in the western States it will be observed that Kentucky and Wisconsin showed a marked falling off in the production of oats. It is probable, however, that the system of labor there adopted, has less to do with the fact than the nature of the climate. Oats are essentially a northern crop; and, while they flourish well in the southwest, it is doubtless found that other crops which do not thrive so well in a more northern latitude can be raised south with greater profit.

The following table shows the production of oats in the Pacific States:

	1860.	1850.
California	1, 043, 006	.....
Oregon	885, 673	61, 214
New Mexico	7, 246	5
Washington	134, 334	.....
Utah	63, 211	10, 900
	2, 133, 420	72, 119

California, which was unreported in 1850, produces over a million bushels in 1860. Oregon also has increased to an almost equal extent.

The following table shows the production of oats in the different sections of the country in 1850 and in 1860 in proportion to population:

	1860.	1850.
New England States	3.43	2.95
Middle States	8.65	8.20
Western States	6.51	7.59
Southern States	2.18	4.46
Pacific States	4.00	0.40
United States	5.49	6.32

The New England States produced about the same quantity of oats as of Indian corn; but, while there has been a falling off in the production of Indian corn, in proportion to population, between 1850 and 1860, the production of oats has increased about half a bushel to each inhabitant, or from 2.95 bushels in 1850 to 3.43 bushels in 1860.

The middle States raise more oats, in proportion to population, than any other section. In the production of wheat there has been a great falling off from 1850 to 1860, and in Indian corn there was a slight decline in proportion to population; but the oat crop has increased more than enough to make up for the deficiency in the corn crop, though by no means sufficient, in proportion to population, to make up for the decrease in the yield of wheat. In 1860 the middle States produced about nine bushels of Indian corn to each person, and a little over eight and one-half bushels of oats.

The western States, which produce over 45 bushels of Indian corn, produce only six and one-half bushels of oats to each inhabitant. The increase in the production of oats in the western States does not keep pace with the increase in population. In 1860, as compared with 1850, there is a falling off of over one bushel of oats to each person.

The southern States produced nearly four and one-half bushels of oats to each person in 1850, and only a fraction over two bushels in 1860.

The Pacific States, in 1860, produced four bushels of oats to each person.

Taking the country as a whole, the production of oats has not kept pace with the increase in population. In 1850 we produced six and three-tenths bushels to each person, and in 1860 less than five and one-half bushels.

THE CULTURE OF OATS.

This grain, while paying well for good cultivation, can be raised with less labor than any other cereal crop, and will thrive on a great variety of soils. Where extra care is taken in preparing and enriching the land, the best and heaviest oats are produced on a clayey loam; but, as a general rule, in this country, oats are raised on low, moist, rather mucky soils. Unlike barley, they succeed on sod-land. They are frequently sown on new, moist land, that would otherwise be planted with Indian corn. They require less labor in planting and cultivating than corn, and are sown to a considerable extent on this account.

In New York and Pennsylvania, which produce more than one-third of all the oats raised in the United States and Territories, oats are frequently sown on land intended for wheat, taking the place formerly occupied by a summer fallow. Where the land is rich enough, good wheat is often obtained after oats; but, as a general rule, the oats are obtained at the expense of the succeeding wheat crop.

BARLEY.

Bushels of barley produced in 1860.

STATES.	BUSHELS.	STATES.	BUSHELS.
Alabama	15, 135	Pennsylvania	530, 714
Arkansas	3, 158	Rhode Island	40, 993
California	4, 415, 426	South Carolina	11, 490
Connecticut	20, 813	Tennessee	25, 144
Delaware	3, 646	Texas	67, 562
Florida	8, 369	Vermont	79, 211
Georgia	14, 682	Virginia	68, 846
Illinois	1, 036, 338	Wisconsin	707, 307
Indiana	382, 245		
Iowa	467, 103	Total, States	15, 802, 322
Kansas	4, 716		
Kentucky	270, 685		
Louisiana	224	TERRITORIES.	
Maine	802, 108		
Maryland	17, 350	District of Columbia	175
Massachusetts	134, 891	Dakota	.....
Michigan	307, 868	Nebraska	1, 108
Minnesota	109, 668	Nevada	1, 597
Mississippi	1, 875	New Mexico	6, 099
Missouri	228, 502	Utah	9, 976
New Hampshire	121, 103	Washington	4, 621
New Jersey	24, 915		
New York	4, 186, 668	Total, Territories	23, 576
North Carolina	3, 445		
Ohio	1, 663, 868	Aggregate	15, 825, 898
Oregon	26, 254		

The climate of the United States is not as well adapted to the production of barley as of wheat. Barley delights in a moist climate and an extended growing season. It is for this reason that English barley is superior to that of any other country. While we can raise wheat of a quality superior to that of England, our best barley would not be used by a London maltster.

Barley is now used in this country principally for beer-making purposes. With the rapid increase in our foreign population there is yearly an increased demand for barley, and the price has advanced much more than that of any other of our ordinary grain crops. Weight for weight, barley of late years has brought a higher price than wheat, and, where the soil and climate are well suited to its production, there are few crops more profitable. In favorable circumstances it is believed that three bushels of barley can be raised with as little expense as two bushels of wheat. Barley, of all ordinary crops, however, requires good culture. It is only on well-drained and highly cultivated farms that we can depend for raising good crops.

As compared with Indian corn, wheat, and oats, barley occupies a very subordinate position in American agriculture. In 1860 the total crop of the States and Territories was 15,825,898 bushels; while, in round numbers, there were 838,000,000 bushels of Indian corn, 173,000,000 bushels of wheat, and 172,000,000 bushels of oats. As compared with 1850, however, the increase in the production of barley has been greater than in any of these crops. In round numbers, the barley crop in 1850 was 5,000,000 bushels, and in 1860 15,000,000 bushels, or an increase of 200 per cent. This is

due principally, as before remarked, to the increased demand for barley for malting purposes, and the high price which, relatively to other crops, and to the expense of its cultivation, it commands in market.

The following table shows the amount of barley raised in the New England States in 1860 as compared with 1850:

	1860.	1850.
Connecticut	20, 813	19, 099
Massachusetts	134, 891	112, 385
Vermont	79, 211	42, 150
Rhode Island	40, 993	18, 875
New Hampshire	121, 103	70, 256
Maine	802, 108	151, 731
	1, 199, 119	414, 496

It will be seen that the crop has increased in every one of the New England States. In the aggregate there was nearly three times as much raised in 1860 as in 1850. The greatest increase is in Maine. More than five times as much was raised in this State in 1860 as in 1850.

The following table shows the amount of barley raised in the middle States in 1860 as compared with 1850:

	1860.	1850.
New York	4, 186, 667	3, 585, 059
Pennsylvania	530, 716	165, 584
New Jersey	24, 915	6, 492
Delaware	3, 646	56
Maryland	17, 350	745
District of Columbia	175	75
	4, 753, 469	3, 758, 011

The production of barley in each of the middle States has increased since 1850; but the increase is by no means equal to that in the New England States. New York produces over 85 per cent. of all the barley raised in the middle States. The increased per cent., however, in this State has been far less than in the other States. This, however, is due to the fact that, as compared with other States, her barley crop was so large in 1850. She produced over half a million bushels more barley in 1860 than in 1850, which is nearly as much as the total crop in the other middle States.

Pennsylvania, which raised thirteen million bushels of wheat in 1860, while New York raised only eight and a half million bushels, and twenty-eight million bushels of Indian corn to twenty million bushels in New York, produces only a little more than half a million bushels of barley, while New York produces over four million bushels.

The following table shows the amount of barley raised in the western States in 1860 as compared with 1850:

	1860.	1850.
Illinois	1, 036, 338	110, 795
Indiana	382, 245	45, 483
Iowa	467, 103	25, 093
Kansas	4, 716	.....
Kentucky	270, 685	95, 343
Michigan	307, 868	75, 249
Minnesota	109, 668	1, 216
Missouri	228, 502	9, 631
Ohio	1, 663, 868	354, 358
Nebraska	1, 108	.....
	4, 472, 101	717, 168

Western States, inclusive, produce but little more barley than the State of New York alone. Ohio produces more barley than any other western State. Illinois comes next. These two States produce about one million bushels more barley than all the other western States.

Though the aggregate production of barley in the western States is so small, the increase since 1850 has been very great. The crop of Illinois has increased eight hundred and fifty per cent. Iowa even more, or about eighteen hundred per cent. Missouri has increased still more rapidly, or nearly two thousand three hundred per cent.

The following table shows the amount of barley raised in the southern States in 1860 as compared with 1850:

	1860.	1850.
Alabama	15, 135	2, 958
Arkansas	3, 158	177
Florida	8, 369	.....
Georgia	14, 682	11, 501
Louisiana	224	.....
Mississippi	1, 875	228
North Carolina	3, 445	2, 735
South Carolina	11, 490	4, 583
Tennessee	25, 144	2, 737
Texas	67, 562	4, 776
Virginia	68, 846	25, 437
	219, 930	56, 132

The production of barley in the southern States is quite small. The single State of Maine alone produces four times as much barley as all the southern States. The increase, however, since 1850, is very decided, or over three hundred per cent. Virginia produces nearly one-third of all the barley raised in the southern States. Texas, Tennessee, Georgia, Alabama, and South Carolina are the principal southern barley-growing States; but even in these States the crop is very small.

The following table shows the amount of barley raised in the Pacific States in 1860 as compared with 1850:

	1860.	1850.
California	4, 415, 426	9, 712
Oregon	26, 254	.....
New Mexico	6, 099	5
Washington	4, 621	.....
Utah	9, 976	1, 799
	4, 462, 376	11, 516

California produces nearly all the barley raised in the Pacific States. It is a noteworthy fact, that this young State produces more barley than any other State in the Union. California and New York produce more barley than all the other States and Territories included.

The following table shows the amount of barley raised in different sections of the United States in 1860 and 1850, in proportion to the population:

	1860.	1850.
New England States	0.38	0.15
Middle States	0.54	0.56
Western States	0.43	0.11
Southern States	0.02	0.001
Pacific States	7.88	0.05
United States and Territories	0.40	0.22

It will be seen that the production of barley in all the States more than keeps up with the increase in population. In fact the amount of barley raised to each person in 1860 was nearly twice as much as in 1850. It was more than double in the New England States; nearly four times as great in the western States, and about fifteen times as great in the Pacific States.

In the middle States alone, has the increase in the crop fallen below the increase in population.

CULTURE OF BARLEY.

As before remarked, barley requires good cultivation. It delights in a warm, active, fertile soil. It does not do well on sod-land. In England it is usually sown on light, sandy soils, after a crop of turnips that have been eaten on the land by sheep. The droppings of the sheep enrich the land, while the small feet of the sheep consolidate the light, porous soil. In this country barley appears to flourish on heavier soils, especially if they are thoroughly pulverized. At all events the soil must be well drained and the crop sown in good season in the spring. Our season is so short, and the roots of barley extend, as compared with winter wheat, over such a small surface, that it is exceedingly important that the soil contain a liberal supply of plant-food in an active condition.

Winter barley is grown to a considerable extent in the southwestern States, and its cultivation is rapidly increasing in western New York, where it takes the place, to a certain extent, of winter wheat. Winter barley is heavier than spring barley, and commands a higher price. It is sown at the same time as winter wheat, and requires the same cultivation.

BUCKWHEAT.

Bushels of buckwheat produced in 1860.

STATES.	BUSHELS.	STATES	BUSHELS.
Alabama	1,347	Pennsylvania	5,572,024
Arkansas	509	Rhode Island	3,573
California	76,887	South Carolina	602
Connecticut	309,107	Tennessee	14,481
Delaware	16,355	Texas	1,349
Florida	.....	Vermont	225,415
Georgia	2,023	Virginia	478,090
Illinois	324,117	Wisconsin	38,987
Indiana	396,989		
Iowa	215,705	Total, States	17,558,253
Kansas	41,575		
Kentucky	18,928		
Louisiana	160	TERRITORIES.	
Maine	239,519		
Maryland	212,338	District of Columbia	445
Massachusetts	123,202	Dakota	115
Michigan	529,916	Nebraska	12,224
Minnesota	28,052	Nevada	.....
Mississippi	1,699	New Mexico	6
Missouri	182,292	Utah	68
New Hampshire	89,996	Washington	707
New Jersey	877,386		
New York	5,126,307	Total, Territories	13,565
North Carolina	35,924		
Ohio	2,370,650	Aggregate	17,571,818
Oregon	2,749		

Buckwheat is an important crop in many sections of the United States. It has properties which render it peculiarly well suited to take the place it occupies among our grain crops. It is not botanically a cereal, but it affords a highly nutritious grain, which is used to a considerable extent as food for man and animals. It can be sown later in the season than any other grain-crop. In favorable seasons, and on good soil, the yield is very large. It is so rampant a grower that it smothers out weeds, and is frequently sown for this purpose. It is also grown as a green-crop for ploughing under as manure. Being sown so late in the season, it can be grown on land that is too wet for other crops. On the other hand, it succeeds well on rough, hilly land, where almost any other crop would perish.

The total production of buckwheat in the United States and Territories in 1840 was 7,291,743 bushels, in 1850 8,956,912 bushels, and in 1860 17,571,818 bushels. The crop of 1860 was nearly double what it was in 1850, showing a larger increase than any other grain-crop.

The following table shows the amount of buckwheat raised in the New England States in 1860, as compared with 1850:

	1860.	1850.
Connecticut	309, 107	229, 297
Maine	339, 519	104, 523
Massachusetts	123, 202	105, 895
New Hampshire	89, 996	65, 265
Rhode Island	3, 573	1, 245
Vermont	225, 415	209, 819
	1, 090, 812	716, 044

There is a large increase in the crop of buckwheat in the New England States in 1860, as compared with 1850; but the crop of 1850 was less than in 1840, being 778,084 bushels in 1840, against 716,044 bushels in 1860.

The largest increase is in Maine. The crop of buckwheat in this State in 1840 was 51,543 bushels, in 1850 104,523 bushels, and in 1860 330,519 bushels.

Connecticut raised 303,043 bushels of buckwheat in 1840, 229,297 bushels in 1850, and 309,107 bushels in 1860. These fluctuations in the produce of buckwheat are doubtless caused by the season, as this crop is more dependent on the weather than any other.

The following table shows the amount of buckwheat raised in the middle States in 1860, as compared with 1850:

	1860.	1850.
New York	5, 126, 307	3, 183, 955
New Jersey	817, 386	878, 934
Pennsylvania	5, 572, 024	2, 193, 692
Maryland	212, 338	103, 671
Delaware	16, 355	8, 615
District of Columbia	445	378
	11, 744, 855	6, 369, 245

In Pennsylvania and New York buckwheat is an important crop, and the above figures show that its cultivation is rapidly increasing. The crop has nearly doubled in these States since 1850. The grain is used extensively as food for sheep in winter, and there are few crops which for the labor attending it afford a better profit.

The following table shows the amount of buckwheat raised in the western States in 1860, as compared with 1850:

	1860.	1850.
Ohio	2,370,650	638,060
Indiana	396,989	149,740
Michigan	529,916	472,917
Illinois	324,117	184,504
Wisconsin	38,987	79,878
Minnesota	28,052	515
Iowa	215,705	52,516
Missouri	182,292	23,641
Kentucky	18,928	16,097
Kansas	41,575	.....
Nebraska	12,224	.....
	4,159,435	1,617,864

It will be seen that Ohio raises more buckwheat than all the other western States, and that the crop has rapidly increased since 1850.

Michigan raises the next largest crop of buckwheat, though but little more than one quarter of the amount raised in Ohio.

Indiana, Illinois, Iowa, and Missouri are evidently giving some attention to buckwheat, but it is a very subordinate crop in these great corn-growing States.

The following table shows the amount of buckwheat raised in the southern States in 1860 as compared with 1850:

	1860.	1850.
Virginia	478,090	214,898
North Carolina	35,924	16,704
South Carolina	602	283
Georgia	2,023	250
Alabama	1,347	348
Louisiana	160	3
Texas	1,349	59
Mississippi	1,699	1,121
Arkansas	509	175
Tennessee	14,481	19,427
Florida	.....	55
	536,184	253,323

The crop of buckwheat has more than doubled in the southern States since 1850. It is, however, a very small crop in the south.

Virginia produces eight times as much as all the other southern States together. It is probable that the bulk of the crop is raised in western Virginia, where the agriculture assimilates closely to that of Pennsylvania and Ohio.

The following table shows the amount of buckwheat raised in the Pacific States in 1860, as compared with 1850:

	1860.	1850.
California	76,887	....
Oregon	2,749	....
New Mexico	6	100
Washington	707	....
Utah	68	332
	80,417	432

In buckwheat, as in every other agricultural product, California shows rapid progress. It is clear, however, that this crop receives but little attention on the Pacific coast.

The following table shows the amount of buckwheat raised in the different sections of the United States in proportion to population:

	1860.	1850.
New England States	0.35	0.26
Middle States	1.41	0.96
Western States	0.41	0.25
Southern States	0.09	0.03
Pacific States	0.14	0.002
Whole United States and Territories	0.56	0.38

Buckwheat is one of the few crops that increases more rapidly in the United States than the population. In 1850 we raised in the whole United States and Territories about twelve quarts to each person, and in 1860 a little over half a bushel.

The middle States in 1850 raised nearly a bushel of buckwheat to each inhabitant, and in 1860 nearly a bushel and a half to each person.

The western States raise less than half a bushel to each person, and New England seven-twentieths of a bushel. The southern States raise only nine hundredths of a bushel to each inhabitant.

PEAS AND BEANS.

Bushels of peas and beans produced in 1860.

STATES.	BUSHELS.	STATES.	BUSHELS.
Alabama	1,482,036	Pennsylvania	123,090
Arkansas	440,472	Rhode Island	7,698
California	165,574	South Carolina	1,728,074
Connecticut	25,864	Tennessee	547,803
Delaware	7,438	Texas	341,961
Florida	363,217	Vermont	70,654
Georgia	1,765,214	Virginia	515,168
Illinois	108,028	Wisconsin	99,484
Indiana	79,902		
Iowa	41,081	Total, States	15,001,017
Kansas	9,827		
Kentucky	288,346		
Louisiana	431,148	TERRITORIES.	
Maine	246,915		
Maryland	34,407	District of Columbia	3,749
Massachusetts	45,246	Dakota	286
Michigan	165,128	Nebraska	5,029
Minnesota	18,988	Nevada	15
Mississippi	1,954,666	New Mexico	38,514
Missouri	107,999	Utah	2,535
New Hampshire	79,454	Washington	10,850
New Jersey	27,674		
New York	1,609,339	Total, Territories	60,978
North Carolina	1,932,204		
Ohio	102,511	Aggregate	15,061,995
Oregon	34,407		

In 1850 there were raised in the United States 9,219,901 bushels of peas and beans. The amount was not given in the census of 1840. In 1860 there were raised 15,061,995 bushels, showing an increase of over 50 per cent.

Had the crops been returned separately it would have been more interesting. Though belonging to the same botanical order, (*Leguminosæ*,) and of quite similar chemical composition, the crops are raised practically for very different objects. Beans are grown principally as food for man, while the pea is cultivated principally as food for animals on the farms, or for ploughing under as a green crop for manure.

With the exception of flax-seed and decorticated cotton-seed, peas and beans contain more nitrogen than any other grain. The droppings of animals fed on peas and beans are consequently more valuable than that from animals fed on any other grain.

The growth of these crops when fed out on the farm increases its fertility more than any other grain crop. When consumed on the farm, and the manure returned to the land, or when ploughed under as a manure, peas may be considered as a renovating crop. As a crop to alternate with wheat, peas are exceedingly useful. They tax the soil but lightly, and when a heavy crop is produced they smother the weeds. They also ripen early enough to afford ample time to sow wheat after the peas are harvested.

To a certain extent these remarks are applicable to beans. Their cultivation is rapidly extending in the wheat-growing districts. They can be planted late in the season, and yet can be harvested in time to allow the land to be sown to wheat. Being planted in rows, the land can be horsehoed and the soil cleaned and pulverized almost as well as if summer-fallowed.

The following table shows the amount of peas and beans raised in the New England States in 1860 as compared with 1850:

	1860.	1850.
Connecticut	25, 864	19, 090
Maine	246, 915	205, 541
Massachusetts	45, 246	43, 709
New Hampshire	79, 454	70, 856
Rhode Island	7, 698	6, 846
Vermont	70, 654	104, 649
	475, 831	450, 691

Except in Vermont, the crop of peas and beans has increased in all the New England States since 1850.

Maine raises more peas and beans than all the other New England States. The total of these two crops in New England is less than half a million bushels.

The following table shows the amount of peas and beans raised in the middle States in 1860 as compared with 1850:

	1860.	1850.
New York	1, 609, 339	741, 546
New Jersey	27, 674	14, 174
Pennsylvania	123, 090	55, 231
Maryland	34, 407	12, 816
Delaware	7, 438	4, 120
District of Columbia	3, 749	7, 754
	1, 805, 697	835, 641

New York raises eight-ninths of all the peas and beans produced in the middle States. The crop in this State has more than doubled since 1850.

The following table shows the amount of peas and beans raised in the western States in 1860 as compared with 1850:

	1860.	1850.
Ohio	102, 511	60, 168
Indiana	79, 902	35, 773
Michigan	165, 128	74, 254
Illinois	108, 028	82, 814
Wisconsin	99, 484	20, 657
Iowa	41, 081	4, 775
Missouri	107, 999	46, 017
Kentucky	288, 346	202, 574
Minnesota	18, 988	10, 002
Kansas	9, 827	.....
Nebraska	5, 029	.....
	1, 026, 323	537, 434

It will be observed that the whole western States do not produce as much peas and beans as the State of New York alone. Kentucky produces more than any other western State. Michigan comes next, and then Illinois, Missouri, and Ohio. But these crops are not raised to any considerable extent in the west.

During the present year (1864) the west has barely been able to supply the home demand for beans, and, to some extent at least, has imported them from the middle States and Canada.

The following table shows the amount of peas and beans raised in the southern States in 1860 as compared with 1850:

	1860.	1850.
Virginia	515, 168	521, 579
North Carolina	1, 932, 204	1, 584, 252
South Carolina	1, 728, 074	1, 026, 900
Georgia	1, 765, 214	1, 142, 011
Alabama	1, 482, 036	892, 701
Louisiana	431, 148	161, 732
Texas	341, 961	179, 350
Mississippi	1, 954, 666	1, 072, 757
Arkansas	440, 472	285, 738
Tennessee	547, 803	369, 321
Florida	363, 217	135, 359
	11, 501, 963	7, 371, 700

The States and Territories raised about 9,000,000 bushels of peas and beans in 1850. Of these the southern States raised over 7,000,000 bushels. In 1860 the States and Territories raised about 15,000,000 bushels, and of these the southern States raised over 11,500,000 bushels.

As before said, we have no means of knowing how much of this quantity is peas and how much beans. In the northern States the proportion of beans is undoubtedly larger than in the southern States. The so-called "cow pea" of the south is more closely allied to the bean than to the pea family. It is, however, a most valuable plant in a climate sufficiently warm to mature it. It has done much for southern agriculture. Like all the leguminous plants, it contains a high percentage of nitrogen; and, when ploughed under as manure, or consumed on the farm by stock, it adds greatly to the fertility of the soil. It is the great renovating crop of the southern States. To a certain extent it is to the south what red clover is to the north. Within the past thirty years its cultivation has been greatly extended both as a green crop for ploughing under as manure and as a grain crop. Its importance in southern agriculture can hardly be overestimated. The great want of American agriculture is a plant which

shall occupy in our system of rotation the place which the turnip occupies in British agriculture. We have no such crop. The bean at the north has more of the necessary qualities than any other plant extensively cultivated. It is planted in rows, and admits the use of the horsehoe in cleaning the land. It does not draw heavily on the soil, and contains a large amount of nitrogen, the element which the cereals so much need. The "cow pea" has these qualities in a still greater degree. In the southern States it grows much more luxuriantly than the bean or the common pea at the north, and is the best plant that is extensively grown in southern agriculture for enriching the land.

The cow pea does not flourish north of Virginia, and even in that State some of the best varieties do not succeed as well as in the more southern States. It will be seen from the above table that North and South Carolina, Georgia, Alabama, and Mississippi raise the greatest amount of this crop. In Virginia the plant is grown extensively, but probably the larger proportion of it is ploughed under for manure.

The following table shows the amount of peas and beans raised in the Pacific States in 1860 as compared with 1850:

	1860.	1850.
California	165, 574	2, 292
Oregon	34, 407	6, 566
New Mexico	38, 514	15, 688
Washington	10, 850	.....
Utah	2, 535	289
	251, 880	24, 835

The cultivation of this crop is rapidly extending in the Pacific States. As will be seen from the following table, they increase four times as rapidly as the population.

The following table shows the amount of peas and beans raised in the different sections in 1860 and 1850, and in the whole United States and Territories in proportion to population:

	1860.	1850.
New England States	0.15	0.12
Middle States	0.21	0.12
Western States	0.10	0.13
Southern States	1.26	0.97
Pacific States	0.44	0.13
United States and Territories	0.48	0.35

It will be seen that the increase in the production of peas and beans in all the States and Territories more than keeps up with the increase in population. It was eleven quarts to each inhabitant in 1850, and a little over fifteen quarts to each person in 1860.

In the New England States there were three and three-quarters quarts of peas and beans to each inhabitant in 1850, and four and three-quarters quarts in 1860.

In the middle States there were three and three-quarters quarts in 1850, and seven quarts in 1860.

In the western States there were four quarts in 1850, and only three quarts in 1860, showing a *decrease* in the production of peas and beans of 25 per cent. in proportion to population.

In the southern States there were nearly a bushel of peas and beans to each person in 1850, and over a bushel and a peck in 1860.

It will be observed that there is a decided increase in the production of these crops in all the different sections except at the west. The farmers on the rich land of this section have not yet realized

the necessity of raising peas and beans as renovating crops, while viewed merely as grain crops, it is doubtless found that the cereal grains are more profitable.

IRISH POTATOES

Bushels of Irish potatoes produced in 1860.

STATES.	BUSHELS.	STATES.	BUSHELS.
Alabama	491, 646	Pennsylvania	11, 687, 467
Arkansas	418, 010	Rhode Island	542, 909
California	1, 789, 463	South Carolina	226, 735
Connecticut	1, 833, 148	Tennessee	1, 182, 005
Delaware	377, 931	Texas	174, 182
Florida	18, 766	Vermont	5, 253, 498
Georgia	303, 789	Virginia	2, 292, 398
Illinois	5, 540, 390	Wisconsin	3, 818, 309
Indiana	3, 866, 647		
Iowa	2, 806, 720	Total, States	110, 629, 993
Kansas	296, 335		
Kentucky	1, 756, 531		
Louisiana	294, 655	TERRITORIES.	
Maine	6, 374, 617		
Maryland	1, 264, 429	District of Columbia	31, 693
Massachusetts	3, 201, 901	Dakota	9, 489
Michigan	5, 261, 245	Nebraska	162, 188
Minnesota	2, 565, 485	Nevada	5, 686
Mississippi	414, 320	New Mexico	5, 223
Missouri	1, 990, 850	Utah	141, 001
New Hampshire	4, 137, 543	Washington	163, 594
New Jersey	4, 171, 690		
New York	26, 447, 394	Total, Territories	518, 874
North Carolina	830, 565		
Ohio	8, 695, 101	Aggregate	111, 148, 867
Oregon	303, 319		

There were raised in the States and Territories in 1850, 65,797,896 bushels of Irish potatoes; and in 1860, 111,148,867 bushels.

The following table shows the amount of Irish potatoes raised in the New England States in 1860 as compared with 1850:

	1860.	1850.
Connecticut	1, 833, 148	2, 689, 725
Maine	6, 374, 617	3, 436, 040
Massachusetts	3, 201, 901	3, 585, 384
New Hampshire	4, 137, 543	4, 304, 919
Rhode Island	542, 909	651, 029
Vermont	5, 253, 498	4, 951, 014
Total	21, 343, 616	19, 618, 111

In Connecticut there is a great falling off in the production of this crop, while in Maine the crop has nearly doubled since 1850. There is a slight falling off in Massachusetts, New Hampshire, and Rhode Island.

Taking the New England States as a whole, the crop has increased from 19,618,111 bushels in 1850 to 21,343,616 bushels in 1860.

The following table shows the amount of Irish potatoes raised in the middle States in 1860, as compared with 1850:

	1860.	1850.
New York	26, 447, 394	15, 398, 368
Pennsylvania	11, 687, 467	5, 980, 732
New Jersey	4, 171, 690	3, 207, 236
Delaware	377, 931	240, 542
Maryland	1, 264, 429	764, 939
District of Columbia	31, 693	28, 292
Total	43, 980, 604	25, 620, 109

The production of Irish potatoes has increased somewhat in all the middle States since 1850; but it is only in New York, Pennsylvania, and New Jersey that there is any marked increase. In New York the crop has risen from fifteen million bushels in 1850 to twenty-six million bushels in 1860; and in Pennsylvania the crop has increased from less than six million bushels in 1850 to over eleven and a half million bushels in 1860.

Taking the middle States as a whole, the crop of Irish potatoes has increased from about twenty-five and a half million bushels in 1850 to nearly forty-four million bushels in 1860.

The following table shows the quantity of Irish potatoes raised in the western States in 1860 as compared with 1850:

	1860.	1850.
Ohio	8, 695, 101	5, 057, 769
Indiana	3, 866, 647	2, 083, 337
Michigan	5, 261, 245	2, 359, 897
Illinois	5, 540, 390	2, 514, 861
Wisconsin	3, 818, 309	1, 402, 077
Minnesota	2, 565, 485	21, 145
Iowa	2, 806, 720	276, 120
Missouri	1, 990, 850	939, 006
Kentucky	1, 756, 531	1, 492, 487
Kansas	296, 335	.....
Nebraska	162, 188	.....
Total	36, 759, 801	16, 146, 699

Minnesota and Iowa show an enormous increase in the production of Irish potatoes since 1850, while all the western States show a decided gain in amount.

The crop has increased from a little over sixteen million bushels in 1850, to thirty-six and three quarter million bushels in 1860.

The following table shows the amount of Irish potatoes raised in the southern States in 1860 as compared with 1850:

	1860.	1850.
Virginia	2, 292, 398	1, 316, 933
North Carolina	830, 565	620, 318
South Carolina	226, 735	136, 494
Georgia	303, 789	227, 379
Alabama	491, 646	246, 001
Louisiana	294, 655	95, 632
Texas	174, 182	94, 645
Mississippi	414, 320	261, 482
Arkansas	418, 010	193, 832
Tennessee	1, 182, 005	1, 067, 844
Florida	18, 766	7, 828
Total	6, 647, 071	4, 268, 388

The State of Maine raises nearly as many Irish potatoes as all the southern States. Virginia and Tennessee raise more Irish potatoes than the other southern States combined. The crop decreases as we go south, while the sweet potato takes its place.

The following table shows the amount of Irish potatoes raised in the Pacific States in 1860 as compared with 1850:

	1860.	1850.
California	1,789,463	9,292
Oregon	303,319	91,326
New Mexico	5,223	3
Washington	163,594	.....
Utah	141,067	43,968
Total	2,402,600	144,589

The following table shows the quantity of Irish potatoes raised in the different sections of the United States in proportion to population:

	1860.	1850.
New England States	6.80	7.19
Middle States	5.28	3.88
Western States	3.58	2.66
Southern States	0.73	0.58
Pacific States	4.15	0.80
United States and Territories	3.53	2.83

It will be seen that New England raises more Irish potatoes in proportion to population than any other section. There is, however, a slight decrease in the crop in proportion to population since 1850, being a little over seven bushels to each person in 1850, and six and three-fourth bushels to each person in 1860.

In the middle States the crop has increased from three and three-fourth bushels in 1850 to five and one-fourth bushels in 1860, to each inhabitant.

In the western States the quantity of potatoes raised in proportion to population is far less than in the New England and middle States. In 1850 there were raised about two and a half bushels to each person, and in 1860 three and a half bushels.

In the Pacific States the production of Irish potatoes, in proportion to population, has increased enormously. In 1850 only about three-fourth bushel of potatoes were raised to each inhabitant; while in 1860 the crop exceeded four bushels to each person.

The whole United States and Territories raised about two and three-quarter bushels of potatoes to each inhabitant in 1850 and three and a half bushels in 1860.

Minnesota raises more potatoes, in proportion to population, than any other State in the Union. In 1850 she raised nearly four bushels to each person, and in 1860 nearly fifteen bushels.

Maine also raises a large crop of potatoes, in proportion to population. In 1850 she produced nearly six bushels to each person, and in 1860 over ten bushels.

SWEET POTATOES.

Bushels of sweet potatoes produced in the United States in 1860.

STATES.	BUSHELS.	STATES.	BUSHELS.
Alabama	5, 439, 917	Oregon	335
Arkansas	1, 566, 540	Pennsylvania	103, 187
California	214, 307	Rhode Island	946
Connecticut	2, 710	South Carolina	4, 115, 688
Delaware	142, 213	Tennessee	2, 604, 672
Florida	1, 129, 759	Texas	1, 846, 612
Georgia	6, 508, 541	Vermont	623
Illinois	306, 154	Virginia	1, 960, 817
Indiana	299, 516	Wisconsin	2, 396
Iowa	51, 362		
Kansas	9, 965	Total, States	42, 088, 854
Kentucky	1, 057, 557		
Louisiana	2, 060, 981	TERRITORIES.	
Maine	1, 435		
Maryland	236, 740	District of Columbia	5, 606
Massachusetts	616	Dakota	.....
Michigan	38, 492	Nebraska	168
Minnesota	792	Nevada	200
Mississippi	4, 563, 873	New Mexico	180
Missouri	335, 102	Utah	.....
New Hampshire	161	Washington	18
New Jersey	1, 034, 832		
New York	7, 529	Total, Territories	6, 172
North Carolina	6, 140, 039		
Ohio	304, 445	Aggregate	42, 095, 026

The crop of sweet potatoes in the States and Territories in 1850, was 38,268,148 bushels, and in 1860, 42,095,026 bushels. Taking all the States and Territories, there were 1.66 bushels of sweet potatoes raised in 1850 to each inhabitant, and in 1860 1.33 bushels. The great bulk of the crop is raised in the southern States.

The following table shows the amount raised in these States in 1860, as compared with 1850:

	1860.	1850.
Alabama	5, 439, 917	5, 475, 204
Arkansas	1, 566, 540	788, 149
Florida	1, 129, 759	757, 226
Georgia	6, 508, 541	6, 986, 428
Louisiana	2, 060, 981	1, 428, 453
Mississippi	4, 563, 873	4, 741, 795
North Carolina	6, 140, 039	5, 095, 709
South Carolina	4, 115, 688	4, 337, 469
Tennessee	2, 604, 672	2, 777, 716
Texas	1, 846, 612	1, 332, 158
Virginia	1, 960, 817	1, 813, 634
Total	37, 937, 439	35, 533, 941

It will be seen that of the thirty-eight million bushels produced in the United States in 1850, the southern States raised thirty-five millions, and nearly thirty-eight millions in 1860 of the forty-two millions raised in the whole country.

Taking all the southern States, there were 4.87 bushels of sweet potatoes raised to each inhabitant in 1850, and in 1860 4.16 bushels, showing a slight decrease in proportion to population. Considerable attention has of late years been given to raising sweet potatoes in the New England, middle, and western States.

Connecticut, which raised only eighty bushels in 1850, produced 2,710 bushels in 1860.

Delaware produced 65,443 bushels in 1850, and 142,213 bushels in 1860.

Maine, which was unreported in 1850, produced 1,435 bushels in 1860.

Michigan, which produced 1,177 bushels in 1850, produced 38,492 bushels in 1860.

New Jersey, which produced 508,015 bushels in 1850, produced 1,024,832 bushels in 1860.

Wisconsin, which produced 879 bushels in 1850, produced 2,396 bushels in 1860.

Illinois, which produced 157,433 bushels in 1850, produced 306,154 bushels in 1860.

For the production of sweet potatoes in the other States we would refer to the tables. Since the cessation of commercial intercourse with the southern States the cultivation of sweet potatoes in the northern States has received considerable attention, and were the census taken at this time it would doubtless be found that the crop in these States is very much larger than it was in 1860.

DAIRY PRODUCTS.

Butter and cheese—Pounds of. ————, 1860.

States.	Butter.	Cheese.	States.	Butter.	Cheese.
Alabama	6,028,478	15,923	Ohio	48,543,162	21,618,893
Arkansas	4,067,556	16,810	Oregon	1,000,157	105,379
California	3,095,035	1,343,689	Pennsylvania	58,653,511	2,508,556
Connecticut	7,620,912	3,898,411	Rhode Island	1,021,767	181,511
Delaware	1,430,502	6,579	South Carolina	3,177,934	1,543
Florida	408,855	5,280	Tennessee	10,017,787	135,575
Georgia	5,439,765	15,587	Texas	5,850,583	275,128
Illinois	28,052,551	1,848,557	Vermont	15,900,359	8,215,030
Indiana	18,306,651	605,795	Virginia	13,464,722	280,852
Iowa	11,953,666	918,635	Wisconsin	13,611,328	1,104,300
Kansas	1,093,497	29,045			
Kentucky	11,716,609	190,400	Total	458,827,729	103,548,868
Louisiana	1,444,742	6,150	TERRITORIES.		
Maine	11,687,781	1,799,862			
Maryland	5,265,295	8,342	District of Columbia		
Massachusetts	8,297,936	5,294,090	Dakota	18,835	
Michigan	15,503,482	1,641,897	Nebraska	2,170	
Minnesota	2,957,673	199,314	Nevada	342,541	12,342
Mississippi	5,006,610	4,427	New Mexico	7,700	
Missouri	12,704,837	259,633	Utah	13,259	37,240
New Hampshire	6,956,764	2,232,092	Washington	316,046	53,331
New Jersey	10,714,447	182,172		153,092	12,146
New York	103,097,280	48,548,289	Total	853,643	115,059
North Carolina	4,735,495	51,119	Aggregate	459,681,372	103,663,927

The total production of butter in the United States and Territories in 1850 was 313,345,306 pounds, and in 1860 459,681,372 pounds. Of cheese, 105,535,893 pounds in 1850, and 103,663,927 pounds in 1860.

There is a considerable increase (about fifty per cent.) in the production of butter, but not so in cheese. There was nearly two million pounds more cheese produced in 1850 than in 1860.

The following table shows the amount of butter and cheese made in the New England States in 1860, as compared with 1850:

States.	BUTTER.		CHEESE.	
	1860.	1850.	1860.	1850.
Connecticut	7,620,912	6,498,119	3,898,411	5,363,277
Maine	11,687,781	9,243,811	1,799,862	2,434,454
Massachusetts	8,297,936	8,071,370	5,294,090	7,088,142
New Hampshire	6,956,764	6,977,056	2,232,092	3,196,563
Rhode Island	10,211,767	995,670	181,511	316,508
Vermont	15,900,359	12,137,980	8,215,030	8,720,834
Total	51,485,519	43,924,006	21,620,996	27,119,778

The production of butter in the New England States, has, in round numbers, increased from less than forty-four million pounds in 1850, to over fifty-one million pounds in 1860. On the other hand, the production of cheese has *decreased* from over twenty-seven millions in 1850, to less than twenty-one and three-fourths millions in 1860.

Vermont produces more butter and also more cheese than any other New England State. Maine stands next in the production of butter, but produces less cheese than either Massachusetts, Connecticut, or New Hampshire.

The following table shows the amount of butter and cheese made in the middle States in 1860, as compared with 1850:

States.	BUTTER.		CHEESE.	
	1860.	*1850.*	*1860.*	*1850.*
New York	103,097,280	79,766,094	48,548,289	49,741,413
Pennsylvania	58,653,511	39,878,418	2,508,556	2,505,034
New Jersey	10,714,447	9,487,210	182,172	365,756
Delaware	1,430,502	1,055,308	6,579	3,187
Maryland	5,265,295	3,806,160	8,342	3,975
District of Columbia	18,835	14,872	.....	1,500
Total	179,179,870	134,008,062	51,253,938	52,620,865

The product of butter in the middle States has increased from one hundred and thirty-four million pounds in 1850, to one hundred and seventy-nine million pounds in 1860.

New York makes nearly one-fourth of all the butter made in the United States, and more than one-third of the cheese.

Pennsylvania comes next in the product of butter. She made over fifty-eight and a half million of pounds in 1860, against less than forty million in 1850. Although Pennsylvania, after New York, supplies more butter than any other State, she produces comparatively but little cheese.

The following table shows the amount of butter and cheese made in the western States in 1860, as compared with 1850:

States.	BUTTER.		CHEESE.	
	1860.	1850.	1860.	1850.
Indiana	18,306,651	12,881,535	605,795	624,564
Illinois	28,052,551	12,526,543	1,848,557	1,278,225
Iowa	11,953,666	2,171,188	918,635	209,840
Michigan	15,503,482	7,065,878	1,641,897	1,011,492
Minnesota	2,957,673	1,100	199,314	.....
Missouri	12,704,837	7,834,359	259,633	203,572
Ohio	48,543,162	34,449,379	21,618,893	20,819,542
Kentucky	11,716,609	9,947,523	190,400	213,954
Wisconsin	13,611,328	3,633,750	1,104,300	400,283
Kansas	1,093,497	.....	29,045	.....
Nebraska	342,541	.....	12,342	.....
Total	164,785,997	90,511,255	28,428,311	24,762,472

Ohio is the principal dairy State of the west. She makes nearly one-third of all the butter produced in the western States, and over seventy-five per cent. of all the cheese.

Illinois stands second in the western States in the production of butter, making about twenty-eight million pounds in 1860, against twelve and a half million in 1850.

Indiana stands third among the western States, and produced over eighteen million pounds in 1860, against less than thirteen million in 1850.

Wisconsin shows a marked increase in this production. She has increased from three and a half million pounds in 1850, to thirteen and a half million pounds in 1860.

Minnesota shows even greater progress in butter-making. From eleven hundred pounds in 1850, she increased to nearly three million pounds in 1860.

The cheese product of the west is exceedingly small. Leaving out Ohio, the western States do not produce seven million pounds of cheese. Vermont produces more cheese than all the western States together, exclusive of Ohio.

The following table shows the amount of butter and cheese made in the southern States in 1860, as compared with 1850:

States.	BUTTER.		CHEESE.	
	1860.	1850.	1860.	1850.
Alabama	6,028,478	4,008,811	15,923	31,412
Arkansas	4,067,556	1,854,239	16,810	30,088
Florida	408,855	371,498	5,280	18,015
Georgia	5,439,765	4,640,559	15,587	46,976
Mississippi	5,006,610	4,346,234	4,427	21,191
Louisiana	1,444,743	683,069	6,153	1,957
North Carolina	4,735,495	4,146,290	51,119	95,921
South Carolina	3,777,934	2,981,850	1,543	4,970
Tennessee	10,017,787	8,139,585	135,575	177,681
Texas	5,850,583	2,344,900	275,128	95,299
Virginia	13,464,722	11,089,359	280,852	436,292
Total	59,642,527	44,606,394	808,397	959,802

The amount of butter made in the southern States has increased from forty-four and a half million pounds in 1850, to nearly sixty million pounds in 1860.

The cheese product in the southern States is exceedingly light, and has fallen off since 1850.

The following table shows the amount of butter and cheese made in the Pacific States in 1860, as compared with 1850:

States and Territories.	BUTTER.		CHEESE.	
	1860.	1850.	1860.	1850.
California	3,095,035	705	1,343,689	150
Oregon	1,000,157	211,464	105,379	36,980
New Mexico	13,259	111	37,240	5,848
Washington	153,092	.....	12,146	.....
Utah	316,046	83,309	53,331	30,998
Total	4,577,589	295,589	1,551,785	73,976

The production of butter, as of every other agricultural product, has advanced in California with astonishing rapidity. In 1850 only 705 pounds were produced; while in 1860 California produced over three million pounds of butter, and over one and a quarter million pounds of cheese. She made nearly sixty-eight per cent. more cheese than all the southern States.

The following table shows the amount of butter and cheese made in the different sections of the country in proportion to population:

	BUTTER.		CHEESE.	
	1860.	1850.	1860.	1850.
New England States	16.42	16.10	6.89	9.94
Middle States	21.50	16.08	6.15	7.94
Western States	16.08	14.33	2.78	3.92
Southern States	6.55	6.12	0.09	0.13
Pacific States	7.92	1.65	2.70	0.47
United States and Territories	14.62	13.51	3.29	4.11

It will be seen that the States and Territories raised about thirteen and a half pounds of butter to each inhabitant in 1850, and fourteen and five-eighths pounds in 1860, showing an increase of one and one-eighth pound to each person. In cheese, however, the production has not kept pace with the population. It has fallen off over three-fourths of a pound to each person. Cheese does not enter as largely into the dietary of the United States as in most other countries, and small as is the amount produced—less than four pounds to each inhabitant—it more than meets the demand, leaving a considerable balance for exportation.

The production of butter in the New England States more than keeps pace with the increase in population. Over sixteen pounds of butter is produced to each person.

In the middle States twenty-one and a half pounds of butter is made to each person. In 1850 it was only sixteen pounds, showing a very remarkable increase.

The western States produced about fourteen pounds to each person in 1850, and sixteen pounds in 1860, also showing a decided increase.

In the southern States, too, the production of butter keeps pace with the population. The amount made, however, is small, only six and a half pounds to each inhabitant.

The Pacific States, which produced only a little over one and a half pound of butter to each person in 1850, produced nearly eight pounds in 1860.

In cheese, all the different sections, with the exception of the Pacific States, show a marked decline as compared with population. The New England States, which produced nearly ten pounds of cheese to each inhabitant in 1850, produces less than seven pounds in 1860. It will be observed, however, that New England still produces more cheese in proportion to population than any other section.

The middle States have fallen off from nearly eight pounds of cheese to each person in 1850, to about six pounds in 1860.

The Pacific States have increased their cheese product from less than half a pound to each person in 1850, to nearly three pounds in 1860.

Since the census was taken, the production of cheese, especially in the great dairy districts of New York, has greatly increased. The "cheese factory" system which was introduced a few years ago has been stimulated into an astonishing development by the high price of cheese caused by the high premium on gold and sterling exchange. The cheese made in these factories is generally of better quality than that hitherto made in private dairies, and pains have been taken to adapt it to the wants of the European market. The cheese is sent to England, and, being sold for gold, the price in this country increases with the premium on gold and sterling exchange. At the time of this writing, (November, 1864,) cheese in New York sells for twenty-two cents per pound. In 1859 the highest price of cheese in New York at the same period was eleven cents per pound; in 1860 eleven and a half cents, and in 1861 seven and a half cents. Cheese is now more than double the average price obtained before the war. The effect of these high prices, as we have before remarked, is seen in the increased atten-

tion paid to the manufacture of cheese, and especially to the general introduction of the "factory system."

The leading idea of the factory system is this: Farmers with a few cows, to avoid the expense of the necessary buildings, and to introduce the best apparatus for the manufacture of cheese, unite to send their milk every morning to a certain point, where it is converted into cheese, and each farmer receives his proportion (or the money received for it) according to the quantity of milk he has furnished.

At the factory a competent person is employed to attend to the business, and the cheese is made on the most approved principles. Hitherto the system has worked to the mutual advantage of all concerned. Whether it will be found to work equally well when cheese falls to its normal price (or about half what it brings at present) remains to be seen.

WOOL.

Pounds of wool produced in the United States in 1860.

STATES.	POUNDS.	STATES.	POUNDS.
Alabama	775, 117	Oregon	219, 012
Arkansas	410, 382	Pennsylvania	4, 752, 522
California	2, 683, 109	Rhode Island	90, 699
Connecticut	335, 896	South Carolina	427, 102
Delaware	50, 201	Tennessee	1, 405, 236
Florida	59, 171	Texas	1, 493, 738
Georgia	946, 227	Vermont	3, 118, 950
Illinois	1, 989, 567	Virginia	2, 510, 019
Indiana	2, 552, 318	Wisconsin	1, 011, 933
Iowa	660, 858		
Kansas	24, 746	Total, States	59, 673, 952
Kentucky	2, 329, 105		
Louisiana	290, 847	TERRITORIES.	
Maine	1, 495, 060		
Maryland	491, 511	District of Columbia	100
Massachusetts	377, 267	Dakota	.....
Michigan	3, 960, 888	Nebraska	3, 302
Minnesota	20, 388	Nevada	330
Mississippi	665, 959	New Mexico	492, 645
Missouri	2, 069, 778	Utah	74, 765
New Hampshire	1, 160, 222	Washington	19, 819
New Jersey	349, 250		
New York	9, 454, 474	Total, Territories	590, 961
North Carolina	883, 473		
Ohio	10, 608, 927	Aggregate	60, 264, 913

The total amount of wool raised in the States and Territories in 1850 was 52,516,959 pounds; in 1860, 60,364,913 pounds; and in 1840 was 35,802,114 pounds. In other words, the amount of wool increased from 1840 to 1850 about 16,750,000 pounds; and from 1850 to 1860, 7,750,000 pounds.

The following table shows the amount of wool produced in the New England States in 1860, as compared with 1850:

	1860.	1850.
Connecticut	335, 866	497, 454
Maine	1, 495, 060	1, 364, 034
Massachusetts	377, 267	585, 136
New Hampshire	1, 160, 222	1, 108, 476
Rhode Island	90, 699	129, 692
Vermont	3, 118, 950	3, 400, 717
Total	6, 578, 064	7, 085, 509

In 1850 there were over 7,000,000 pounds of wool produced in the New England States, and 6,500,000 pounds in 1860, showing a decrease of 500,000 pounds.

Vermont raised nearly half the wool produced in the New England States. From 1850 to 1860, however, the amount of wool produced in this State has fallen off more than 275,000 pounds.

Maine stands next, in the New England States, to Vermont, as a wool-growing State. In 1850 she produced 1,364,034 pounds of wool, and 1,495,060 pounds in 1860, showing an increase of over 100,000 pounds.

New Hampshire stands third, and in this State, also, there is a slight increase from 1850 to 1860.

In Massachusetts, Connecticut, and Rhode Island, as well as in Vermont, the produce of wool has fallen off since 1850.

The following table shows the amount of wool raised in the middle States in 1860 as compared with 1850:

	1860.	1850.
New York	9, 454, 474	10, 071, 301
New Jersey	349, 250	375, 396
Pennsylvania	4, 722, 522	4, 481, 570
Maryland	491, 511	477, 438
Delaware	50, 201	57, 768
District of Columbia	100	525
Total	15, 098, 058	15, 463, 998

This is a falling off in the amount of wool produced in the middle States since 1850 of nearly 375,000 pounds.

New York produces about two-thirds of all the wool grown in the middle States. In 1850 she produced 10,071,301 pounds, and 9,454,474 pounds in 1860, or over 500,000 pounds less than in 1850.

Pennsylvania produced 4,486,570 pounds in 1850, and 4,752,522 pounds in 1860, or an increase of over 250,000 pounds.

The following table shows the amount of wool grown in the western States in 1860, as compared with 1850:

	1860.	1850.
Ohio	10, 608, 927	10, 196, 371
Indiana	2, 552, 318	2, 610, 287
Michigan	3, 960, 888	2, 043, 283
Illinois	1, 989, 567	2, 150, 113
Wisconsin	1, 011, 933	253, 963
Minnesota	20, 388	85
Iowa	660, 858	373, 898
Missouri	2, 069, 778	1, 627, 164
Kentucky	2, 329, 105	2, 297, 433
Kansas	24, 746	.....
Nebraska	3, 302	.....
Total	25, 231, 810	21, 552, 597

In 1850 the western States produced 21,552,597 pounds of wool, and 25,231,810 pounds in 1860, or an increase of nearly 4,000,000 pounds. Ohio is the greatest wool-growing State in the west. She produced over ten and a half million pounds in 1860, or about half a million pounds more than in 1850.

Michigan is the next largest wool-growing State in the west. She produced about 4,000,000 pounds in 1860, against 2,000,000 in 1850.

Indiana stands third, producing two and a half million pounds, showing a very slight decrease since 1850.

Kentucky stands fourth, with a small increase since 1850.

Missouri and Illinois come next, the former representing an increase of twenty-five per cent., while the latter shows a small decrease since 1850.

The following table shows the amount of wool grown in the southern States in 1860, as compared with 1850:

	1860.	1850.
Virginia	2,510,019	2,860,765
North Carolina	883,473	970,738
South Carolina	427,102	487,233
Georgia	946,227	990,019
Alabama	775,117	657,118
Louisiana	290,847	109,897
Texas	1,493,738	131,917
Mississippi	665,959	559,619
Arkansas	410,382	182,595
Tennessee	1,405,236	1,364,378
Florida	59,171	23,247
Total	9,867,271	8,337,526

It will be seen that the production of wool in the southern States increased from 8,337,526 pounds in 1850, to 9,867,271 pounds in 1860.

Virginia, Texas, and Tennessee are the largest wool-growing States in the south. In Texas the production of wool increased from 131,917 pounds in 1850, to 1,493,738 pounds in 1860.

The following table shows the amount of wool grown in the Pacific States in 1860, as compared with 1850:

	1860.	1850.
California	2, 683, 109	5, 520
Oregon	219, 012	29, 686
New Mexico	492, 645	32, 901
Washington	19, 819	.....
Utah	74, 765	9, 222
Total	3, 489, 350	77, 329

The increase in the Pacific States is enormous. From 77,329 pounds in 1850, the production of wool in these States increased to 3,489,350 pounds in 1860.

California, it is thought, will soon be one of the largest wool-producing States in the United States. Indeed, Ex-Governor Downey writes this office under date of June 4, 1863, "We must have now nearly 3,000,000 head of sheep in California, and the quality of the wool is annually improving. From the mildness of our climate, and richness of pasture, our State will show at the next census a wool product equal to that of the whole United States at present."

The following table shows the amount of wool produced in the different sections of the United States in 1850 and 1860, as compared with population:

	1860.	1850.
New England States	2.09	2.59
Middle States	1.81	2.33
Western States	2.46	3.41
Southern States	1.08	1.01
Pacific States	6.04	0.43
United States and Territories	1.92	2.26

It will be seen that the Pacific States is the only section in which the production of wool has more than kept pace with the population. These States have increased from less than half a pound of wool to each person in 1850, to over six pounds in 1860.

In all the other sections the production of wool in proportion to population has decreased since 1850, excepting the southern States, where there is a slight increase.

The New England States stand next as wool-producers; but here, too, the growth of wool does not keep pace with the increase in population. It was 2.59 pounds to each person in 1850, and only 2.09 pounds in 1860.

In the middle States the growth of wool in 1850 was 2.33 pounds to each person, and in 1860 only 1.81 pound.

Leaving out the Pacific States, the highest production of wool in proportion to population was in the western States. It has fallen off, however, from 3.41 pounds in 1850 to 2.46 pounds in 1860.

In the southern States the growth of wool to each person was 1.01 pound in 1850, and 1.08 pounds in 1860, showing an increase of about one ounce to each inhabitant.

Taking all the States and Territories, the amount of wool raised in 1850 was a little over two and a quarter pounds to each inhabitant and in 1860 less than two pounds.

FLAX.

Flax produced.

States.	1850. Flax.	1860. Flax.	States.	1850. Flax.	1860. Flax.
	Pounds.	*Pounds.*		*Pounds.*	*Pounds.*
Alabama	3,921	111	Ohio	446,932	882,423
Arkansas	12,291	3,821	Oregon	640	162
California	.....	.....	Pennsylvania	530,307	312,368
Connecticut	17,928	1,187	Rhode Island	85	.....
Delaware	11,174	8,112	South Carolina	332	344
Florida	50	.....	Tennessee	368,131	164,294
Georgia	5,387	3,303	Texas	1,048	115
Illinois	160,063	48,235	Vermont	20,852	7,007
Indiana	584,469	97,119	Virginia	1,000,450	487,808
Iowa	62,660	30,226	Wisconsin	68,393	21,644
Kansas	.....	1,135	Total	7,709,126	4,715,802
Kentucky	2,100,116	728,234			
Louisiana	.....	.....	TERRITORIES.		
Maine	17,081	2,997			
Maryland	35,686	14,481	District of Columbia	.....	.....
Massachusetts	1,162	165	Dakota	.....	.....
Michigan	7,152	4,128	Nebraska	.....	.....
Minnesota	.....	1,983	Nevada	.....	.....
Mississippi	665	50	New Mexico	.....	.....
Missouri	627,160	109,837	Utah	550	4,343
New Hampshire	7,652	1,347	Washington	.....	.....
New Jersey	182,965	48,651	Total	550	4,343
New York	940,577	1,518,025			
North Carolina	593,796	216,490	Aggregate	7,709,676	4,720,145

The amount of flax produced in the States and Territories in 1850 was 7,709,676 pounds, and in 1860 4,720,145 pounds. In other words, the production of flax has fallen off almost one half since 1850.

Since the commencement of the war flax culture has received increased attention, owing to the scarcity of cotton, and it is not improbable that, were the census taken now, it would be found that the flax crop was at least as great as in 1850. The climate of the northern States is admirably adapted to the growth of flax, and all that is needed to make it a highly remunerative crop is the introduction of machines for dressing the fibre and preparing it for market. Great improvements have recently taken place in the machines for this purpose, and there can be no doubt that flax will be much more extensively cultivated.

The following table shows the amount of flax grown in the New England States in 1860, as compared with 1850:

	1860.	1850.
Connecticut	1,187	17,928
Maine	2,997	17,081
Massachusetts	265	1,162
New Hampshire	1,347	7,652
Vermont	7,007	20,852
Rhode Island	.....	85
Total	12,703	64,760

The amount of flax raised in the New England States has fallen off from 64,760 pounds in 1850, to 12,703 pounds in 1860.

Vermont is the largest flax-producing State in New England, but even in this State the crop has fallen off from 20,852 pounds in 1850, to 7,007 pounds in 1860.

The following table shows the amount of flax grown in the middle States in 1860, as compared with 1850:

	1860.	1850.
New York	1,518,025	940,577
New Jersey	48,651	182,965
Delaware	8,112	11,174
Maryland	14,481	35,686
Pennsylvania	312,368	530,307
Total	1,901,637	1,700,709

In New York the crop of flax increased from 940,577 pounds in 1850, to 1,518,025 pounds in 1860.

In Pennsylvania, on the other hand, there was a falling off in the production of flax from 530,307 pounds in 1850, to 312,368 pounds in 1860.

In New Jersey, Delaware, and Maryland, the crop of flax has also decreased since 1850.

The following table shows the amount of flax produced in the western States in 1860, as compared with 1850:

	1860.	1850.
Ohio	882,423	446,932
Indiana	97,119	584,469
Michigan	4,128	7,152
Illinois	48,235	160,063
Wisconsin	21,644	68,393
Minnesota	1,983	.....
Iowa	30,226	62,660
Missouri	109,837	627,160
Kentucky	728,234	2,100,116
Kansas	1,135	.....
Nebraska	.....	.....
Total	1,924,964	4,056,945

It will be seen that there is a great falling off in the production of flax in the western States, where over four million pounds of flax was raised in 1850, and less than two million pounds in 1860.

Kentucky, in 1850, was decidedly the largest flax-producing State in the country, raising nearly one-third of all the flax grown in the United States. The returns for 1860 show an astonishing diminution in the growth of flax in this State. From over two million pounds in 1850, the production of flax is less than three-quarters of a million in 1860.

Ohio is now the largest flax-producing State in the west. From 446,932 pounds in 1850, she has increased to 882,423 pounds in 1860.

On the other hand, Indiana and Missouri, which produced a large crop of flax in 1850, have, like Kentucky, fallen off to an astonishing degree. Missouri, which produced 627,160 pounds in 1850, now produces only 109,837 pounds; and Indiana, which produced 584,469 pounds in 1850, produces only 97,119 pounds.

The following table shows the amount of flax grown in the southern States in 1860, as compared with 1850:

	1860.	1850.
Alabama	111	3,921
Arkansas	3,821	12,291
Florida	.....	50
Georgia	3,303	5,387
Louisiana	.....	.....
Mississippi	50	665
North Carolina	216,490	593,796
South Carolina	344	333
Tennessee	164,294	368,131
Texas	115	1,048
Virginia	487,808	1,000,450
Total	876,336	1,986,072

The production of flax in the southern States has fallen off more than one-half since 1850.

Virginia is the principal flax-producing State in the south. She raises more flax than all the other southern States. The amount of flax raised in Virginia has fallen off from one million pounds in 1850, to less than half a million pounds in 1860.

North Carolina and Tennessee are the only other southern States in which flax is grown to any extent.

The following table shows the amount of flax grown in the Pacific States in 1860, as compared with 1850:

	1860.	1850.
California	.....	.....
Oregon	162	640
New Mexico	.....	.....
Utah	4,343	550
Washington	.....	.....
Total	4,505	1,190

In California there was no flax reported either in 1850 or 1860.

In Oregon there was produced 640 pounds in 1850, and only 162 pounds in 1860.

In Utah the production of flax increased from 550 pounds in 1850, to 4,343 pounds in 1860.

The following table shows the amount of flax in ounces grown in the different sections in 1860 and in 1850 in proportion to population:

	1860.	1850.
New England States	0.06	0.33
Middle States	3.68	4.25
Western States	3.00	10.29
Southern States	1.52	4.09
United States and Territories	2.37	5.31

In 1850 there was less than five and a half ounces of flax raised in the whole States and Territories to each inhabitant, and in 1860 less than two and a half ounces to each person.

The New England States raised one-third of an ounce to each person in 1850, and only six-hundredths of an ounce in 1860.

The middle States produced 4.25 ounces in 1850 to each inhabitant, and 3.68 ounces in 1860.

The western States produced over ten ounces to each inhabitant in 1850, and only three ounces in 1860.

The southern States produced over four ounces in 1850 to each person, and only 1.52 ounces in 1860.

As we have before remarked, there can be little doubt that since the census was taken, there has been considerable increase in the growth of flax; but making full allowance for this probable increase, the production of flax in the United States, with a climate admirably adapted for its growth, is exceedingly small. The principal cause of this is doubtless owing to the high price of labor, which renders the preparation of the crop more expensive than it is in other countries from which our imports of flax are derived. If the machines recently introduced for dressing flax shall prove as efficient as present experience indicates, the production of flax, stimulated by the high price of cotton, will greatly increase.

FLAX-SEED.

Bushels of flax-seed produced in the United States in 1860.

STATES.	BUSHELS.	STATES.	BUSHELS.
Alabama	68	Oregon	6
Arkansas	545	Pennsylvania	24, 198
California	.....	Rhode Island	.....
Connecticut	109	South Carolina	313
Delaware	2, 126	Tennessee	9, 362
Florida	.....	Texas	.....
Georgia	96	Vermont	331
Illinois	8, 670	Virginia	32, 691
Indiana	119, 420	Wisconsin	4, 256
Iowa	5, 921		
Kansas	11	Total, States	566, 802
Kentucky	28, 875		
Louisiana	.....	TERRITORIES.	
Maine	419		
Maryland	1, 570	District of Columbia	.....
Massachusetts	7	Dakota	.....
Michigan	341	Nebraska	2
Minnesota	118	Nevada	.....
Mississippi	3	New Mexico	.....
Missouri	4, 656	Utah	33
New Hampshire	30	Washington	30
New Jersey	3, 241		
New York	56, 991	Total, Territories	65
North Carolina	20, 008		
Ohio	242, 420	Aggregate	566, 867

We have not space to go into a detailed examination of the production of flax-seed in the different sections. We may remark, however, that Ohio produces more flax-seed than any other State. Indiana stands next.

The States and Territories in 1850 produced 562,312 bushels of flax-seed, and 566,867 bushels in 1860; showing an increase of only a little over four thousand bushels.

The high price of linseed oil, as well as of linseed oil-cake during the war, will doubtless stimulate the growth of flax for seed as well as for the fibre. American oil-cake finds a ready market in England at high prices; but it would seem that so valuable a food might be used on our own farms with decided advantage. It is not only highly nutritious for cattle and sheep, but the manure derived from the animals eating it is more than twice as valuable as that from animals fed on Indian corn. Our farmers have not yet learned to appreciate the full value of manures, and it is rare that the question of the relative value of manures from different foods is taken into consideration in determining what particular sustenance it is best to give our farm stock.

In this connexion we would call particular attention to the following table prepared by John B. Lawes, the well-known English scientific agriculturist, showing the value of manure made from a ton (2,000 pounds) of different foods:

Description of food.	Value.	Description of food.	Value.
1. Decorticated cotton-seed cake	$27 86	14. Malt	$6 65
2. Rape cake	21 01	15. Barley	6 32
3. Linseed cake	19 72	16. Clover hay	9 64
4. Malt dust	18 21	17. Meadow hay	6 43
5. Lentils	16 51	18. Oat straw	2 90
6. Linseed	15 65	19. Wheat straw	2 68
7. Tares	15 75	20. Barley straw	2 25
8. Beans	15 75	21. Potatoes	1 50
9. Peas	13 38	22. Mangolds	1 07
10. Locust beans	4 81	23. Swedish turnips	91
11. Oats	7 40	24. Common turnips	86
12. Wheat	7 08	25. Carrots	86
13. Indian corn	6 65		

This table deserves to be profoundly studied by every farmer. Mr. Lawes has been engaged for many years in experiments on this subject, and we have no doubt that the table correctly states the *relative* value of the manures obtained from the different foods; that is to say, if the manure obtained from the consumption of a ton of meadow hay is worth $6 43, that made from a ton of clover hay is worth $9 64, or half as much again; and this is true everywhere. The estimates are based on the value of manure in England, and are undoubtedly correct; but of course the figures are only true relatively where manures of all kinds are of less value, as is the case in the newer sections of this country.

It will be seen that the manure made from a ton of linseed cake is estimated at $19 72; while from a ton of Indian corn it is estimated at only $6 65.

It must be borne in mind that these are *gold* values. At the present time the value of the manures in our currency would be more than doubled. If these few remarks should be the means of calling the attention of American farmers to this important branch of rural economy much good will be accomplished.

COTTON.

The amount of ginned cotton raised in the United States in 1860 was 5,387,052 bales, of 400 pounds each, or 2,154,820,800 pounds.

In 1850 there was 2,445,793 bales of cotton raised in the United States, or less than half the amount produced in 1860.

The following table will show the amount of ginned cotton, in bales of 400 pounds each, raised in the different States in 1860, and also in 1850:

	1860.	1850.		1860.	1850.
Mississippi	1,202,507	484,292	Missouri	41,188	.....
Alabama	989,955	564,429	Virginia	12,727	3,947
Louisiana	777,738	178,737	Illinois	1,482	.....
Georgia	701,840	499,091	Utah	136	.....
Texas	431,463	58,072	Kansas	61	.....
Arkansas	367,393	65,344	New Mexico	19	.....
South Carolina	353,412	300,901			
Tennessee	296,464	194,532	Total	5,387,052	2,445,793
North Carolina	145,514	50,545			
Florida	65,153	45,131			

We have here omitted a few States which produced small quantities of cotton in 1850, but which are unreported in 1860. But the total amount is given correctly.

Mississippi produces more cotton than any other State. This State alone raised nearly half as much cotton in 1860 as the whole United States in 1850.

Alabama comes next, and then Louisiana, Georgia standing fourth, though but little behind her sister States.

These four States, Mississippi, Alabama, Louisiana, and Georgia, produced 3,672,040 bales of cotton, while all the other States produced only 1,715,012 bales.

Texas, Arkansas, and South Carolina come next in the order named.

Tennessee and North Carolina stand eighth and ninth; the two together, however, produce less cotton than the new State of Texas.

RICE.

Pounds of rice produced in the United States in 1860.

STATES.	POUNDS.	STATES.	POUNDS.
Alabama	493,465	Oregon	.....
Arkansas	16,831	Pennsylvania	.....
California	2,140	Rhode Island	.....
Connecticut	.....	South Carolina	119,100,528
Delaware	.....	Tennessee	40,372
Florida	223,704	Texas	26,031
Georgia	52,507,652	Vermont	.....
Illinois	.....	Virginia	8,225
Indiana	.....	Wisconsin	.....
Iowa	.....		
Kansas	.....	Total, States	187,167,032
Kentucky	.....		
Louisiana	6,331,257	TERRITORIES.	
Maine	.....		
Maryland	.....	District of Columbia	.....
Massachusetts	.....	Dakota	.....
Michigan	716	Nebraska	.....
Minnesota	3,286	Nevada	.....
Mississippi	809,082	New Mexico	.....
Missouri	9,767	Utah	.....
New Hampshire	.....	Washington	.....
New Jersey	.....		
New York	.....	Total, Territories	.....
North Carolina	7,593,976		
Ohio	.....	Aggregate	187,167,032

The cultivation of rice is confined to a very few States. South Carolina and Georgia produced in 1860 171,608,180 pounds; and the total product of all the States was only 187,167,032 pounds. In 1850 these same States produced still more—the two together giving 198,881,304 pounds; but the production of rice was greater in 1850 than in 1860 in nearly all the States, making the total 215,313,497 pounds. Of this, South Carolina in 1850 produced 159,930,613 pounds, and in 1860 119,100,528 pounds. Mississippi, which in 1860 produced only 809,082 pounds, in 1850 raised 2,719,856 pounds; and Alabama decreased still more, producing 2,312,352 pounds in 1850, and only 493,465 pounds in 1860. Florida, in 1850, produced 1,075,090 pounds; but in 1860 only 223,704. The only States that increased in production, were Georgia, North Carolina, and Louisiana.

HOPS.

Pounds of hops produced in the United States in 1860.

STATES.	POUNDS.	STATES.	POUNDS.
Alabama	507	Oregon	493
Arkansas	146	Pennsylvania	43,191
California	80	Rhode Island	50
Connecticut	959	South Carolina	122
Delaware	414	Tennessee	1,581
Florida	.....	Texas	123
Georgia	199	Vermont	638,677
Illinois	7,254	Virginia	10,024
Indiana	27,884	Wisconsin	135,587
Iowa	2,078		
Kansas	197	Total, States	10,991,351
Kentucky	5,899		
Louisiana	27	TERRITORIES.	
Maine	102,987		
Maryland	2,943	District of Columbia	15
Massachusetts	111,301	Dakota	.....
Michigan	60,602	Nebraska	41
Minnesota	132	Nevada	.....
Mississippi	248	New Mexico	.....
Missouri	2,265	Utah	545
New Hampshire	130,428	Washington	44
New Jersey	3,722		
New York	9,671,931	Total, Territories	645
North Carolina	1,767		
Ohio	27,533	Aggregate	10,991,996

The total production of hops in the United States in 1850 was 3,497,029 pounds; and in 1860 10,991,996 pounds, showing a remarkable increase in the cultivation of this crop.

New York produces nearly all the hops raised in the United States. In 1850 this State produced over two and a half million pounds, while all the other States and Territories produced less than one million pounds; and in 1860 New York produced over nine and a half million pounds, while all the other States and Territories produced less than one and a half million pounds.

Next to New York, Vermont raises more hops than any other State, producing 638,677 pounds in 1860, against 288,023 pounds in 1850.

In this country, as in England, the cultivation of hops is confined to a comparatively small area. New York raises over eight-tenths of all the hops produced in the United States; and in this State

the bulk of the crop is raised in a few counties. The county of Otsego produces 3,507,069 pounds; Madison, 1,520,657 pounds; Schoharie, 1,441,648 pounds; Oneida, 838,460 pounds; Herkimer, 707,910 pounds; Montgomery, 515,584 pounds. These six counties in New York produce over eight and a half million pounds of hops, out of a total crop of eleven millions in the States and Territories.

TOBACCO.

Pounds of tobacco produced in the United States in 1860.

STATES.	POUNDS.	STATES.	POUNDS.
Alabama	232, 914	Oregon	405
Arkansas	989, 980	Pennsylvania	3, 181, 586
California	3, 150	Rhode Island	705
Connecticut	6, 000, 133	South Carolina	104, 412
Delaware	9, 699	Tennessee	43, 448, 097
Florida	828, 815	Texas	97, 914
Georgia	919, 318	Vermont	12, 245
Illinois	6, 885, 262	Virginia	123, 968, 312
Indiana	7, 993, 378	Wisconsin	87, 340
Iowa	303, 168		
Kansas	20, 349	Total, States	434, 183, 561
Kentucky	108, 126, 840		
Louisiana	39, 940	TERRITORIES.	
Maine	1, 583		
Maryland	38, 410, 965	District of Columbia	15, 200
Massachusetts	3, 233, 198	Dakota	10
Michigan	121, 099	Nebraska	3, 636
Minnesota	38, 938	Nevada	.....
Mississippi	159, 141	New Mexico	7, 044
Missouri	25, 086, 196	Utah	.....
New Hampshire	18, 581	Washington	10
New Jersey	149, 485		
New York	5, 764, 582	Total, Territories	25, 900
North Carolina	32, 853, 250		
Ohio	25, 092, 581	Aggregate	434, 209, 461

The amount of tobacco raised in the States and Territories in 1850 was 199,752,655 pounds; and in 1860 434,209,461 pounds, showing an increase of nearly 220 per cent.

Of this amount Virginia produced in 1860 123,968,312 pounds, and Kentucky 108,126,840 pounds. In other words, these two States produced in 1860 more than half the tobacco grown in the United States.

In 1850 Virginia raised 56,803,227 pounds, and Kentucky 55,501,196 pounds, or 112,304,423 pounds together. In other words, in 1850, out of a total product of tobacco of less than two hundred million pounds in the States and Territories, these two States produced over one hundred and twelve million. It will be seen, too, that the increase in the crop of tobacco in these two States since 1850 is over 100 per cent., which, considering the magnitude of the crop in 1850, is very remarkable.

The following table shows the quantity of tobacco grown in the New England States in 1860, as compared with 1850:

	1860.	1850.
Connecticut	6,000,133	1,267,624
Maine	1,583	.....
Massachusetts	3,233,198	138,246
New Hampshire	18,581	50
Rhode Island	705	.....
Vermont	12,245	.....
Total	9,266,445	1,405,920

In 1850 the amount of tobacco raised in the New England States was less than one and a half million pounds, while in 1860 it was over nine and a quarter million pounds—an increase of over 500 per cent.

Of the nine and a quarter million pounds raised in the New England States, Connecticut produced six million, and Massachusetts over three and one-fifth million.

The following table shows the amount of tobacco grown in the middle States in 1860, as compared with 1850:

	1860.	1850.
New York	5,764,582	83,189
New Jersey	149,485	310
Pennsylvania	3,181,586	912,651
Maryland	38,410,965	21,407,497
Delaware	9,699	.....
District of Columbia	15,200	7,800
Total	47,531,517	22,411,447

Maryland produced nearly twenty-one and a half million pounds of tobacco in 1850, while all the other middle States produced only about one million pounds. In 1860 this State produced nearly thirty-eight and a half million pounds, while the other middle States produced over nine million. New York and Pennsylvania show a remarkable increase in the tobacco crop. New York has increased from 83,189 pounds in 1850, to over five and three-fourth million pounds in 1860. The increase in Pennsylvania is by no means so great, but is nevertheless quite striking.

The following table shows the amount of tobacco raised in the southern States in 1860, as compared with 1850:

	1860.	1850.
Alabama	232,914	164,990
Arkansas	989,980	218,936
Florida	828,815	998,614
Georgia	919,318	423,924
Mississippi	159.141	49,960
North Carolina	32,853,250	11,984,786
South Carolina	104,412	74,285
Louisiana	39,940	26,878
Tennessee	43,448,097	20,148,932
Texas	97,914	66,897
Virginia	123,968,312	56,803,227
Total	203,642,093	90,961,429

Virginia, Tennessee, and North Carolina are the three principal tobacco-growing States in the south. These three States produce two hundred million pounds of the two hundred and three and a half million pounds raised in the southern States.

The following table shows the amount of tobacco raised in the western States in 1860, as compared with 1850:

	1860.	1850.
Illinois	6, 885, 262	841, 394
Indiana	7, 993, 378	1, 044, 620
Iowa	303, 168	6, 041
Kansas	20, 349	.....
Kentucky	108, 126, 840	55, 501, 196
Michigan	121, 099	1, 245
Missouri	25, 086, 196	17, 113, 784
Ohio	25, 092, 581	10, 454, 449
Wisconsin	87, 340	1, 268
Minnesota	38, 938	.....
Nebraska	3, 636	.....
Total	173, 758, 787	84, 963, 997

Next to Kentucky, Ohio and Missouri are the greatest tobacco-growing States in the west. The crop has also increased largely in these States since 1850. Indiana and Illinois come next, the former producing nearly eight million pounds, and the latter nearly seven million pounds.

The following table shows the amount of tobacco grown in the Pacific States in 1860, as compared with 1850:

	1860.	1850.
California	3, 150	1, 000
Oregon	405	325
New Mexico	7, 044	8, 467
Utah	.....	70
Washington	10	.....
Total	10, 609	9, 862

But little tobacco is raised on the Pacific coast, and it has increased a mere trifle since 1850. In fact, in New Mexico there is an actual decrease, which is true of no other State except Florida.

The returns show that tobacco is raised in every State, and in all the Territories except Dakota.

In 1850 the amount of tobacco raised in all of the States and Territories was eight pounds to each inhabitant, and in 1860 about fourteen pounds. The unsettled condition of Kentucky since the commencement of the war, with the loss of almost the entire crop in Virginia, have caused a great diminution in the supply of tobacco, and prices have advanced very rapidly. This has stimulated the cultivation of tobacco in the northern States to an extent which it never would have attained in ordinary circumstances.

The principal variety of tobacco grown in the northern States is the Connecticut seed-leaf. It is ordinarily grown for cigar wrappers, and the larger and more perfect the leaf the more profitable is the crop. For smoking or chewing it is an inferior variety. In fact, it seems almost impossible to grow a good quality of chewing-tobacco in the northern States. It is found much more profitable to grow a large, tough leaf, suitable for cigar wrappers, than to attempt to grow a smaller crop of better quality.

CANE SUGAR, MAPLE SUGAR, SORGHUM MOLASSES, HONEY, &c.

Table showing the quantity of cane and maple sugar, and cane, maple, and sorghum molasses produced in the United States in 1860.

STATES.	Cane sugar, hogsheads of 1,000 pounds each.	Maple sugar, pounds of.	Cane molasses, gallons of.	Maple molasses, gallons of.	Sorghum molasses, gallons of.
Alabama	175	228	85,115	.....	55,653
Arkansas	.....	3,077	.....	124	115,604
California	.....	.....	.....	6	552
Connecticut	.....	44,259	.....	2,277	395
Delaware	.....	.....	.....	.....	1,613
Florida	1,669	.....	436,357	.....	.....
Georgia	1,167	991	546,749	20	103,490
Illinois	.....	134,195	.....	20,048	806,589
Indiana	.....	1,541,761	.....	292,908	881,049
Iowa	.....	315,436	.....	11,405	1,211,512
Kansas	.....	3,742	.....	2	87,656
Kentucky	.....	380,941	.....	140,076	356,705
Louisiana	221,726	.....	13,430,772	.....	.....
Maine	.....	306,742	.....	32,679	.....
Maryland	.....	63,281	.....	2,404	907
Massachusetts	.....	1,006,078	.....	15,307	.....
Michigan	.....	4,051,822	.....	78,998	86,953
Minnesota	.....	370,669	.....	23,038	14,178
Mississippi	506	99	10,016	.....	1,427
Missouri	402	142,028	22,305	18,289	796,111
New Hampshire	.....	2,255,012	.....	43,833	.....
New Jersey	.....	3,455	.....	8,088	396
New York	.....	10,816,419	.....	131,843	516
North Carolina	38	30,845	12,494	17,759	263,475
Ohio	.....	3,345,508	.....	370,512	779,076
Oregon	.....	.....	.....	.....	315
Pennsylvania	.....	2,767,335	.....	114,310	22,749
Rhode Island	.....	.....	.....	.....	20
South Carolina	198	205	.....	.....	51,041
Tennessee	2	115,620	2,830	74,372	706,663
Texas	5,099	.....	408,358	.....	112,412
Vermont	.....	9,897,781	.....	16,253	.....
Virginia	.....	938,103	.....	99,605	221,270
Wisconsin	.....	1,584,451	.....	83,118	19,854
Total States	230,982	40,120,083	14,963,996	1,597,274	6,698,181
TERRITORIES.					
District of Columbia	.....	.....	.....	.....	.....
Dakota	.....	.....	.....	.....	20
Nebraska	.....	122	.....	275	23,497
Nevada	.....	.....	.....	.....	.....
New Mexico	.....	.....	.....	.....	1,950
Utah	.....	.....	.....	40	25,475
Washington	.....	.....	.....	.....	.....
Total Territories	.....	122	.....	315	50,942
Aggregate	230,982	40,120,205	14,963,996	1,597,589	6,749,123

The total amount of cane sugar produced in the United States in 1850 was 236,814,000 pounds; and in 1860, 230,982,000 pounds, showing a slight decrease in the last decade.

Louisiana produces over two hundred and twenty-one million of the two hundred and thirty million pounds raised in the whole United States.

Texas produced over five million pounds of cane sugar in 1860, being the greatest sugar-growing State after Louisiana.

Of maple sugar there was produced in 1850, in the whole United States and Territories, 34,253,436 pounds; and in 1860, 40,120,205 pounds, or an increase of nearly six million pounds.

Of this amount New York and Vermont produced more than half; the former producing nearly eleven million pounds, and the latter nearly ten million pounds.

Michigan stands third, producing four million pounds. Ohio produces over three millions; Pennsylvania two and three quarter millions; New Hampshire two and a quarter millions; Wisconsin and Indiana each one and a half million; Massachusetts and Virginia about one million pounds each. For the amount raised in the other States we would refer to the foregoing table.

The article known as maple sugar is made from the sap of the *Acer Saccharinum*, or sugar maple, (known also as rock maple,) one of the most symmetrical and beautiful of American forest trees. It is found in nearly every State of the Union, but is most abundant between the parallels of 43° and 46°. The process of making the sugar may be briefly described as follows: As soon as the sap begins to flow in the spring, which is usually from the 1st to the 15th of March, the trees are "tapped" by boring one or two holes of half an inch in diameter and two inches deep, in each tree, and from fifteen to twenty-four inches above the ground. Into these holes are inserted hollow wooden plugs, called "quills," which conduct the sap into wooden troughs or pails placed beneath. Sometimes the orifice is made with a heavy, curvilinear chisel, which is driven into the sap-wood with a wooden mallet, and a wooden spout, properly prepared, is inserted to carry off the sap. The careless use of the axe in tapping, is frequently indulged to the great injury of the trees and to their premature destruction. The sap, ordinarily, runs only in the day-time and after frosty nights, commencing as soon as it begins to thaw in the morning, and ceasing as soon as it begins to freeze towards evening. Each tree will yield from one to four gallons of sap in twenty-four hours. Cold and dry winters, with frosty nights and warm, sunny days during the "sugaring season," are most favorable for the production of sap. The sap is collected from the troughs and placed in sheet-iron pans of about eight inches deep, four feet wide and eight to twelve feet long, set on brick arches, (kettles were formerly used for the purpose.) A brisk boiling is kept up in the pans for twelve or fifteen hours, fresh sap being occasionally added, when the whole reaches the consistency of "sirup," in which form much of it is used for domestic purposes. The sirup is then strained and put in kettles holding from eight to ten gallons each, where it is again kept boiling for about two hours. (The best makers pour into each kettle-full of sirup about one pint of new milk to assist in clarifying.) During this process the impurities rise to the surface and are carefully skimmed off. When the sirup has boiled sufficiently to "grain" well, it is allowed to partially cool, (stirring constantly,) and is then poured into pans or moulds, when it becomes the "maple sugar" of commerce. On the average, twenty quarts of sap will make one pound of sugar, and each tree will produce from three to four pounds of sugar annually. Very large trees will produce eight to ten pounds. The sugaring season usually lasts from four to six weeks, and until the buds of the tree begin to swell vigorously, when the sap diminishes in quantity and quality.

Of sorghum molasses the product was 6,749,123 gallons.

It is an interesting fact, as showing how rapidly a plant can be distributed through the country, that we have returns of sorghum molasses from twenty-eight out of the thirty-four States reported.

The high price of sugar and molasses since the war has stimulated the cultivation of sorghum to to an unusual degree. The drought of 1863 in the west, followed by an unusually severe frost before the plants were ripe, destroyed the sorghum crop of 1863. Had the season been favorable, a large

amount of sorghum molasses would have been produced, as there was a larger area planted than ever before. The disastrous effect of the drought and early frost served to discourage many from planting in 1864 who would otherwise have engaged in the business.

Sugar has not been made to any extent from sorghum, and thus far the difficulties in the way of its manufacture, adverted to in our previous reports, have not been overcome.

BEET SUGAR.

Within the last three years the price of sugar has doubled, and it is not improbable that the present high price will be maintained for some time to come.

Many trials have been made to manufacture an indigenous sugar, but, unhappily, the experiments have not been made to any extent on the proper vegetable. The sorghum has been tried and proves valuable for sirup, but the great difficulty in making sugar has not been overcome, and the high price, of this article continues.

We have been surprised that the cane has not yet been, to some extent, supplanted by the beet which involves no trials for experiments, as this plant has been cultivated successfully for a long period in France for this purpose, and the products obtained cannot be rivalled in beauty or exceeded in quality by the product of the cane.

The attempts which have been made to manufacture sugar from beets in this country have, as a general rule, till a year or two past, proved unsuccessful, probably owing to the fact that the experiments were tried on a small scale, with the rudest machinery. In France it is found that individual farmers cannot successfully manufacture sugar from the beet. It is properly a manufacturing, and not an agricultural process, one requiring a larger capital than most farmers are willing to invest. The better method would be to establish factories and encourage farmers to raise the beets at established prices per ton. In this way, with improved machinery, and the adoption of the more recent processes of manufacture, we see no reason why beet sugar cannot be produced in this country with great profit and advantage both to the manufacturers and the farmers. The climate of the southern and western States is well adapted to the growth of the beet, and as large crops can be grown here as in France. M. de Lavergne, in his recent work on French agriculture, states that the average production of beet-roots in the department of the Nord (where nearly half of all the sugar made in France is produced) is sixteen tons per acre. By actual trial it has been found that 120,000 pounds of beet-root will produce 8,400 pounds of sugar, or seven per cent., and 5,030 pounds of molasses. At this rate an acre of beets of sixteen tons would make 2,240 pounds of sugar, besides molasses.

The industry of beet sugar, so far as concerns the vegetable, is essentially agricultural, and this country would appear to combine all the conditions of success.

Beet-root sugar was formerly made in occasional instances in different parts of the northern States, but never in such a quantity as to find a place in the returns of the census. Within the last two or three years some attention has been given to the cultivation of the sugar-beet in Ohio and in Illinois. And there seems to be no doubt that sugar can be made in this country from the beet with considerable profit at present prices.

In addition to the sugar and molasses, there is another important item of profit—the leaves of the beets and the refuse pulp. Both can be used as food for cattle, and it must be borne in mind that as nothing is removed but sugar, all the manurial elements of the crop are left for the farm. The cultivation of the beet-root, therefore, is one of the very best methods of increasing the fertility of the farm. On this point M. de Lavergne remarks:

"It was feared, in the first instance, that the cultivation of the sugar-beet would lessen the production of cattle and wheat by occupying the best land. But this fear was ill-founded, at least relative to the best cultivated regions. It is now demonstrated that the manufacture of sugar, by creating a new source of profit, contributes to increase the other products of the soil. The extraction of the saccharine matter deprives the root of only part of its elements. Its pulp and foliage supply the animals

with an abundance of food; and the returns of the sugar-works enable them to add commercial manures, which indefinitely increase the fertility of the soil. In 1855 the city of Valenciennes, the principal seat of the manufacture, was able to inscribe upon a triumphal arch these significant words: 'Produce of wheat in the arondissement before the manufacture of sugar, 353,000 hectolitres, (961,173 bushels;) number of oxen, 700. Produce of wheat since the manufacture of sugar, 431,000 hectolitres, (1,158 256 bushels;) number of cattle, 11,500.'"

The pulp or solid residue amounts to about twenty per cent. of the entire root. When divested of the juice it still contains two or three per cent. of saccharine matter, and is greedily eaten by cattle and pigs, which fatten rapidly upon it. It is said not to be good, however, for milch cows. Ordinary beets and mangel-wurzel contain sugar, but the Silesian beets alone are cultivated for this purpose. By judicious selection and culture, varieties have been obtained which contain much more sugar than the ordinary variety. In obtaining this result, however, the size of the root has been reduced. M. Knauer, of Germany, has produced a variety which he names the imperial beet-root, which contains seventeen and a quarter per cent. of sugar. This improvement places the beet on a par with the cane as a sugar-plant, while the cultivator of the beet has several important advantages over the West India and Louisiana planters. The cultivation of the sugar-cane occupies from twelve to fifteen months, and it must all be manufactured in a few days, or great loss ensues. On the other hand, the beet requires but about four months to arrive at maturity, and then it can be stored and manipulated at leisure. We would earnestly recommend this subject to men of capital, and that the business may not be recklessly undertaken we have obtained from Professor H. Dussauce, an enlightened French chemist, at present residing in this country, an account of the beet cultivated for sugar, and the process of manufacture in France, which we subjoin.

OF THE BEET-ROOT.

The presence of sugar in the beet was observed by Margraff, and Achard, of Berlin, attempted the extraction of this sugar on a large scale; but it was only during the period of the continental system that the manufacture of sugar from the beet acquired such perfection in France as made it profitable. The beet so generally cultivated at the present time is derived from the *beta vulgaris.* The two principal varieties of this root are the red beet, which has been grown for a very long time in kitchen gardens, and the white beet. Between these two there are numerous varieties, having a flesh color of various intensity. The seeds of the same plant, in fact, frequently produce varieties of decidedly different shades of color. The red and the white beet, however, appear to be the most constant, and the intermediate varieties are the result of crosses.

The first has a large root, which grows in great part above the ground. It is a very hardy plant, and has been cultivated for a very long time in various parts of the continent as food for cattle, and is now very common. The root which has been preferred for the manufacture of sugar is conical, of a rose color without, and its concentric internal layers are also colored; but it appears that the *white beet of Silesia* is the more productive. The beet thrives in almost all kinds of soils, provided they be sufficiently manured. In Alsace (east of France) it succeeds in light and in strong argillaceous soils indifferently. Another valuable quality which this root possesses is that of succeeding in the most dissimilar climates. It is grown to advantage both in the north and south of France.

The beet is sown at once in the field, or in beds, and transplanted. The latter method appears now to obtain a decided preference, inasmuch as it leaves plenty of time for the preparation of the soil.

In a piece of ground well broken up by delving or ploughing, and highly manured, the seed is sown in lines or drills as soon as the spring frosts are no longer to be apprehended. The transplanting in the east of France takes place about the middle of May, and even in the beginning of June. The plants are generally set about 15 inches apart. In the north the beet harvest does not begin before the end of September, and generally ends in the course of October. The gathering is delayed as long as possible, inasmuch as the root increases visibly to the very end of the season. But gathering the beet

at a very late period in those countries where winter grain has to follow this crop is attended with more than one disadvantage. Without speaking of the difficulties that are incidental to wet seasons, a late seed time is generally unfavorable for wheat. To meet this difficulty Boussingault advises to take up the beets at the period when it becomes necessary to prepare the land for winter seed; that is to say, more than a month before the present general harvest of the root. In doing so he relied upon the interesting fact ascertained by Peligot in the course of his chemical researches, viz: *that the composition of the beet is identical at every age.* In this premature or anticipated beet harvest a less weight of root is of course gathered than would have been obtained at a later period; but the nutritious power of these roots are the same as they would ever have been. The grand questions to be determined were, whether the root would keep or not, and whether the cattle would eat them from the pile as freely as from the field. All this was ascertained in the course of the winter; the beet kept perfectly, and the cattle eat it as freely as ever. The procedure to be adopted to secure a crop of beets of average weight some considerable time before the usual period is simply to transplant earlier, but more closely, with less space between the drills. If experience decides in favor of this method, a late and unfavorable seed time for winter grain will be completely obviated.

The beet which grows above the ground is best gathered with the hand; such as grow under ground require to be loosened by running a plough along the drill. In Alsace it is the custom to take away the leaves, and to trim the roots upon the ground; the refuse thus obtained constitutes a considerable mass of manure, which it is well to plough in immediately.

Cost of beet culture for two and a half acres of good land in France.

Rent, taxes, interest	$23 00
Manure	26 00
Two ploughings and two harrowings	17 20
Seeding	3 60
Weeding and delving	7 00
Digging and cartage	7 20
	84 00

The production varies between sixty and ninety thousand pounds, and, consequently, the price of one thousand pounds is from 95 cents to $1 40. The value of the leaves used as food for cattle saves some accessary expenses. The leaves falling during the vegetation and the small roots left in the ground represent about 9,600 pounds of manure. The leaves taken from the root vary from thirty to thirty-six thousand pounds. These products are worth from $10 to $12.

In France the product of each 110 pounds weight of beet is estimated at 4.56, or somewhat more than four and a half pounds of white sugar. The amount of loss in the manufacture may be conceived from the actual composition of the beet, which, by the process followed by Peligot to exhaust the dry root by boiling it with alcohol of moderate density, appears to contain from 4 to 5, up to 9, 10, 11, and nearly 12 per cent. of sugar. The analysis of Peligot has been confirmed by the experiments of Braconnat, who found the white beet of Silesia to have a very complex composition, as the following table shows:

Water	83.5
Sugar	10.5
Cellulose and pectose	0.8
Albumen, casein, and other neutral nitrogenized matters	1.5
Malic and pectic acids, gummy and fatty matters, aromatic and coloring matters, essential oil, &c., &c	3.7
	100.0

On an average, the analysis of Peligot would lead us to conclude that the beet contained, in 100 parts—

Water	87.0
Matters soluble in water, (sugar)	8.0
Matters unsoluble in water	5.0
	100.0

From which it appears that no more than about two-fifths of the sugar contained in the beet-root is extracted. As in crushing the cane, so in squeezing the rasped pulp of the beet, a part of the loss is owing to a certain quantity of sugar being left in the express-pulp. In fact, with the presses, whilst from 60 to 70 per cent. of juice is obtained, the root actually contains 95 per cent. The loss here, however, is of less consequence than in the cane, the trash of which is used for fuel, whilst the pulp of the beet serves as food for cattle. The pulp indeed is found to possess very nearly the same amount of nutritive power as the root which produces it.

One of the considerations which is of the highest importance in connexion with the production of sugar from the beet is inherent in the difficulty of preserving the root after it is full grown. Gathered at the end of autumn, the root suffers no less from severe frost than it does from mild, open weather; frost destroys its organization, and in mild winters vegetation continues, at the expense of the sugary principle which had been formed during the growth. If the beet actually contains at every period of its existence the same quantity of sugar, there would, probably, be a great advantage in not waiting for the period of complete maturity, by sowing somewhat thicker than wont, any difference of weight would probably be made up, and then there would be no risk of loss in keeping.

The quantity of beet gathered from a given extent of land necessarily varies with the soil, the pains bestowed upon the crop, and the quantity of manure that has been used The following are a few particulars from official documents:

Produce per acre.

	Tons.	Cwt.	Qrs.	Lbs.
Department of the pas de Calais	12	17	0	4
" " " North	14	6	1	23
" " " Cher	15	11	0	1

But in other departments the produce is considerably smaller; so that the average for the whole of France has been estimated at not more than ten tons, nine hundred weight, one quarter, and thirteen pounds per acre; an average which approaches very closely to that obtained by Boussingault on his own farm during a period of seven years.

Assuming four and six-tenths pounds of sugar to be obtained from every 110 pounds of beet, the produce, in sugar, from an acre in the course of seven months will amount to nine hundred weight, three quarters, and twenty-two pounds. An acre of land in sugar-cane yields in fourteen months fifteen hundred weight, one quarter, and ten pounds.

To manage one acre of land under beet-root, 45.6 days of a man and 14.1 of a horse was the amount of labor expended. A domain of 360 acres in the south is worked by 150 negroes, which, reckoning the time that the crop is on the ground at fourteen months, would bring the number of days' labor by a man to 177 per acre.

Such an expenditure of labor must, in the nature of things, absorb the greater part of the profits, and it was shown that the cost of cultivation and manufacture of cane-sugar was equal to the value of the produce. Still the cane presents one considerable advantage over the beet—namely, that of furnishing the fuel necessary to the boiling, an advantage which will be better understood when it is known that in the manufacture of every 100 pounds of beet-sugar the consumption of coal amounts to twenty-two pounds.

The importance of the fabrication of sugar can be seen in the following table, which indicates the production of this substance throughout the world:

Annual production.

Bengales, China, Siam	200,000,000	pounds.
English colonies	440,000,000	"
Spanish "	650,000,000	"
Dutch "	160,000,000	"
Swedish and Danish	20,000,000	"
French colonies	220,000,000	"
France*	303,000,000	"
Belgium	12,000,000	"
Brazil	350,000,000	"
United States†	420,000,000	"
Germany	304,000,000	"
Russia	70,000,000	"
Total‡	3,149,000,000	

EXTRACTION OF SUGAR FROM THE BEET.

In so important a fabrication we cannot enter into all the particulars, but give an account of the different processes followed in French manufactures.

The beets are taken out of the ground when they have acquired their full growth, and are carefully separated from those which have been injured by the operation. The beets are made into heaps in the field, and covered with leaves until there is danger of frost, when they must be housed or buried in pits. The upper part of the root at the starting point of the stalk is cut off, because this portion is harder and contains but little sugar.

The beets, after being cleansed and washed, are thrown into a machine, which reduces them to as fine a pulp as possible, and breaks up the cells. The pulp is placed in woollen bags laid on each other, and between which metallic plates are introduced; after which the mass is compressed by a screw-press, and the juice ccollected which flows out, and which constituted about 0.4 of the juice contained. The bags and plates are then placed under the platform of an hydraulic press, which is unscrewed after having maintained the pressure for about ten minutes, when the bags are placed two by two between two plates, and again still more powerfully compressed. In this manner 75 to 80 per cent. of beet-root juice may be extracted, only about fifteen parts being left in the pulp.

As the juice soon changes, it is essential to raise it as quickly as possible to a high temperature, in order to prevent fermentation, and to saturate with some lime the free acids, which would soon convert a portion of the sugar into glucose. For this purpose the juice on leaving the press is conveyed into a double-bottomed boiler, heated by steam, and the temperature is rapidly raised from 140° to 158°; afterwards it is conveyed into another boiler, also heated by steam, where the *desiccation* or treatment with lime is effected. Hydrated lime is usually made by pouring on quicklime ten times its

* The fabrication of beet-sugar in France since 1828 to 1836 has raised from 5,330,000 pounds to 90,000,000. From 1837 to 1847 it oscillated between sixty-two and one hundred and six millions. Since that time the production has varied between one hundred and twenty-four and one hundred and fifty-four millions. In 1856 France produced 184,000,000, and in 1858, 303,067,000.

† Louisiana alone produced, in its 1,400 factories, 280,000,000 pounds of raw sugar, and more than 150,000,000 gallons of molasses.

‡ If to this sum we add the quantities consumed in the East Indies and other parts of the world, not enumerated in the above table, we find the quantity to amount to 5,100,494,000 pounds, thus classified:

Cane-sugar	2,900,000,000
Beet "	960,000,000
Maple "	40,494,000
Palm "	200,000,000
	5,100,494,000

weight of boiling water, and when the lime is entirely slacked, passing it over a metallic sieve, which arrests the grains of sand and the now decarbonated portions. The juice is first heated to 167° in the desiccating boiler, the milk of lime is then added, and the whole is stirred to render the mixture homogeneous; the temperature is raised to 212°, the supply of steam being cut off when ebullition commences. The lime combines with the free acids, the albuminous substances, the fatty and coloring matters, producing insoluble compounds, effecting at the same time a kind of clarification by carrying down with the insoluble compounds organic remains which were suspended in the juice. A thick scum having formed on the surface of the liquid, the latter is kept from boiling in order to prevent its rupture by the bubbles of steam. The proportion of lime added varies with the nature of the beet, and with their freshness, only three pounds for one thousand pints of juice being used in the beginning of the season, and with fresh beets, which quantity is gradually increased, and frequently reaches ten pounds before the close of the season. An excess of lime remains in the liquor, and forms a deliquescent compound with a portion of the sugar. In some factories it has been endeavored to saturate it with a proper quantity of acid.

When the operation is terminated, the liquor is drawn off and filtered through animal charcoal; the filters used for this purpose being large sheet-iron cylinders, having a false bottom pierced with holes like a colander. A cloth is extended over the bottom, over which is spread very coarsely powdered animal chalk, added in successive layers until it fills the cylinders to within one and a half foot of the top, when another cloth is laid upon it, and is covered by another metallic plate pierced with holes; each filter receiving from 6,000 to 8,000 pounds of charcoal. The filters should be kept constantly filled with fluid, which is easily done by means of a stop-cock. After this process, by which the juice loses a portion of its coloring matter, and the lime in excess, which adheres to the charcoal, it is conveyed as rapidly as possible into the concentrating boilers, which are generally shallow, and are heated by a circulation of a light pressure of steam through copper tubes arranged over their bottoms. The juice is raised to a temperature of 70° in 10 or 12 minutes. The workman judges by indications understood by experience, if it is properly concentrated, or if the *boiling* is completed. During the ebullition, which terminates at a temperature of 266° to 275°, a considerable portion of the sugar is altered, and to diminish the loss the evaporation must be effected as rapidly as possible. This operation has been greatly improved by boiling in vacuo—that is, in close boilers, heated by steam, and brought into communication with worms and receivers, in which a vacuum is made. When ebullition takes place at a lower temperature, the quantity of sugar changed is much smaller.

When the sirup is properly boiled, it is collected in a cooler, which generally receives the products of five or six boilings, and its temperature then falls to about 176°. Crystallization then commences; but as soon as any crystals form they are detached from the sides and the sirup stirred to bring them again into suspension. When the temperature has fallen to 130° or 122° the sirup is poured into large conical moulds of metal or baked clay, resting on the point, which is furnished with a hole previously stopped with a plug of wet muslin. The moulds are ranged on long benches with openings, through which the escaping fluids fall into zinc gutters, whence they flow into reservoirs. The temperature of the room containing the moulds should be about 86°. Crystallization is completed in about 24 or 36 hours, when the plug is removed from the opening in the mould, and the point of the loaf pierced with an awl so as to draw off the molasses, which is again concentrated even further than the original sirup, and crystallized in moulds. When the molasses is too highly colored, as happens sometimes, it is diluted with a sufficient quantity of water, filtered through animal chalk, concentrated, and recrystallized. The sirup which drains from the second sugar is frequently subjected to the same process for a third time, but the crystallization then requires a great length of time.

When the sugar has drained sufficiently, the *loaves* are *loosened*—that is, the moulds are inverted and the loaves detached by gentle blows; after which they are placed in the wareroom, protected from dampness. This is raw beet sugar, which requires refining before being fitted for consumption.

REFINING.

The process of refining beet-sugar is similar to that of the cane. We give below the different proportions of substances obtained by refining:

One hundred pounds of raw beet-sugar being refined, give the following.

Quality of the raw sugar.	Sugar in loaf.	Lump.	Sum of white sugar.	Vergeoese.	Molasses.
Line fourth	52	15	67	15	18
Fourth common	54	16	70	14	16
Fourth ordinary	58	17	75	12	13
Good fourth	60	18	78	10	12
Clarified	70	16	86	5	9

COST OF THE MANUFACTURE OF BEET-SUGAR.

Cost of producing six hundred thousand pounds of sugar.

Ten million pounds of beet-roots cost		$13, 000
Labor		4, 200
Fuel		3, 600
Lime—animal black		2, 400
Ten per cent. on cost of machinery		3, 000
Five per cent. on cash capital		500
Rents, repairs, and other contingencies		4, 950
		31, 650
From which deduct one hundred and twenty thousand pounds of molasses,	$2, 160	
Residue, pulp, &c	2, 490	
		4, 650
Cost in the factory		27, 000
Two hundred pounds in the factory, cost		9 00
Handling, storage, &c		3 00
Duty		9 90
		21 90

Price varies from $22 to $28, say $24; profit, $2 10.

Showing, on six hundred thousand pounds, a profit of $6, 300, or $1 05 per hundred pounds.

Time occupied, one hundred days.

The cost of producing cane-sugar in this country has generally been estimated at about $3 50 per one hundred pounds.

These statements will enable our readers interested in this subject to realize the practicability of making beet-sugar with profit, especially under the new and unfortunate condition of our country. It is not probable that the prices of an article, the use of which is so general, will very soon fall so low as to render the manufacture of sugar from the beet a precarious or hazardous business.

Since the foregoing was prepared we find an editorial article on beet-sugar in the "Journal of Commerce," of New York, of November 11, 1864, which concludes as follows:

"Beet-sugar is a novelty in this country, but an old story in Europe, where it is manufactured in immense quantities, and daily used on the tables of millions of people. It is sucrose—possessing all the properties of cane-sugar. The white Silesian beet is considered the best, containing a larger proportion of saccharine matter, and a less amount of injurious salts than any other kind. Fresh beet-roots yield from six to seven per cent. of sugar. The method of manufacture is very simple. The beets are cut or rasped into fine pieces, and the juice is then pressed out, or obtained by infusion. Lime-water is added to make it alkaline; the excess of lime is subsequently removed by a current of carbonic acid gas; the liquid filtered, evaporated and crystallized precisely like cane-sugar. Small experiments in the manufacture of beet-sugar have been made in this country with some success. To make it a reasonably cheap product, however, extensive tracts of land, and large outlays for machinery and labor are required.

"The public will encourage every effort that may be made in this region of discovery and enterprise. The present high prices of sugar afford a good opportunity for talent and capital to develop our latent saccharine resources."

HONEY.

Of honey, there was produced in 1860 in the United States 23,366,357 pounds, but little over half the amount of maple sugar.

New York produces 2,369,751 pounds, and North Carolina 2,055,969 pounds. These two States produce more honey than any of the others. Kentucky stands third, producing about 1,750,000 pounds. Missouri and Tennessee rank next, producing over 1,500,000 each. Virginia, Pennsylvania, and Ohio each produce nearly 1,500,000 pounds. Illinois and Indiana each produce about 1,250,000 pounds. No other States than these mentioned, produce one million pounds.

The census of 1850 did not give the amount of honey separately from beeswax. The total amount of honey and beeswax produced in the United States in 1850 was 14,853,790 pounds, and in 1860 24,689,144 pounds, showing an increase of over 60 per cent. The proportion of honey to beeswax is about one pound of beeswax to seventeen and three-quarters pounds of honey.

DOMESTIC ANIMALS.

States.	Horses, number of.	Asses and mules, number of.	Working oxen, number of.	Milch cows, number of.	Other cattle, number of.	Sheep, number of.	Swine, number of.
Alabama	127,063	111,687	88,316	230,537	454,543	370,156	1,748,321
Arkansas	140,198	57,358	78,707	171,003	318,089	202,753	1,171,630
California	160,610	3,681	26,204	205,407	948,731	1,088,002	456,396
Connecticut	33,276	82	47,939	98,877	95,091	117,107	75,120
Delaware	16,562	2,294	9,530	22,595	25,596	18,857	47,848
Florida	13,446	10,901	7,361	92,974	287,725	30,158	271,742
Georgia	130,771	101,069	74,487	299,688	631,707	512,618	2,036,116
Illinois	563,736	38,539	90,380	522,634	970,799	769,135	2,502,308
Indiana	520,677	28,893	117,687	363,563	588,144	991,175	3,099,110
Iowa	175,088	5,734	56,964	189,802	293,322	259,041	934,820
Kansas	20,344	1,496	21,551	28,550	43,354	17,569	138,224
Kentucky	355,704	117,634	108,999	269,215	457,845	938,990	2,330,595
Louisiana	78,703	91,762	60,358	129,662	326,787	181,253	634,525
Maine	60,637	104	79,792	147,314	149,827	452,472	54,783
Maryland	93,406	9,829	34,524	99,463	119,254	155,765	387,756
Massachusetts	47,786	108	38,221	144,492	97,201	114,829	73,948
Michigan	136,917	330	61,686	179,543	238,615	1,271,743	372,386
Minnesota	17,065	377	27,568	40,344	51,345	13,044	101,371
Mississippi	117,571	110,723	105,603	207,646	416,660	352,632	1,532,768
Missouri	361,874	80,941	166,588	345,245	657,153	937,445	2,354,425
New Hampshire	41,101	10	51,512	94,880	118,075	310,534	51,935
New Jersey	79,707	6,362	10,067	138,818	89,909	135,228	236,089
New York	503,725	1,553	121,703	1,123,634	727,837	2,617,855	910,178
North Carolina	450,661	51,388	48,511	228,623	416,676	546,749	1,883,214
Ohio	625,346	7,194	63,078	676,585	895,077	3,546,767	2,251,653
Oregon	36,772	980	7,469	53,170	93,492	86,052	81,615
Pennsylvania	437,654	8,832	60,371	673,547	685,575	1,631,540	1,031,266
Rhode Island	7,121	10	7,857	19,700	11,548	32,624	17,478
South Carolina	81,125	56,456	22,629	163,938	320,209	233,509	965,779
Tennessee	290,882	126,345	102,158	249,514	413,060	773,317	2,347,321
Texas	325,698	63,334	172,492	601,540	2,761,736	753,363	1,371,532
Vermont	69,071	43	24,639	174,667	153,144	752,201	52,912
Virginia	287,579	41,015	97,872	330,713	615,882	1,043,269	1,599,919
Wisconsin	116,180	1,030	93,652	203,001	225,207	332,954	334,055
Total States	6,224,056	1,138,103	2,204,275	8,516,872	14,699,215	21,590,706	33,459,138

Domestic animals—Continued.

Territories.	Horses, number of.	Asses and mules, number of.	Working oxen, number of.	Milch cows, number of.	Other cattle, number of.	Sheep, number of.	Swine, number of.
District of Columbia	641	122	69	639	198	40	1,099
Dakota	84	19	348	286	167	193	287
Nebraska	4,449	469	12,594	6,995	17,608	2,355	25,369
Nevada	541	134	620	947	3,904	376	3,571
New Mexico	10,066	11,291	25,266	34,369	29,094	830,116	10,313
Utah	4,565	851	9,168	11,967	12,959	37,332	6,707
Washington	4,772	159	2,571	9,660	16,228	10,157	6,383
Total Territories	25,118	13,045	50,636	64,863	80,158	880,569	53,729
Aggregate	6,249,174	1,151,148	2,254,911	8,581,735	14,779,373	22,471,275	33,512,867

In our review of the tables of live-stock we have confined ourselves to the official returns, which include for the most part the domestic animals connected with the agriculture of the country. By such a course only can we institute those comparative examinations from which alone can be determined the progress or decline of any interests involved in the census. The amount of live-stock scattered throughout cities and large towns, which escaped the official record, was known to be very considerable in the aggregate; and, to be enabled to arrive at some close approximation thereof, we directed each of the census takers to make return of the numbers of animals in his district believed to have been omitted on his schedules. The summary of these returns will be found in a table at page 192, the details of which may safely be added to the numbers in the official tables immediately preceding to those of the several State tables, and to those given in the present commentary, by such as desire to arrive at the fullest numbers for 1860, while they should be excluded from exhibits from which we would prepare comparative statements. To have embodied the numbers of the table referred to with the official return, or to have included them in this review, would have lessened the means of comparison, and led to erroneous conclusions as to the progress of this branch of agricultural production, having been omitted, as they were, in the previous census.

HORSES.

There were in the States and Territories 4,336,719 horses in 1850, and 6,249,174 in 1860.

The following table shows the number of horses in the New England States in 1860, as compared with 1850:

	1860.	1850.
Connecticut	33,270	26,879
Maine	60,637	41,721
New Hampshire	41,101	34,233
Massachusetts	47,786	42,216
Rhode Island	7,121	6,168
Vermont	69,071	61,057
Total	258,992	212,274

Vermont has more horses than any other New England State. Maine comes next, and then in order succeed Massachusetts, New Hampshire, and Connecticut. There were 212,274 horses in the New England States in 1850, and 258,992 in 1860, showing an increase of nearly 47,000.

The following table shows the number of horses in the middle States in 1860, as compared with 1850:

	1860.	1850.
New York	503, 725	447, 014
New Jersey	79, 707	63, 955
Pennsylvania	437, 654	350, 398
Delaware	16, 562	13, 852
Maryland	93, 406	75, 684
District of Columbia	641	824
Total	1, 131, 695	951, 727

There are a little over 1,000,000 horses in the middle States. New York has about 500,000 and Pennsylvania only about 60,000 less than New York. Maryland has about 93,500, and New Jersey nearly 80,000.

The following table shows the number of horses in the western States in 1860, as compared with 1850:

	1860.	1850.
Illinois	563, 736	267, 653
Indiana	520, 677	314, 299
Iowa	175, 088	38, 536
Kansas	20, 344	.....
Kentucky	355, 704	315, 682
Michigan	136, 917	58, 506
Minnesota	17, 065	860
Missouri	361, 874	225, 319
Ohio	625, 346	463, 397
Wisconsin	116, 180	30, 179
Nebraska	4, 449	.....
Total	2, 897, 380	1, 714, 431

There were 1,714,431 horses in the western States in 1850, and 2,897,380 in 1860, an increase of over 1,000,000. Ohio has more horses than any other western State, or 625,346. Illinois and Indiana have each over 500,000; Missouri 361,874, and Kentucky 355,704. These five States have over 2,500,000 horses, while all the other western States have less than 500,000.

The following table shows the number of horses in the southern States in 1860, as compared with 1850:

	1860.	1850.
Alabama	127, 063	128, 001
Arkansas	140, 198	60, 107
Florida	13, 446	10, 848
Georgia	130, 771	151, 331
Louisiana	78, 703	89, 514
Mississippi	117, 571	115, 460
North Carolina	150, 661	148, 693
South Carolina	81, 125	97, 171
Tennessee	290, 882	70, 636
Texas	325, 698	76, 760
Virginia	287, 579	272, 403
Total	1, 743, 697	1, 421, 014

There are less than one and three-fourths million horses in the southern States. Of these over one-sixth are in Texas, and nearly one-sixth in Tennessee. Virginia stands third, having 287,579 horses. There are more horses in Texas, Tennessee, and Virginia, than in all the other southern States together.

The following table shows the number of horses in the Pacific States in 1860, as compared with 1850:

	1860.	1850.
California	160,610	21,719
Oregon	36,772	8,046
New Mexico	10,066	5,079
Utah	4,565	2,429
Washington	4,772	.....
Total	216,785	37,273

There are 216,785 horses in the Pacific States. Of this number California has 160,610.

The following table shows the number of inhabitants to each horse in the different sections of the United States in 1860 and in 1850;

	1860.	1850.
New England States	12.10	12.85
Middle States	7.36	2.96
Western States	3 54	2.50
Southern States	5.33	5.04
Pacific States	2.54	4.79
United States and Territories	5.03	5.34

In the United States there were in 1850 one hundred horses to every 534 inhabitants, and in 1860 one hundred horses to every 508 persons.

In the New England States there were only one hundred horses to every 1285 inhabitants in 1850, and one hundred horses to every 1210 inhabitants in 1860. In other words, the increase in the number of horses in the New England States has fully kept pace with the increase in population.

In the middle States there were 696 persons to every one hundred horses in 1850, and 736 in 1860. The increase in the number of horses does not keep pace with the increase in population. It will be seen, however, that there are nearly double the number of horses in proportion to population in the middle States than in the New England States.

In the western States there were in 1850 one hundred horses to every 250 inhabitants, and in 1860 one hundred horses to every 354 inhabitants. In 1850 every family of five persons, on the average, in the western States owned a team; since then the increase in the population has been much greater than the increase in the number of horses. Even now, however, there are two horses to every seven inhabitants.

In the southern States there is about one horse to every five inhabitants.

There are more horses in the Pacific States, in proportion to population, than in any other section. There are now about two horses to every five persons, or about the same proportion as there was in the west in 1850. There are now nearly double the number of horses in the Pacific States in proportion to population than there was in 1850.

ASSES AND MULES.

The total number of asses and mules in the States and Territories in 1860 was 1,151,148; and in 1850, 559,331, showing an increase of over 100 per cent.

The following table shows the number of asses and mules in the New England States in 1860, as compared with 1850:

	1860.	1850.
Maine	104	55
New Hampshire	10	19
Vermont	43	218
Massachusetts	108	34
Rhode Island	10	1
Connecticut	82	49
Total	357	376

There were but 376 asses and mules in the New England States in 1850; and number, there were even still less in 1860, or only 357.

In 1850 Vermont had 218, but in 1860 only 43. In Massachusetts, on the other hand, there were 34 in 1850, and 108 in 1860. In Maine, Rhode Island, and Connecticut, there is also an increase. But it is very evident that the mules are not a favorite working animal in the New England States.

The following table shows the number of asses and mules in the middle States in 1860, as compared with 1850:

	1860.	1850.
New York	1,553	963
Pennsylvania	8,832	2,259
New Jersey	6,362	4,089
Delaware	2,294	791
Maryland	9,829	5,644
District of Columbia	122	57
Total	28,992	13,803

There were in the middle States 13,803 asses and mules in 1850, and 28,992 in 1860, an increase of over 100 per cent. Maryland, Pennsylvania, and New Jersey employ mules to a considerable extent, but as yet in New York they have not generally been introduced, though they are on the increase.

In Pennsylvania and New Jersey they are used principally in the mining districts; while Maryland adopts, to some extent, the southern system of agriculture, in which mules are more generally used than at the north.

The following table shows the number of asses and mules in the western States in 1860, as compared with 1850:

	1860.	1850.
Indiana	28,893	6,599
Illinois	38,539	10,573
Ohio	7,194	3,423
Michigan	330	70
Missouri	80,941	41,667
Kentucky	117,634	65,609
Wisconsin	1,030	156
Iowa	5,734	754
Minnesota	377	14
Kansas	1,496	.....
Nebraska	469	.....
Total	282,637	129,865

There were in the western States, in 1850, 129,865 asses and mules, and in 1860, 282,637, showing an increase of over 115 per cent. Kentucky has more mules than any other western State, and Missouri comes next. These two States have more than *twice as many* asses and mules as all the other western States. In Illinois and Indiana mules are being extensively introduced, and the same is true of Iowa.

The following table shows the number of asses and mules in the southern States in 1860, as compared with 1850:

	1860.	1850.
Alabama	111,687	59,895
Arkansas	57,358	11,559
Florida	10,910	5,002
Georgia	101,069	57,379
Louisiana	91,762	44,849
Mississippi	110,723	54,547
North Carolina	51,388	25,259
South Carolina	56,456	37,483
Tennessee	126,335	75,303
Texas	63,334	12,463
Virginia	41,015	21,483
Total	822,047	405,222

There were in the southern States in 1850 405,222 asses and mules, and 822,047 in 1860. If we add Kentucky, Missouri, and Maryland to the southern States, we then have 1,030,451; while all the other States and Territories have only 120,697 asses and mules.

The following table shows the number of asses and mules in the Pacific States in 1860, as compared with 1850:

	1860.	1850.
California	3,681	1,666
Oregon	980	420
New Mexico	11,291	8,654
Utah	851	325
Washington	159	.....
Total	16,962	11,065

Asses and mules are used to a considerable extent in the Pacific States, but more especially in New Mexico.

In all the States and Territories there were in 1850 one ass or mule to every 41 inhabitants; and in 1860 one to every 27 inhabitants.

In the middle States there was one to every 480 inhabitants in 1850, and one to 298 in 1860.

In the western States there was one to every 48 inhabitants in 1850, and one to 36 in 1860.

In the southern States there was one to every 18 inhabitants in 1850, and one to every 11 inhabitants in 1860.

In the Pacific States there was one to every 16 inhabitants in 1850, and only one to every 32 inhabitants in 1860.

In all the sections except the New England and Pacific States, the increase in asses and mules has been much greater than the increase in population.

It is claimed that a good, well-bred mule will do as much work as a horse, while it can be kept at one-third less expense. Mules are liable to fewer diseases than horses, and will bear ill treatment better. For careless hands they are more profitable than horses, and the high prices which they bring, and the rapidly increasing demand for them, shows that the prejudice against them is not as great as formerly. The active life of a mule is about double that of horses. They require less than half the expense for shoeing. It is claimed that an average lot of mules can be disposed of more readily and at better prices than an average lot of horses; and that, as they cost less to feed, and can be worked a year earlier, they are a more profitable stock to raise.

WORKING OXEN.

The total number of working oxen in the States and Territories, in 1850, was 1,700,744, and in 1860, 2,254,911; an increase of 32 per cent.

The following table shows the number of working oxen in the New England States in 1860, as compared with 1850:

	1860.	1850.
Connecticut	47,939	46,988
Rhode Island	7,857	8,189
Massachusetts	38,221	46,111
Vermont	42,639	48,577
New Hampshire	51,512	59,027
Maine	79,792	83,893
Total	267,960	292,785

Excepting Connecticut, the number of working oxen has decreased in all the New England States since 1850. There were 292,785 in 1850, and only 267,960 in 1860—a decrease of 24,825 in ten years.

The following table shows the number of working oxen in the middle States in 1860, as compared with 1850:

	1860.	1850.
New York	121,703	178,909
New Jersey	10,067	12,070
Pennsylvania	60,371	61,527
Delaware	9,530	9,797
Maryland	34,524	34,135
District of Columbia	69	104
Total	236,264	296,542

In the middle States also there is a decrease of 60,278 working oxen since 1850. Of this decrease 57,206 is in the State of New York.

The following table shows the number of working oxen in the western States in 1860, as compared with 1850:

	1860.	1850.
Illinois	90,380	76,156
Indiana	117,687	40,221
Michigan	61,686	55,350
Missouri	166,588	112,168
Ohio	63,078	65,381
Iowa	56,964	21,892
Wisconsin	93,652	42,801
Minnesota	27,568	655
Kansas	21,551	.....
Kentucky	108,599	62,274
Nebraska	12,594	.....
Total	820,347	476,898

Here we have a decided increase since 1850—an increase of over 70 per cent. There is an increase of working oxen in every western State except Ohio, where there is a decrease of over 2,303, Ohio, in its agriculture, approximates more closely to the middle than to the western States, and the fact that there is a decrease in the older States shows, what we may well suppose to be the case, that oxen are found more useful in a new country than in one where a higher system of agriculture is adopted.

The following table shows the number of working oxen in the southern States in 1860, as compared with 1850:

	1860.	1850.
Alabama	88,316	66,961
Arkansas	78,707	34,231
Florida	7,361	5,794
Georgia	74,487	73,286
Mississippi	105,603	83,485
Louisiana	60,358	54,968
North Carolina	48,511	37,309
South Carolina	22,629	20,507
Tennessee	102,158	86,255
Texas	172,492	51,285
Virginia	97,872	89,513
Total	858,494	603,594

There is an increase of working oxen in each one of the southern States. There were in the aggregate 858,494 in the southern States in 1860, against 603,594 in 1850, an increase of over 40 per cent.

The following table shows the number of working oxen in the Pacific States in 1860, as compared with 1850:

	1860.	1850.
California	26,004	4,780
Oregon	7,469	8,114
New Mexico	25,266	12,257
Washington Territory	2,571	.....
Utah	9,168	5,266
Total	70,478	30,417

There is a greater increase in the Pacific States than in any other section—an increase of nearly 130 per cent. Oregon shows a slight decrease, while California has increased from 4,780 in 1850, to 26,004 in 1860. There is also a marked increase in New Mexico, though far less than in California.

The following table shows the number of working oxen to each hundred inhabitants in the different sections, and also in the States and Territories:

	1860	1850.
New England States	8	10
Middle States	2	4
Southern States	9	8
Western States	8	7
Pacific States	12	16
United States and Territories	6	7

In the New England States there were ten working oxen to each hundred inhabitants in 1850, and only eight in 1860.

In the middle States there were four in 1850, and only two to each hundred inhabitants in 1860.

In the western States there were seven in 1850, and eight in 1860.

In the southern States there were eight in 1850, and nine in 1860.

In the Pacific States there were sixteen in 1850, and twelve in 1860.

In the States and Territories there were seven working oxen to every hundred inhabitants in 1850, and six in 1860.

The Pacific States have more working oxen in proportion to population than any other section, The southern States come next, then the western and New England States, where the number is the same, and the middle States come last, where there is only one-fourth as many as in New England and the west.

MILCH COWS AND OTHER CATTLE.

The number of milch cows in the States and Territories, in 1860, was 8,581,735, against 6,385,094 in 1850—an increase of over 33 per cent.

Of "other cattle," not including working oxen, there were in 1860 14,779,373, against 10,293,069 in 1850—an increase of over 43 per cent.

The following table shows the number of milch cows and of "other cattle" in the New England States in 1860, as compared with 1850:

States.	Milch cows.		Other cattle.	
	1860.	1850.	1860.	1850.
Maine	147,314	133,556	149,827	125,890
New Hampshire	94,880	94,277	118,075	114,606
Vermont	174,667	146,128	153,144	154,143
Massachusetts	144,492	130,099	97,201	83,284
Rhode Island	19,700	18,698	11,548	9,375
Connecticut	98,877	85,461	95,091	80,226
Total	679,930	608,219	624,886	567,524

There were 679,930 milch cows in the New England States in 1860, against 608,219 in 1850; showing an increase of over 70,000. Of "other cattle," not including working oxen, there were 624,886 in 1860, against 567,524 in 1850, showing an increase of over 40,000.

Milch cows have increased about 14,000 in Maine, 14,400 in Massachusetts, 13,400 in Connecticut, and over 28,500 in Vermont.

In "other cattle" there has been a slight falling off in Vermont. It is evident that the dairy is attracting more attention in this State than feeding cattle for beef. In Maine, on the other hand, there is an increase of about 24,000; in New Hampshire, an increase of about 3,500; in Rhode Island, an increase of about 2,200; in Massachusetts, an increase of about 14,000; and in Connecticut, an increase of nearly 15,000.

The following table shows the number of milch cows and "other cattle" in the middle States in 1860, as compared with 1850:

States.	Milch cows.		Other cattle.	
	1860.	1850.	1860.	1850.
New York	1,123,634	931,324	727,837	767,406
New Jersey	138,818	118,736	89,909	80,445
Pennsylvania	673,547	530,224	685,575	562,195
Delaware	22,595	19,248	25,596	24,166
Maryland	99,463	86,856	119,254	98,595
District of Columbia	639	813	198	123
Total	2,058,696	1,687,201	1,648,369	1,532,930

The total number of milch cows in the middle States in 1860 was 2,058,696, against 1,687,201 in 1850; an increase of over 370,000. More than half the milch cows of the middle States are in the State of New York. This was also the case in 1850.

Pennsylvania has but little over half as many milch cows as New York, but the rate of increase is as great since 1850 as in the latter State.

Of "other cattle" there were 1,648,369 in the middle States in 1860, against 1,532,930 in 1850, showing an increase of over 115,000. In New York there has been a decrease in this class of stock of about 40,000, while in Pennsylvania there is an increase of over 123,000.

The following table shows the number of milch cows and "other cattle" in the western States in 1860, as compared with 1850:

States.	Milch cows.		Other cattle.	
	1860.	1850.	1860.	1850.
Illinois	522,634	294,671	970,799	541,209
Indiana	363,553	284,554	588,144	389,891
Iowa	189,802	45,704	293,322	69,025
Kansas	28,550	.....	43,354	.....
Kentucky	269,215	247,475	457,845	442,763
Missouri	345,243	230,169	657,153	449,173
Michigan	179,543	99,676	238,615	119,471
Minnesota	40,344	607	51,345	740
Wisconsin	203,001	64,339	225,207	76,293
Nebraska	6,995	.....	17,608	.....
Ohio	676,585	544,499	895,077	749,067
Total	2,825,465	1,811,694	4,438,469	2,837,632

There were 2,825,465 milch cows in the western States in 1860, against 1,811,694 in 1850; showing an increase of more than 1,000,000, or over 55 per cent. Minnesota has increased from 607 in 1850 to over 40,000 in 1860; Iowa, from less than 46,000 to nearly 190,000 in the same period.

Of "other cattle," there were 4,438,469 in the western States in 1860, against 2,837,632 in 1850—an increase of more than 1,600,000, or over 56 per cent. Iowa has increased from 69,000 to over 293,000, and Minnesota from only 740 to 51,000. Wisconsin from 76,000 to 225,000. Kansas, which was unreported in 1850, gives over 43,000 in 1860.

The following table shows the number of milch cows and "other cattle" in the southern States in 1860, as compared with 1850:

States.	Milch cows.		Other cattle.	
	1860.	1850.	1860.	1850.
Alabama	230,537	227,791	454,543	433,263
Arkansas	171,003	93,151	318,089	165,320
Georgia	299,688	334,233	631,707	690,019
Florida	92,974	72,876	287,725	182,415
Louisiana	129,662	105,576	326,787	414,798
Mississippi	207,646	214,232	416,660	436,254
North Carolina	228,623	221,799	416,676	434,402
South Carolina	163,938	195,244	320,209	563,935
Tennessee	249,514	250,456	413,060	414,051
Texas	601,540	217,811	2,761,736	661,018
Virginia	330,713	317,619	615,882	669,137
Total	2,705,838	2,248,788	6,963,074	5,064,612

There were 2,705,838 milch cows in the southern States in 1860, against 2,248,788 in 1850—an increase of over 457,000, or about 20 per cent. There has been a slight decrease in the number of milch cows in Georgia, Mississippi, South Carolina, and Tennessee. While Texas has increased from less than 218,000 in 1850 to over 600,000 in 1860; Arkansas has also increased from 93,000 to 171,000. There has been a slight increase in all the other southern States.

Of "other cattle," there were in the southern States 6,963,074 in 1860, against 5,064,612 in 1850; being an increase of nearly 2,000,000, or nearly 40 per cent, being double the percentage increase in milch cows.

The most remarkable increase is in Texas There were 2,761,736 in 1860, against 661,018 in 1850, or an increase of over 2,000,000. With the exception of Texas, and Florida, and Alabama, and Arkansas, there has been a decrease of this class of cattle in all the southern States. Next to Texas, Georgia has more cattle than any other southern State; Virginia coming next.

The following table shows the number of milch cows and "other cattle" in the Pacific States in 1860, as compared with 1850:

States.	Milch cows.		Other cattle.	
	1860.	1850.	1860.	1850.
California	205,407	4,280	948,731	253,599
Oregon	53,170	9,427	93,492	24,188
New Mexico	34,369	10,635	29,094	10,085
Utah	11,967	4,861	12,959	2,489
Washington Territory	9,660	.....	16,228	.....
Total	314,573	29,203	1,100,504	290,361