There were 314,573 milch cows in the Pacific States in 1860, against 29,203 in 1850, being an increase of over 97.5 per cent. The main increase is in California.

Of "other cattle" there were 1,100,504 in 1860, against 290,361 in 1850, or an increase of nearly 300 per cent.

The following table shows the number of milch cows and "other cattle" to every 100 persons in the different sections, and in the whole United States and Territories:

	Milch cows.		Other cattle.*	
	1860.	1850.	1860.	1850.
New England States	21	22	19	20
Middle States	24	25	19	23
Western States	27	28	45	43
Southern States	29	30	75	69
Pacific States	56	16	199	106
United States and Territories	27	27	47	44

It is somewhat remarkable that the number of milch cows, in proportion to population, should be precisely the same in 1860 as in 1850 in all the States and Territories. By reference to the table (page lxxxv,) showing the amount of butter and cheese produced, in proportion to population, it will be seen that there were 17.62 pounds of butter and cheese to each inhabitant in 1850, and 17.97 pounds in 1860.

In the New England States there were 21 cows to each 100 persons in 1860, against 22 in 1850.

In the middle States there were 24 milch cows to each 100 persons in 1860, against 25 in 1850.

In the western States there were 27 milch cows to each 100 persons in 1860, and 28 in 1850.

In the southern States there were 29 milch cows to every 100 persons in 1860, against 30 in 1850.

In the Pacific States there were 56 milch cows to each 100 persons in 1860, against 16 in 1850.

From the smallest number of cows in 1850, in proportion to population, the Pacific States have risen to the highest in 1860. There are now more than two cows to every family of five persons, and yet, as will be seen by the table showing the amount of butter in proportion to population, there is less than eight and three-quarter pounds of butter, and a little over three pounds of cheese produced to each person.

Of "other cattle" there were in the New England States 20 head to each 100 persons in 1850, and 19 head in 1860.

In the middle States there were 23 head in 1850, and 19 head in 1860.

In the western States there were 43 head in 1850, and 45 head in 1860.

In the southern States there were 69 head in 1850, and 75 head in 1860.

In the Pacific States there were 106 head in 1850, and 199 in 1860.

In the whole United States and Territories there were 44 head to every 100 persons in 1850, and 47 head in 1860.

It will be observed that there are far more cattle, in proportion to population, in the Pacific States, than in any other section. The southern States come next. The western States stand third; the number in which, however, is far less, in proportion to population, than in the southern States.

In the middle and New England States in 1860, the numbers are precisely the same—19 head in both cases.

There are more than twice as many cattle, in proportion to population, in the western States than in the middle and New England States; and in the southern States nearly four times as many.

In the New England and middle States the number of cattle, in proportion to population, has decreased since 1850, and, what is somewhat remarkable, more in the middle States than in the New England States.

* Meaning cattle not enumerated as "milch cows" or "working oxen."

Taking the western, New England, and middle States together, the increase in the number of cattle has not kept pace with the increase in the population; but it is more than probable that from the introduction of improved breeds, which mature earlier and fatten more readily, there has been no falling off in the supply of beef, in proportion to population, since 1850.

The following table shows the amount of butter and cheese obtained from each cow in the different sections in 1860, as compared with 1850, and in the whole United States and Territories:

	Butter.		Cheese.		Total butter and cheese.	
	1860.	1850.	1860.	1850.	1860.	1850.
New England States	75	72	32	44	107	116
Middle States	87	80	25	31	112	111
Western States	58	49	10	13	68	62
Southern States	22	19	$\frac{5}{16}$	$\frac{6}{16}$	22	19
Pacific States	15	10	5	$2\frac{1}{2}$	20	$12\frac{1}{2}$
United States and Territories	53	49	12	16	65	65

Taking the whole United States and Territories together, there were 53 pounds of butter obtained from each cow in 1860, against 49 pounds in 1850; and of cheese, 12 pounds in 1860, and 16 pounds in 1850. Of butter and cheese together, there were 65 pounds from each cow in 1860, and precisely the same amount in 1850.

When we consider that a good cow, properly fed, will produce 500 pounds of butter and cheese in a year, these figures do not appear favorable.

In the New England States 75 pounds of butter was obtained from each cow in 1860, and 72 in 1850; and of cheese, 32 pounds in 1860, against 44 pounds in 1850; showing an increase of three pounds of butter to each cow, and a decrease of twelve pounds of cheese. The total product of butter and cheese being 116 pounds in 1850, and only 107 pounds in 1860—a falling off of nine pounds per cow.

In the middle States there were 87 pounds of butter obtained from each cow in 1860, against 80 pounds in 1850.

Of cheese there were 25 pounds in 1860, and 31 in 1850.

In the middle States, as in the New England States, there is a falling off in the production of cheese per cow, but not quite as great as the increase in butter. The total amount of butter and cheese being 112 pounds in 1860, against 111 in 1850; being an increase of one pound per cow.

In the western States there were 58 pounds of butter obtained from each cow in 1860, against 49 in 1850; showing an increase of nine pounds per cow.

Of cheese there were 13 pounds per cow in 1850, and only 10 pounds in 1860; a decrease of three pounds per cow.

The total product of butter and cheese was 68 pounds per cow in 1860, against 62 pounds in 1850; an increase of six pounds per cow.

In the southern States there were 22 pounds of butter obtained from each cow in 1860, against 19 pounds in 1850.

Of cheese there were 6 ounces per cow in 1850, and only 5 ounces per cow in 1860.

In the Pacific States there were 15 pounds of butter obtained from each cow in 1860, against 10 pounds in 1850, and 5 pounds of cheese in 1860, against $2\frac{1}{2}$ in 1850. The total product per cow, of butter and cheese, being 20 pounds in 1860, against $12\frac{1}{2}$ in 1850.

THE CATTLE DISEASE.—*Pleuro Pneumonia.*

This disease, so fatal in Europe, appeared in this country in 1859. It was brought to Massachusetts by three cows imported from Holland. The disease soon spread, and many valuable herds

were decimated. Great alarm was felt, not only in the New England and middle States, but throughout the west. A special session of the legislature of Massachusetts was called, and $100,000 appropriated for the employment of measures calculated to arrest the spread of the disease. The most important of which was, in brief, as follows: Cattle which are infected, or have been exposed to infection, shall be enclosed in a suitable place and kept isolated; the expense of their maintenance to be defrayed, one-fifth by the town and four-fifths by the State. The cattle may be killed at the discretion of the constituted authorities, and their value paid to the owners. The same authorities may also prohibit the departure of cattle from any enclosure, and also exclude cattle therefrom. They can also prohibit the passage of cattle through the town or city, or of bringing them into it. All cattle that are diseased or have been exposed to the infection, to be marked on the rump with the letter P; and no animal so branded shall be sold or disposed of without the consent of the authorities. All who know, or have reason to suspect, of the existence of the disease among their cattle must give notice of the fact to the authorities.

In addition to the local authorities, three persons are appointed as commissioners, to examine into the nature of the disease, to attend the hospitals or quarantine stations, and to make a report of them to the governor and council. These measures were eminently successful; the disease was speedily arrested, and, from all we can learn from the official accounts, not more than 500 animals died from the disease. In addition to this, 657 animals that had been exposed to contagion were killed, but on post-mortem examination found to be sound; 185 animals were killed that proved to be diseased. One fact seems to be clearly established, that the disease is contagious, and the only sure preventive is to isolate the affected cattle.

The disease is not entirely new in this country. It broke out in the herd of E. P. Prentice, esq., of Mount Hope, near Albany, New York, in 1854. Sixteen animals were affected, fourteen of which died. The disease does not seem at that time to have spread in the neighborhood, and this case attracted no general attention until it broke out in Massachusetts in 1859.

SHEEP.

The total number of sheep in the United States in 1860 was 22,471,275, against 21,723,220 in 1850; showing an increase of only 748,055.

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

	1860.	1850.
Connecticut	117, 107	174, 181
Maine	452; 472	451, 577
Massachusetts	114, 829	188, 651
New Hampshire	310, 534	384, 756
Rhode Island	32, 624	44, 296
Vermont	752, 201	1, 004, 122
Total	1, 779, 767	2, 247, 583

The total number of sheep in the New England States was 2,247,583 in 1850, and 1,779,767 in 1860, showing a decrease of 467,816. In 1850 Vermont had 1,004,122 sheep, and in 1860 752,201, being a decrease of 251,921. Maine had 456,577 in 1850, and 452,472 in 1860, showing an increase of nearly one thousand. Maine is the only New England State in which there has been any increase since 1850. It may be interesting to mention that Vermont had 1,681,819 sheep in 1840, so that since that date the number of sheep in this State has fallen off more than one-half. In Maine also, though there has been a slight increase since 1850, there is a marked decrease since 1840, at which time there were 649,264 sheep, against 452,472 in 1860. In New Hampshire there has been an equally great falling off since 1840. In Connecticut the decrease is still greater. In the aggregate the number of

sheep in the New England States has fallen off from 3,442,081 in 1840, to 2,247,583 in 1850, and to 1,779,767 in 1860. In other words, the number of sheep in the New England States has fallen off nearly one-half since 1840.

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

	1860.	1850.
Delaware	18, 857	27, 503
Maryland	155, 765	177, 902
New York	2, 617, 855	3, 453, 241
New Jersey	135, 228	160, 488
Pennsylvania	1, 631, 540	1, 822, 357
District of Columbia	40	150
Total	4, 559, 285	5, 641, 641

The total number of sheep in the middle States in 1850 was 5,641,641, and 4,559,285 in 1860, showing a decrease of 1,082,356.

In 1840 there were 7,402,851 sheep in the middle States, showing a decrease from that time to 1860 of nearly three million. In New York in 1840 there were 5,118,777 sheep, in 1850 3,453,241, and 2,617,855 in 1860.

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

	1860	1850.
Illinois	769, 135	894, 043
Indiana	991, 175	1, 122, 493
Iowa	250, 041	149, 960
Kansas	17, 569	.....
Kentucky	938, 990	1, 102, 091
Michigan	1, 271, 743	746, 435
Minnesota	13, 044	80
Missouri	937, 445	762, 511
Ohio	3, 546, 767	3, 942, 929
Wisconsin	332, 954	124, 896
Nebraska	2, 355	.....
Total	9, 071, 218	8, 845, 438

In 1850 there were 8,845,438 sheep in the western States, and 9,071,218 in 1860, showing an increase of about 225,000. In 1840 there were in the western States 4,574,747 sheep, showing that while the increase has been slight since 1850, it has been very large since 1840, precisely the reverse of that which has taken place in the New England and middle States. In Illinois, Indiana, Kentucky, and Ohio, there has been a decrease in the number of sheep since 1850. The increase has been confined to the newer States.

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

	1860.	1850.
Alabama	370, 156	371, 880
Arkansas	202, 753	91, 256
Florida	30, 158	23, 311
Georgia	512, 618	560, 435
Mississippi	352, 632	304, 929
North Carolina	546, 749	595, 249
South Carolina	233, 509	285, 551
Tennessee	773, 317	811, 591
Texas	753, 363	100, 530
Louisiana	181, 253	110, 333
Virginia	1, 043, 269	1, 310, 004
Total	4, 999, 777	4, 565, 069

In 1850 there were 4,565,069 sheep in the southern States, and in 1860 4,999,777, showing an increase of 434,708. In 1840 there were in the southern States 3,512,767 sheep, showing an increase since that time of nearly 1,500,000.

In Georgia, North Carolina, South Carolina, Tennessee, and Virginia, there was a decrease in the number of sheep between 1850 and 1860. As a general rule it may be said that the number of sheep has declined in all the older States since 1850.

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

	1860.	1850.
California	1,088,002	17,574
Oregon	86,052	15,382
New Mexico	830,116	377,271
Utah	37,332	3,262
Washington	10,157	.....
Total	2,051,659	413,489

In 1850 the total number of sheep in the Pacific States was 413,489, and in 1860 2,051,659; showing an increase of 1,638,170. California alone has increased 1,000,000.

Taking the New England, middle, and western States together, the total number of sheep in 1850 was 16,734,662, and in 1860 15,410,270, showing a decrease in the aggregate number of sheep in these States of 1,324,392. The increase has been in the Pacific and southern States.

The following table shows the number of sheep to each 100 inhabitants in the different sections, and in the whole United States and Territories in 1860, as compared with 1850:

	1860.	1850.
New England States	56	82
Middle States	53	58
Western States	88	140
Southern States	54	62
Pacific States	371	231
United States and Territories	71	93

In 1850 there were 93 sheep to every 100 persons in the States and Territories, and 71 in 1860.
In the middle States there were 58 sheep to each 100 persons in 1850, and 53 in 1860.
In the New England States there were in 1850 82 sheep to each 100 persons, and 56 in 1860.
In the western States there were to each 100 inhabitants 140 sheep in 1850, and 88 sheep in 1860.
In the southern States there were to each 100 inhabitants 62 sheep in 1850, and 54 sheep in 1860.
In the Pacific States there were 231 sheep to each 100 persons in 1850, and 371 sheep in 1860.

AMOUNT OF WOOL PER SHEEP.

The following table will show the amount of wool from each sheep in the different sections, and in the whole United States and Territories, in 1850 and in 1860:

	1860.	1850.
New England States	3.62 lbs.	3.15 lbs.
Middle States	3.28 "	2.74 "
Western States	2.82 "	2.43 "
Southern States	1.95 "	1.82 "
Pacific States	1.68 "	0.18 "
United States and Territories	2.68 "	2.41 "

In 1850 the amount of wool in the United States and Territories was 2.41 pounds per sheep, and in 1860 2.68 pounds, showing an increase of 0.27 pounds per sheep, or a little over one-quarter of a pound per sheep.

In the New England States the amount per sheep in 1850 was 3.15 pounds, and in 1860 3.62, an increase of 0.57 pound, or over half a pound per sheep.

In the middle States the amount of wool per sheep in 1850 was 2.74 pounds, and in 1860 3.28, an increase of 0.74 pound, or nearly three-quarters of a pound per sheep.

In the western States the amount of wool per sheep in 1850 was 2.43 pounds, and in 1860 2.82 pounds, an increase of 0.39 pound, or about six ounces per sheep.

In the southern States the amount of wool per sheep in 1850 was 1.82 pound, and in 1860 1.95 pound, an increase of 0.13 pound, or about two ounces per sheep.

In the Pacific States the amount of wool per sheep in 1850 was only 0.18 pound, or less than *three* ounces. In 1860 the amount had increased to 1.68 pound, showing that vast improvements have taken place in sheep husbandry in the Pacific States. This has been brought about principally by the introduction of sheep from the Atlantic States and from Australia.

It will be observed that more wool is obtained per sheep in the New England States than in any other section; the middle States coming next, then the western, then the southern, and lastly the Pacific. The increase of wool per head has been greatest in the Pacific States, or over one pound and a half per head. The middle States show the next greatest increase, or about three-quarters of a pound per sheep. The western States come next, or about six ounces per sheep. The southern States show the smallest increase, or only two ounces per sheep.

It may be well to observe that the improvement which has taken place in the New England and middle States in the weight of wool has been obtained, it is believed, to a certain extent, at the expense of quality. It is claimed by the manufacturers that there is more oil or grease in the fleeces than formerly; and it is a fact that they pay more for Ohio and other western wool than for that of the middle and New England States. Vermont wool is usually quoted at five cents per pound less than Ohio wool.

SWINE.

There were in the States and Territories 30,354,213 swine in 1850, 33,512,867 in 1860, showing an increase of over 3,000,000.

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

	1860.	1850.
Connecticut	75,120	76,472
Massachusetts	73,948	81,119
Maine	54,783	54,598
New Hampshire	51,935	63,487
Rhode Island	17,478	19,509
Vermont	52,912	66,296
Total	326,176	361,481

There were in the New England States in 1850 361,481 swine, and in 1860 326,176, showing a decrease of 35,310 head.

There has been a decrease in all the New England States except Maine, where there is an increase of about two hundred.

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

	1860.	1850.
New York	910,178	1,018,252
New Jersey	236,089	250,370
Pennsylvania	1,031,266	1,040,366
Delaware	47,848	56,261
Maryland	387,756	352,911
District of Columbia	1,099	1,635
Total	2,614,236	2,719,795

There were 2,719,795 swine in the middle States in 1850, and 2,614,236 in 1860; a decrease of over 105,000 head. There is a slight increase in Maryland; all the other States have decreased. In New York alone there is a decrease of over 100,000 head. Pennsylvania has more swine than any other middle State.

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

	1860.	1850.
Illinois	2, 502, 308	1, 915, 907
Indiana	3, 099, 110	2, 263, 776
Iowa	934, 820	323, 247
Kansas	138, 224	.....
Kentucky	2, 330, 595	2, 891, 163
Missouri	2, 345, 425	1, 702, 625
Michigan	372, 386	205, 847
Minnesota	101, 371	734
Ohio	2, 251, 653	1, 964, 770
Wisconsin	334, 055	159, 276
Nebraska	25, 369	.....
Total	14, 435, 316	11, 427, 345

There were in the western States 11,427,345 swine in 1850, and in 1860 14,435,330, showing an increase of over three million.

There has been an increase in every western State except Kentucky, in which State there has been a falling off in the number of swine of over half a million.

Indiana has more swine than any other State in the west, or, in fact, of the United States, having 3,099,110, against 2,263,776 in 1850.

Illinois stands next, having 2,502,308 head in 1860, against 1,915,907 in 1850; an increase of over half a million.

Missouri stands next, having 2,345,425, against 1,702,625 in 1850; showing an increase of nearly forty per cent.

Kentucky had more swine in 1850 than any other western State, and more than any other in the United States except Tennessee. She has now, however, about 15,000 less than Missouri.

Iowa shows a remarkable increase in the number of swine, having 323,247 in 1850, and 934,820 in 1860; an increase of nearly 200 per cent.

Minnesota has increased from 734 in 1850, to 101,371 in 1860; an increase of 100,000.

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

	1860.	1850.
Alabama	1, 748, 321	1, 904, 540
Arkansas	1, 171, 630	836, 727
Florida	271, 742	209, 453
Georgia	2, 036, 116	2, 168, 617
Louisiana	634, 525	597, 301
Mississippi	1, 532, 768	1, 582, 734
North Carolina	1, 883, 214	1, 812, 813
South Carolina	965, 779	1, 065, 503
Tennessee	2, 347, 321	3, 104, 800
Texas	1, 371, 532	692, 022
Virginia	1, 599, 919	1, 829, 843
Total	15, 562, 867	15, 804, 353

There were in the southern States in 1850 15,804,353 swine, and in 1860 15,562,867, showing a decrease of nearly 250,000 head.

Tennessee, Georgia, North Carolina, Virginia, Mississippi, and Texas, are the largest hog-producing States in the south. Adding Kentucky and Missouri to the southern States, it will be seen that there are 20,238,887 head of swine, while in all the other States and Territories there are only 13,273,980.

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

	1860.	1850.
California	456,396	2,776
Oregon	81,615	30,235
New Mexico	10,313	7,314
Washington	6,383	.....
Utah	6,707	914
Total	561,414	41,239

There were 561,414 swine in the Pacific States in 1860, against 41,239 in 1850, showing an increase of over twelve hundred per cent.

California has increased from less than three thousand in 1850, to nearly a half million in 1860.

The following table shows the number of swine in the different sections, and in the United States and Territories, to each hundred inhabitants, in 1850 and in 1860:

	1860.	1850.
New England States	10	13
Middle States	31	41
Western States	149	181
Southern States	175	215
Pacific States	101	23
States and Territories	106	131

In the New England States there were thirteen head of swine to each hundred inhabitants in 1850, and only ten in 1860.

In the middle States there were, in 1850, forty-one to each hundred inhabitants, and thirty-one in 1860.

In the western States there were one hundred and eighty-one to each hundred inhabitants in 1850, and one hundred and forty-nine in 1860.

In the southern States there were two hundred and fifteen to each hundred inhabitants in 1850, and one hundred and seventy-five in 1860.

In the Pacific States there were, in 1850, twenty-three to each hundred inhabitants, and one hundred and one in 1860.

In all the sections, except the Pacific States, the increase in the number of swine has not kept pace with the increase in population.

It will be observed that there are more swine in the southern States, in proportion to population, than in any other section. There are in the south eight and three-quarters pigs to each family of five persons.

The western States have the next largest proportion of swine. There are nearly seven and one-half to each family of five persons.

The Pacific States have the next largest proportion, or a little over five to each family.

In the middle States there are only about three to ten persons, and in the New England States only one to ten persons.

In the western States there are nearly five times as many swine, in proportion to population, as in the middle States, and fifteen times as many as in the New England States.

In the United States there were one hundred and thirty-one swine to each hundred inhabitants in 1850, and one hundred and six in 1860.

This falling off in the number of swine, in proportion to population, may be accounted for by the increased facilities for the transportation of grain, and its consequent relative advance in price. Pigs can be multiplied so rapidly that, as soon as it is more profitable to feed grain to swine than to sell it,

the supply of pork will be quite equal to the demand. In the New England and middle States pork, up to the present winter, (1864--'65,) has rarely commanded a price at which marketable grain can be fed to swine with a profit. Under the best system of feeding, it requires seven bushels of Indian corn to make one hundred pounds of pork; and, as the freight from the west is much less on the hundred pounds of pork than it is on the seven bushels of corn, (say 420 pounds,) and as hitherto the Atlantic cities have been the principal market, it is more profitable for the western farmers to feed their grain to pigs than it is for the farmers of the middle and New England States. In other words, the farmers of these States are subjected to a more severe competition from the west in the production of pork than in the production of grain. During the present winter grain has been so high in the west that there has been less difference in favor of the western farmer in fattening pork, as compared with the eastern farmer, and the result has been a much higher price in the Atlantic States than ever before known. For the first time in many years it has been quite profitable to fatten pigs on marketable grain in the middle and New England States. The fact is an interesting one, as sustaining the views expressed in the former part of this article in regard to the difficulties under which the farmers of the Atlantic States labor in the production of beef, pork, wool, and other articles on which, in proportion to value, the freight is comparatively light, and, as a consequence, the difficulty of making manure and increasing the fertility of the soil.

VALUE OF LIVE STOCK.

Value of live stock in the United States in 1860.

STATES.	VALUE.	STATES.	VALUE.
Alabama	$43, 411, 711	Oregon	$5, 946, 255
Arkansas	22, 096, 977	Pennsylvania	69, 672, 726
California	35, 585, 017	Rhode Island	2, 042, 044
Connecticut	11, 311, 079	South Carolina	23, 934, 465
Delaware	3, 144, 706	Tennessee	60, 211, 425
Florida	5, 553, 356	Texas	42, 825, 447
Georgia	38, 372, 734	Vermont	16, 241, 989
Illinois	72, 501, 225	Virginia	47, 803, 049
Indiana	41, 855, 539	Wisconsin	17, 807, 375
Iowa	22, 476, 293		
Kansas	3, 332, 450	Total States	1, 080, 758, 386
Kentucky	61, 868, 237		
Louisiana	24, 546, 940	TERRITORIES.	
Maine	15, 437, 533		
Maryland	14, 667, 853	District of Columbia	109, 640
Massachusetts	12, 737, 744	Dakota	39, 116
Michigan	23, 714, 771	Nebraska	1, 128, 771
Minnesota	3, 642, 841	Nevada	177, 638
Mississippi	41, 891, 692	New Mexico	4, 499, 746
Missouri	53, 693, 673	Utah	1, 516, 707
New Hampshire	10, 924, 627	Washington	1, 099, 911
New Jersey	16, 134, 693		
New York	103, 856, 296	Total Territories	8, 571, 529
North Carolina	31, 130, 805		
Ohio	80, 384, 819	Aggregate	1, 089, 329, 915

The aggregate value of live stock in the States and Territories in 1850 was $545,180,516, and in 1860 $1,089,329,915, showing an increase of $545,149,399, or over one hundred per cent.

The following table shows the value of live stock in the New England States in 1860, as compared with 1850:

	1860.	1850.
Connecticut	$11,311,079	$7,467,490
Massachusetts	12,737,744	9,647,710
Maine	15,437,533	9,705,726
New Hampshire	10,924,627	8,871,901
Rhode Island	2,042,044	1,532,637
Vermont	16,241,989	12,643,228
Total	68,695,016	49,869,692

In round numbers the value of live stock in the New England States was $50,000,000 in 1850, and $68,000,000 in 1860, or an increase of $18,000,000, or 36 per cent.

Vermont stands first in the value of live stock, but not first in increase since 1850. Maine, which is second in the value of live stock, is first in the increase since 1850, having increased nearly $5,000,000, while Vermont has increased less than $4,000,000. Massachusetts has increased about $3,000,000, and Connecticut nearly $4,000,000, and New Hampshire $2,000,000.

The following table shows the value of live stock in the middle States in 1860, as compared with 1850:

	1860	1850.
New York	$103,856,296	$73,570,499
New Jersey	16,134,693	10,679,291
Pennsylvania	69,672,726	41,500,053
Maryland	14,667,853	7,097,634
Delaware	3,144,706	1,849,281
District of Columbia	109,640	71,643
Total	207,585,914	135,698,401

The value of live stock in the middle States in 1850 was $135,698,401, and in 1860 $207,585,914, an increase of about $72,000,000, or 52 per cent.

Nearly one-half the value of live stock in the middle States is in New York, being nearly $104,000,000 in 1860, against $73,500,000 in 1850, an increase of about 40 per cent.

In Pennsylvania the increase is still greater, or nearly 70 per cent.

In Maryland, however, the value of live stock has increased more rapidly than in any other middle State, or nearly 100 per cent.

The following table shows the value of live stock in the western States in 1860, as compared with 1850:

	1860.	1850.
Illinois	$72,501,225	$24,209,258
Indiana	41,855,539	22,478,555
Iowa	22,476,293	3,689,275
Kentucky	61,868,237	29,661,436
Kansas	3,332,450	.....
Michigan	23,714,771	8,008,734
Minnesota	3,642,841	92,859
Missouri	53,693,673	19,887,580
Ohio	80,384,819	44,121,741
Wisconsin	17,807,375	4,897,385
Nebraska	1,128,771	.....
Total	382,405,994	157,046,823

In the western States in 1850 the value of live stock was $157,046,823, and in 1860 $382,405,994—an increase of $225,359,171, or 143 per cent.

We have not space to allude to the value of live stock in the different States. The table speaks for itself, and is worthy of careful study. Ohio shows the greatest value of live stock in 1860, and also in 1850. Kentucky stood second in 1850, but is third in 1860. Illinois being about $11,000 000 in advance of her at the last census.

Kansas, which was unreported in 1850, had to the value of $3,332,450 in 1860.

The following table shows the value of live stock in the southern States in 1860, as compared with 1850:

	1860.	1850.
Alabama	$43, 411, 711	$21, 690, 112
Arkansas	22, 096, 977	6, 647, 969
Florida	5, 553, 356	2, 880, 058
Georgia	38, 372, 734	25, 728, 416
Louisiana	24, 546, 940	11, 152, 275
Mississippi	41, 891, 692	19, 403, 662
North Carolina	31, 130, 805	17, 717, 647
South Carolina	23, 934, 465	15, 060, 015
Tennessee	50, 211, 425	29, 978, 016
Texas	42, 825, 447	10, 412, 927
Virginia	47, 803, 049	33, 656, 659
Total	381, 778, 601	194, 327, 756

The value of live stock in the southern States in 1850 was $194,327,756, and in 1860 $381,778,601—an increase of $187,450,845, or 86 per cent.

The following table shows the value of live stock in the Pacific States in 1860, as compared with 1850:

	1860.	1850.
California	$35, 585, 017	$3, 351, 058
Oregon	5, 946, 255	1, 876, 189
New Mexico	4, 999, 746	1, 494, 629
Washington	1, 099, 911	.....
Utah	1, 516, 707	546, 968
Total	49, 147, 636	7, 268, 844

The value of live stock in the Pacific States in 1850 was $7,268,844, and in 1860 $49,147,636—an increase of $41,878,792, or 576 per cent.

It will be observed that the *increase* in the value of live stock since 1850 is:

New England States	36 per cent.
Middle States	52 "
Western States	143 "
Southern States	86 "
Pacific States	576 "
States and Territories	100 "

RECAPITULATION.

It may be interesting to place together in a table the amount of some of the leading products, in proportion to population, in 1860 and in 1850. Such a table will show at a glance the progress we have made since 1850. We have prepared the following table for this purpose:

Table showing the amount of the principal agricultural products in the different sections, and in the States and Territories, in proportion to population, in 1860 *as compared with* 1850.

SECTIONS.	AMOUNT OF PRODUCTS TO EACH INHABITANT.																					
	Wheat.		Indian corn.		Barley.		Rye.		Oats.		Buckwheat.		Peas and beans.		Irish potatoes.		Sweet potatoes.		Butter.		Cheese.	
	1860.	1850.	1860.	1850.	1860.	1850.	1860.	1850.	1860.	1850.	1860.	1850.	1860.	1850.	1860.	1850.	1860.	1850.	1860.	1850.	1860.	1850.
	Bush.	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
New England States	0.34	0.40	2.90	3.70	0.38	0.15	0.42	0.57	3.43	2.95	0.30	0.22	0.15	0.12	6.77	7.19	.....	.....	16.34	16.10	6.84	9.94
Middle States	3.75	5.75	9.04	9.11	0.54	0.56	1.47	1.57	8.65	8.20	1.40	0.96	0.21	0.12	5.28	3.88	.....	.....	21.50	16.08	6.15	7.94
Western States	9.75	7.25	45.27	44.14	0.43	0.11	0.49	0.19	6.51	7.55	0.41	0.25	0.10	0.13	3.55	2.66	.....	.....	16.13	14.33	2.97	3.92
Southern States	3.49	2.47	30.83	30.83	0.02	0.001	0.24	0.13	2.18	4.46	0.05	0.03	1.26	0.97	6.72	0.58	.....	.....	6.58	6.12	0.08	0.13
Pacific States	13.87	3.09	2.55	2.18	7.88	0.05	0.10	1.001	4.00	0.40	0.07	0.002	0.54	0.13	4.15	0.80	.....	.....	8.71	1.65	3.10	0.47
States and Territories	5.44	4.33	26.12	26.04	6.40	0.22	0.66	0.64	5.49	6.32	0.56	0.38	0.48	0.35	3.57	2.83	1.32	1.66	14.64	13.51	3.36	4.11

This table is worthy of careful study. It will be seen that in proportion to population, taking the States and Territories together, there has been a slight increase in our principal crops since 1850. Of wheat, Indian corn, barley, rye, oats, buckwheat, and peas and beans, we raised in 1850 38.28 bushels to an inhabitant, and in 1860 39.15 bushels. This shows an increase in the total amount of these crops of nearly *one bushel* to each inhabitant since 1850.

When it is remembered that our horses, cattle, sheep, swine, &c., have also increased, and that these animals have to be fed to a certain extent on the products named, a total increase of *one bushel* to an inhabitant is small indeed. With a country of great extent, abounding with the accumulated fertility of centuries, this exhibit of the products of our agriculture is not flattering.

In the New England States the total amount of the crops named was 8.11 bushels in 1850, and 7.92 bushels in 1860, showing a decrease of .18 of a bushel. In the middle States they amounted to 26.27 bushels in 1850, and 25.33 bushels in 1860, showing a decrease of nearly one bushel. In the western States the crops named amounted in 1850 to 59.62 bushels to each inhabitant, and in 1860 to 62 96, showing an increase of over three bushels to each inhabitant. In the southern States these crops amounted to 38.89 in 1850, and 38.07 in 1860, showing a decrease of nearly one bushel to each inhabitant. In the Pacific States these crops amounted in the aggregate to 5.47 bushels to each inhabitant in 1850, and to 29.01 in 1860, showing an increase of twenty-three and a half bushels to each person.

There is, therefore, a decrease in all the sections except the western and Pacific States; but the increase in these *more* than makes up for the decrease in the New England, middle, and southern States.

We think these figures will show the necessity of an improved system of agriculture. If in a period of profound peace and general prosperity our products but barely kept pace with the increase in population, it is certain that the *same* system of cultivation will not enable us to do so in a period of war. It is probable, however, nay, almost certain, that the high prices which farmers are now obtaining for their products will lead to a better system of agriculture.

CATTLE AND CATTLE TRADE OF THE WEST.

It was not long after the first settlement of the interior of Ohio before the earlier pioneers perceived the absolute necessity for a market for the product of the soil. They had cast their lot in the midst of an extensive new country, where the land was eminently fertile; and the question, how could the product of that soil be advantageously disposed of, received their early and earnest consideration. The early great immigration would furnish a market for the time being, but the rapidly increasing production would soon outstrip this consumption, and to attempt to transport the surplus grain in its primitive bulky state was out of the question. The great distance from market would require it to be condensed to its smallest possible compass. The article of wheat might be made into flour, and by the means of flatboats or barges floated out of the tributaries of the Ohio river, thence down that stream and the Mississippi to New Orleans. This was the only practical way open, and that only, to any great

extent, for the one product—flour; and notwithstanding the hazards and hardships to be encountered in that trade at an early day, the extreme scarcity of money, combined with the restless and daring character of the young men of that period, it was entered into with a will, and for a time the enterprise was generally remunerative, and oftentimes highly so. The trials and hardships of a flatboat voyage to New Orleans before the days of steamboats are but little appreciated by the present generation. To float a boat down to New Orleans was easy enough, provided they got safely out of the smaller streams; but the return-trip of nearly one thousand miles by land, the greater part of the way through an uninhabited and almost unbroken forest, was generally made on foot, and if the freshets in the smaller streams did not occur until middle or late spring, these trips were oftentimes attended with great mortality. Nevertheless, the trade flourished, and rapidly increased, until at length, some years after the close of the war of 1812, the supply so far outran the demand that the business became very precarious, oftentimes resulting in a loss to the shipper of almost the entire cargo. The consequence was the price of wheat was reduced so low as no longer to be regarded as the staple product of the western farmer, and indeed it finally ceased for a time to be a cash article; and it was no uncommon sight to see stacks of wheat rotting down in the field—twenty-five cents per bushel in store-goods or trade being the highest price obtainable by the farmer.

The large bodies of rich bottom-land lying on the borders of the tributary streams of the Ohio were not adapted to wheat-culture, and on the Scioto river much of the land was owned by immigrants from the south branch of the Potomac river, Virginia, where the feeding of cattle had been carried on for many years in a manner peculiar to that locality, and which materially differed from the mode practiced in Pennsylvania or further north. The cattle were not housed nor sheltered, but simply fed twice a day in open lots of eight or ten or more acres each, with unhusked corn with the fodder, and followed by hogs to clean up the neglected grains and ears; which practice was adopted here, and is still the almost universal method throughout the west, having undergone but little or no material change in fifty years. It may be worthy of remark here, that the method of securing the corn after maturity by cutting off the stalks near the ground, and stacking it in the field where it was grown in stacks of from twelve to sixteen hills square, also originated with the feeders of cattle of the south branch, the convenience and utility of which mode is made manifest by its general prevalence at the present day.

Although the business of fattening cattle was well understood by many of the earlier pioneers, and to find a market for corn was an anxious thought, yet they hesitated to engage in it. By many it was considered that the great distance from market would render that mode of disposing of their surplus corn impracticable; the long drive to an eastern market would so reduce the cattle in flesh as to render them unfit for beef; but some thought otherwise, and among the latter was George Renick, lately deceased, an enterprising and intelligent merchant, who, owning a considerable landed estate, concluded, himself, to try the experiment. Accordingly in the winter of 1804–'05, he fed a lot of cattle and sent them to Baltimore the following spring—(the first fat cattle that ever crossed the Alleghany mountains;) the result was a complete success. Thus was another avenue of trade practically opened, which for half a century contributed largely to the wealth of the Scioto valley; and from this small beginning the trade increased gradually, but not rapidly, until some years after the close of the war, when the failure of wheat to command cash gave a great impetus to the raising and feeding of cattle and hogs; for, although the selling price of such stock was very low, they were the only remaining cash articles of the farmer, and the cost of production was not very carefully considered. There was no alternative, as he was obliged to have some money wherewith to procure the necessaries of life, pay taxes, &c., and the business continued to increase rapidly until about the year 1850, notwithstanding the opening of the New York and Ohio canals in the mean time, had added greatly to the resources of the Ohio farmer by giving him access to a better and more reliable market, enabling him to sell for cash, not only his wheat, but every other product of the soil, at much more remunerating prices than formerly. The completion of the great through railroads added still further to the farmer's resources, enabling him to diversify his pursuits, and assisted in bringing the corn-feeding of cattle, so far as Ohio was concerned, to its culminating point. From his personal knowledge of the business, it is the con-

viction of the present Mr. Renick, that since then it has been on the decline. The whole number of cattle corn-fattened in Ohio may not have perceptibly decreased, but the home consumption, including the extensive barrelling, has greatly increased; but the excess or the number sent to an eastern market from that region has evidently, during the last decade, fallen off, and the cattle of late years are not so heavy nor made so fat as formerly. Mr. Renick gives it as his opinion that cattle can no longer be corn-fed in Ohio for the great length of time and in the profuse manner as formerly, with profit; indeed, in some of the largest feeding districts of twenty years ago the business has entirely ceased; and he very much questions whether the business can be profitably carried on as a leading one with the farmer in any locality possessing other ordinary modern resources, when the population of that locality exceeds fifty inhabitants to the square mile, exclusive of populous towns, and can then only be done profitably in a limited way, as a secondary or attendant on other pursuits of the farmer, and then in a different manner from that now generally pursued. The construction of the great through railroads, which tended to diminish the feeding of cattle in Ohio, contributed largely to its wonderful increase in Illinois and other western States, affording them facilities for reaching an eastern market of which they had hitherto been almost deprived—the distance the cattle had to travel *proving actually* too great, as the pioneers at first *supposed* it would, from Ohio; and though the railroads also facilitated the transportation of fat cattle from Ohio, adding but little to the cost, and saving to the drover near or quite one hundred pounds of flesh, on an average, to each animal, yet, by affording quicker and at all times a more certain conveyance for other things as well, particularly the article of whiskey, and the manufacturers of that article being able to pay more for corn than the cattle-feeders could possibly afford to do, they more than counterbalanced the advantages derived therefrom to stock-raising. Hence, in localities favorably situated for the sale of corn, the business of feeding it to cattle has become a comparatively unimportant one.

Before the era of railroads, to break the long drive, large numbers of stock or store-cattle were annually driven from Illinois and the west into Ohio to be fed there, and when made fat were sent to an eastern market; but that trade has now become almost obsolete. Formerly, too, the driving of stock-cattle from Ohio to Pennsylvania and the east was conducted on an extensive scale, and indeed that trade, during the State's gloomiest pecuniary period, ranked as one among her chief resources, always commanding money in hand, however low the price might be; but that trade has also ceased, except to a comparatively limited extent from the northern part of the State into that of New York.

To avoid misapprehension, let us here say, that our remarks thus far with reference to beef-cattle in Ohio apply only to those made fat, or mostly so, on corn, as doubtless the number of *grass-fattened*, or those that have been but slightly fed on corn, has somewhat increased. Indeed, the whole business of fattening cattle has undergone a great change since the era of railroads. Formerly the great bulk of the corn-fed cattle of the west, nine-tenths of which were from Ohio and Kentucky, chiefly from Ohio, sent to the eastern markets, arrived there between the middle of April and 1st of August, and the markets of New York in particular were chiefly supplied from those sources during that time, and grass-fattened cattle were sent in the fall from Ohio in limited numbers, and no cattle arrived in those markets from the west during the winter or first month of spring; but now they are sent at all seasons of the year, and but few of those are so heavily corn-fed or made so fat as formerly. In a word, there is not near so much consumed in fattening cattle in Ohio now as there was twelve or fifteen years ago; yet there are, doubtless, more cattle partially fed now than then, but grass is more relied upon to prepare the cattle for market. Nor is there the same *occasion* to make them so solidly fat as formerly, for the conveyance to market by railroad is a great saving of flesh over the former method of driving.

It is not to be understood that cattle are better or longer grazed than formerly, for the contrary is the fact; but formerly, when the business of feeding cattle on the Scioto river was at its height, say from 1840 to 1850, to make an A No. 1 lot of fat cattle, the best grades were fed some ten to twenty bushels of corn in March and April when they were three years old, and other cattle at the age of four years; they were then grazed throughout the whole summer and fall in the best manner, then fed from four to five and a half months all the corn they would eat—say full half bushel per day each before

starting to market; cattle that had no corn the previous spring were well grazed and fed from five to six months. Now, cattle handled as the former would begin to go to market by the 1st of July, and all or nearly all would be in market before the 1st day of January. Quite a common way of prosecuting the business now is to commence feeding the cattle in January or February, *when less than three years old*, on corn in limited quantities, substituting more fodder or other rough feed, but increasing the quantity of corn in March or April, often to full feeding, say from twenty-five to forty bushels in the aggregate, per head, and these cattle will commence to be sent to market by the 1st of June, and by the 1st of October by far the greater portion will have gone; comparatively few of them, perhaps, having been detained to be fed on corn for a month or two before starting them. Of course the quality of the beef of cattle so young, and handled after this fashion, can bear no comparison with that as made by the former method.

The first introduction into the west of English cattle was made by Matthew Patton, (hence the name given to that celebrated stock,) who removed from Hardy county, Virginia, to Kentucky, about the year 1794, and brought the cattle with him. Patton had obtained the ancestors of this stock of Mr. Goff, of Maryland, in 1783, who had then recently imported them from England. John Patton, a son of Matthew, removed in 1800 from Kentucky to Chillicothe, Ohio, bringing a part of the same stock with him. Between that time and 1817, occasionally a few other animals were introduced, mostly of the same breed, but including some of an importation made by a Mr. Miller, of Maryland, between 1790 and 1795. These cattle, both Goff and Miller importations, were of very large size, and the cows generally good milkers, and when first introduced were a fine quality of beef-cattle—bone not large for the size of the animal—but on account of their great growth were longer maturing than the common stock of the country; but in the course of time their defects grew upon them. They became larger, coarser, and longer maturing, and of course harder to fatten. This change was attributed to the rich feed, which was probably the fact. We know that poor feed will degenerate, and it was probably this latter fact that led Count Buffon, the great European naturalist, to assert that all animals when translated from Europe to America would degenerate. The finest animal of the cow kind I have ever seen was of this breed; in the fall of 1819 this was six and one-half years old, and was estimated to weigh over 2,000 pounds, net beef. His head, neck, and limbs were remarkably neat, his brisket very deep and broad, and he girted immediately behind the shoulders the extraordinary measure of ten feet ten inches, and his back and loin I certainly never have seen excelled, if equalled. I have been thus minute in this description, because I have seen several treatises, or rather communications on the comparative excellence of the different breeds of cattle imported into this country, and all of them disparaging in a greater or less degree this breed of cattle. This breed proved an admirable one for crossing with the *common* stock of the country better, perhaps, than any following importation. In 1817 Messrs. Saunders, Zugarden, and ———, of Kentucky, imported from England five bulls—three short horns, and two long horns—and eight or nine cows of the two breeds. The long horns being the most sightly animals, took the fancy of the people at first, and some of those having good stock of former importations wellnigh ruined them for the shambles by introducing the long horns among them. Their flesh was very dark and tough, without any admixture of fat, as a butcher's animal should have, and withal the cows were poor milkers. The short horns proved a valuable acquisition to the existing stock of the country, though the quality of their beef was perhaps no better than the Patton or Miller stock, nor were the cows better milkers, but their early maturity, and aptitude to fatten were qualities peculiarly desirable at the time, had they been properly appreciated and improved upon by the breeders generally. But unfortunately, in Kentucky in particular, the long horns got a pretty general dissemination before they were entirely discarded, and a practice of somewhat indiscriminate breeding followed, producing about as undesirable a stock for the shambles as could well be imagined. They were very large, but very unsaleable, and nick-named by the butchers of the eastern cities, "red horses." There never was enough of the short horned breed clear of admixture in the eastern markets for their shamble qualities to be clearly established by the butchers there, though in the west it was known to be at least not inferior to any breed then existing.

But it was not until about 1832 to 1836 that a general interest for the improvement of the stock of cattle began to be manifested by the farmers and cattle men at large. Hitherto it had been confined chiefly to a few individuals in different localities in Kentucky, Ohio, and other western States, though more general in the former. But the beautiful display at the county fairs (then recently revived) and elsewhere of the many beautiful animals of the English improved Durhams, imported by the different associations into Kentucky and Ohio about that period, combined with the almost fabulous prices which they would command, contributed in no small degree towards creating the general interest on the subject that followed, and which resulted within a few years thereafter in a great improvement in the quality of the stock throughout the whole west, greater, perhaps, than would have otherwise taken place within a quarter of a century. Nor were the people misled by appearances this time; for, after thirty years' trial, this breed, when well cared for, still maintains its English reputation of possessing, in a greater degree than any other stock, all the essential qualities, such as size, neatness of form, early maturity, aptitude to fatten, and the marbled admixture of fat with the lean in the beef requisite to make both the raising and feeding more profitable, as well as furnishing to the consumer a superior quality of beef. But the present management of these cattle, and their crosses, called "grades," is nowise calculated to sustain the hitherto high character of their beef among consumers. Apparently both feeders and drovers, not willing to be behindhand with the railroads, nor any other fast thing in this fast age, make haste to realize and hurry off their *half-fatted* stock to market at the early age of three years, thereby involving an absolute waste of "raw material;" whereas, if those same cattle were kept one year longer, and made ripe for the shambles, there would not only be a gain of full one-third in weight, but they would produce a quality of beef not excelled in any country or clime.

The wonderful increase of late years both in the production and consumption of beef cattle in the United States, the one obviously keeping pace with the rapid strides of the other, has developed in part the capabilities of the vast western prairies, providentially provided beforehand to meet the wants of a great nation increasing in population and advancing in wealth and power with a rapidity wholly unprecedented in history.

The original or common cattle of the west were introduced into the country from various quarters, the earlier immigrants from Pennsylvania, Virginia, and other States bringing a greater or less number of cows with them, and the Indians furnished a part. Of course they were a heterogeneous collection; yet, in the process of time, in each considerable district of country of similar formation and resources; where there was no effort made at improvement, the stock assimilated or acquired characteristic qualities peculiar to itself, and so dissimilar from other sections as to enable the experienced cattle dealer to readily determine, by the general appearance of the stock, the region of country in which the cattle were raised. In the more hilly and timbered localities the cattle were smaller, of compact build, hardy, healthy, and easily fatted; whereas, in the more open portions of the country, where the feed was abundant, the stock became larger, looser made, coarser, more subject to disease, and harder to fatten; but the general effort made of late years to improve the stock by the introduction of improved breeds has rendered these local characteristics less distinguishable than formerly.

The manner of raising or breeding of cattle has undergone considerable change of late years. Formerly, when the price of land was very low, and the range extensive, it was the general custom of farmers and cattle men to keep more cows than were actually necessary to supply the wants of the family; indeed, many of them kept large herds of cows for the sole purpose of raising cattle. But that business has now, at least so far as Ohio and Kentucky are concerned, almost entirely ceased, though it is still carried on to a limited extent further west and south, more particularly in Texas, where, before the war, many individuals could count their herds by the thousand. Yet, even in Ohio and Kentucky, the number of cows has not decreased, but, on the contrary, doubtless has largely increased, more especially in Ohio, where, in addition to the largely increased home consumption, the extensive cheese manufactories and large export of butter of late years have rendered a largely increased number of cows necessary. The calves of these cows are, to a considerable extent, bought up by dealers in the fall.

But it was not until about 1832 to 1836 that a general interest for the improvement of the stock of cattle began to be manifested by the farmers and cattle men at large. Hitherto it had been confined chiefly to a few individuals in different localities in Kentucky, Ohio, and other western States, though more general in the former. But the beautiful display at the county fairs (then recently revived) and elsewhere of the many beautiful animals of the English improved Durhams, imported by the different associations into Kentucky and Ohio about that period, combined with the almost fabulous prices which they would command, contributed in no small degree towards creating the general interest on the subject that followed, and which resulted within a few years thereafter in a great improvement in the quality of the stock throughout the whole west, greater, perhaps, than would have otherwise taken place within a quarter of a century. Nor were the people misled by appearances this time; for, after thirty years' trial, this breed, when well cared for, still maintains its English reputation of possessing, in a greater degree than any other stock, all the essential qualities, such as size, neatness of form, early maturity, aptitude to fatten, and the marbled admixture of fat with the lean in the beef requisite to make both the raising and feeding more profitable, as well as furnishing to the consumer a superior quality of beef. But the present management of these cattle, and their crosses, called "grades," is nowise calculated to sustain the hitherto high character of their beef among consumers. Apparently both feeders and drovers, not willing to be behindhand with the railroads, nor any other fast thing in this fast age, make haste to realize and hurry off their *half-fatted* stock to market at the early age of three years, thereby involving an absolute waste of "raw material;" whereas, if those same cattle were kept one year longer, and made ripe for the shambles, there would not only be a gain of full one-third in weight, but they would produce a quality of beef not excelled in any country or clime.

The wonderful increase of late years both in the production and consumption of beef cattle in the United States, the one obviously keeping pace with the rapid strides of the other, has developed in part the capabilities of the vast western prairies, providentially provided beforehand to meet the wants of a great nation increasing in population and advancing in wealth and power with a rapidity wholly unprecedented in history.

The original or common cattle of the west were introduced into the country from various quarters, the earlier immigrants from Pennsylvania, Virginia, and other States bringing a greater or less number of cows with them, and the Indians furnished a part. Of course they were a heterogeneous collection; yet, in the process of time, in each considerable district of country of similar formation and resources; where there was no effort made at improvement, the stock assimilated or acquired characteristic qualities peculiar to itself, and so dissimilar from other sections as to enable the experienced cattle dealer to readily determine, by the general appearance of the stock, the region of country in which the cattle were raised. In the more hilly and timbered localities the cattle were smaller, of compact build, hardy, healthy, and easily fatted; whereas, in the more open portions of the country, where the feed was abundant, the stock became larger, looser made, coarser, more subject to disease, and harder to fatten; but the general effort made of late years to improve the stock by the introduction of improved breeds has rendered these local characteristics less distinguishable than formerly.

The manner of raising or breeding of cattle has undergone considerable change of late years. Formerly, when the price of land was very low, and the range extensive, it was the general custom of farmers and cattle men to keep more cows than were actually necessary to supply the wants of the family; indeed, many of them kept large herds of cows for the sole purpose of raising cattle. But that business has now, at least so far as Ohio and Kentucky are concerned, almost entirely ceased, though it is still carried on to a limited extent further west and south, more particularly in Texas, where, before the war, many individuals could count their herds by the thousand. Yet, even in Ohio and Kentucky, the number of cows has not decreased, but, on the contrary, doubtless has largely increased, more especially in Ohio, where, in addition to the largely increased home consumption, the extensive cheese manufactories and large export of butter of late years have rendered a largely increased number of cows necessary. The calves of these cows are, to a considerable extent, bought up by dealers in the fall,

starting to market; cattle that had no corn the previous spring were well grazed and fed from five to six months. Now, cattle handled as the former would begin to go to market by the 1st of July, and all or nearly all would be in market before the 1st day of January. Quite a common way of prosecuting the business now is to commence feeding the cattle in January or February, *when less than three years old*, on corn in limited quantities, substituting more fodder or other rough feed, but increasing the quantity of corn in March or April, often to full feeding, say from twenty-five to forty bushels in the aggregate, per head, and these cattle will commence to be sent to market by the 1st of June, and by the 1st of October by far the greater portion will have gone; comparatively few of them, perhaps, having been detained to be fed on corn for a month or two before starting them. Of course the quality of the beef of cattle so young, and handled after this fashion, can bear no comparison with that as made by the former method.

The first introduction into the west of English cattle was made by Matthew Patton, (hence the name given to that celebrated stock,) who removed from Hardy county, Virginia, to Kentucky, about the year 1794, and brought the cattle with him. Patton had obtained the ancestors of this stock of Mr. Goff, of Maryland, in 1783, who had then recently imported them from England. John Patton, a son of Matthew, removed in 1800 from Kentucky to Chillicothe, Ohio, bringing a part of the same stock with him. Between that time and 1817, occasionally a few other animals were introduced, mostly of the same breed, but including some of an importation made by a Mr. Miller, of Maryland, between 1790 and 1795. These cattle, both Goff and Miller importations, were of very large size, and the cows generally good milkers, and when first introduced were a fine quality of beef-cattle—bone not large for the size of the animal—but on account of their great growth were longer maturing than the common stock of the country; but in the course of time their defects grew upon them. They became larger, coarser, and longer maturing, and of course harder to fatten. This change was attributed to the rich feed, which was probably the fact. We know that poor feed will degenerate, and it was probably this latter fact that led Count Buffon, the great European naturalist, to assert that all animals when translated from Europe to America would degenerate. The finest animal of the cow kind I have ever seen was of this breed; in the fall of 1819 this was six and one-half years old, and was estimated to weigh over 2,000 pounds, net beef. His head, neck, and limbs were remarkably neat, his brisket very deep and broad, and he girted immediately behind the shoulders the extraordinary measure of ten feet ten inches, and his back and loin I certainly never have seen excelled, if equalled. I have been thus minute in this description, because I have seen several treatises, or rather communications on the comparative excellence of the different breeds of cattle imported into this country, and all of them disparaging in a greater or less degree this breed of cattle. This breed proved an admirable one for crossing with the *common* stock of the country better, perhaps, than any following importation. In 1817 Messrs. Saunders, Zugarden, and ———, of Kentucky, imported from England five bulls—three short horns, and two long horns—and eight or nine cows of the two breeds. The long horns being the most sightly animals, took the fancy of the people at first, and some of those having good stock of former importations wellnigh ruined them for the shambles by introducing the long horns among them. Their flesh was very dark and tough, without any admixture of fat, as a butcher's animal should have, and withal the cows were poor milkers. The short horns proved a valuable acquisition to the existing stock of the country, though the quality of their beef was perhaps no better than the Patton or Miller stock, nor were the cows better milkers, but their early maturity, and aptitude to fatten were qualities peculiarly desirable at the time, had they been properly appreciated and improved upon by the breeders generally. But unfortunately, in Kentucky in particular, the long horns got a pretty general dissemination before they were entirely discarded, and a practice of somewhat indiscriminate breeding followed, producing about as undesirable a stock for the shambles as could well be imagined. They were very large, but very unsaleable, and nick-named by the butchers of the eastern cities, "red horses." There never was enough of the short horned breed clear of admixture in the eastern markets for their shamble qualities to be clearly established by the butchers there, though in the west it was known to be at least not inferior to any breed then existing.

who, perhaps, keep them a year, and then they pass into other hands, who, in turn, keep them another year, when the stock in large numbers passes into the hands of the feeders. This cannot be said to be the universal custom, but its practice is sufficiently prevalent to be designated as general. A very limited proportion of this stock is housed or sheltered during the winter, at least south of forty-one degrees of north latitude, unless it be the calves the first winter to some extent; nor is it the custom to house any cattle even while preparing for market. They are generally fed in open lots, though positions sheltered from wind and storms by timber or other natural obstructions are taken advantage of.

In communicating his experience with Texas cattle, Mr. Renick writes as follows:

"In the winter of 1853–'54 I had purchased for use about 1,200 head of cattle in the northern part of Texas, which section of country had been to a considerable extent settled by immigrants from Illinois and Missouri, and who had brought their stock with them; and this stock had not yet been sufficiently intermixed with the Spanish or Opelousas cattle further south to materially deteriorate their original qualities; consequently they were a much better and larger stock than I expected to see, though they had in some measure acquired the wild nature of the more southern stock. These cattle were brought to Illinois in the spring and summer of 1854—the first, I believe, that ever came from Texas, at least in large numbers. This enterprise created quite an excitement in the northern part of Texas, and all my correspondents there manifested a strong desire to have this new trade continued and extended, freely offering their best efforts to encourage it, as they believed it would result advantageously to all concerned, and promising, if successful, to send north for a better breed of cattle, as they said, and with truth, that they could raise cattle and deliver them in Illinois, with satisfactory profits to themselves, for less, by one-half, than they could be raised in that State. In anticipation of this trade being continued the following season, quite a large number of cattle were brought up from points further south, and, as was expected, the trade opened lively; but an unforeseen difficulty exploded the whole business within the next two years. It was found that the southern or Spanish cattle were subject to an epidemic or contagious disease somewhat resembling the yellow fever in the human race, and so contagious did it prove that all along the track those cattle were driven the farmers lost large numbers of their cattle from that disease, many losing almost their entire stock within a few days. So serious was the loss occasioned by each drove of Texas cattle passing through, that the inhabitants of southwestern Missouri held conventions in divers places, and resolved that no more Texas cattle should pass through the country, and, by order of these conventions, armed bands or patrols were appointed, whose duty it was to turn back all Texas droves that might attempt to pass, which they did effectually. Thus ended what at one time seemed a promising trade. From the short trial, however, it became evident that, from the inferiority of the Texas stock as beef cattle, the trade would not have resulted as satisfactorily as was anticipated; the cattle were very light weighers for their size of frame, with but little room for improvement, and so wild as to be almost unmanageable. For oxen for the Santa Fe trade, or long drives over flinty roads, their hardness of hoof, their agility and endurance render them unrivalled; and, though they never lose entirely their wild nature, yet, when judiciously trained, they become quite tractable."

THE PORK TRADE.

The first general violations of the levitical law prohibiting the use of swine flesh must have occurred in comparatively modern times, inasmuch as that article has only recently become sufficiently well esteemed to be introduced largely into commerce. Since, however, it has been discovered to be one of the most easily produced, and about the most easily preserved of all meats, but few articles of food have come into more general use among civilized nations.

The raising of the hog has proved to be so well adapted to the varied systems or phases of agriculture in the United States, that in nearly all parts of the country it is carried on, and the animal made to serve as a popular and cheap article of food. The preparation of the meat, however, for commerce on a large scale, is confined mainly to those districts where Indian corn is most profitably raised, and where the winters admit of the process of cure with least expense and greatest certainty. This trade can only flourish where the extremes of heat or cold do not prevail, and is comprised principally

within the region of country between the 35th and 45th degrees of latitude, and within the Mississippi valley. Farmers within this region have found the hog to be the best animal into which to condense for market a portion of the products of their farms; the quickest to come to maturity, besides requiring the least skill and labor to handle, hence best adapted particularly to the use of the pioneer, and is that most universally relied upon for domestic consumption and profit.

In quest of articles of cheap food, Europeans, gradually at first, more rapidly of late, have formed an appreciation of provisions of American cure. With increasing demand, necessarily came enlarged competition, both amongst producers and packers, resulting in marked improvements in breeds of hogs, in their preparation for market, and in the reduction of the business of packing to a nearly perfect system, as well as to fixed scientific principles. Within twenty years, especially within the last decade, the whole packing trade has undergone improvements as marked as has been its growth. The relations of supply and demand, though very irregular in a country so large and of such wonderful resources, have come to be more nearly comprehended and adjusted, so that much less risk is now incurred by the packer than in former years. Scarcely a particle of the animal is now wasted in the process of transformation into articles of food or commercial use, and the collateral trade in bristles, lard-oil, stearine, grease, skins, &c., has grown to be scarcely less important than the original one in food was twenty years ago.

The number of hogs which are used in the regular commercial packing business of the country can only, under the present system of statistics, be approximated. For the western States, through the efforts of private enterprise inaugurated in Cincinnati, it has become a matter of quite close calculation; but for the eastern States there are no reliable data on which to base a close computation. Of marketable hogs, such as would average 200 pounds net, it may be fair to estimate that the number packed in the entire country in 1859–'60, and entering into the commerce of the country, was 3,000,000 head, at an aggregate prime cost of $35,000,000. The cost of packing, transportation, &c., would add to this a value of near $15,000,000, making a total of about $50,000,000 capital employed. So many circumstances transpire to cause a variation in one season as compared with another, in the prime cost of the hog and in the expense of packing, that fair averages are difficult to arrive at, and those who engage in the business find that the most extensive experience furnishes but few data for reliable precedents. In great part the business has to be prosecuted each season in the lights of intuition rather than of positive information as to what may be the best policy to pursue. These intuitions, however, have given those engaged in the trade as much stability of position, perhaps, as merchants engaged in any other line of commerce, and causes the very large capital invested in the business to fluctuate now comparatively little.

The greatly increased use of lard for manufacturing oil, has made for it a relatively higher price than for other parts of the hog, in which the discovery of petroleum and its rapid adoption as a luminating and lubricating material seems to have produced no essential change. This fact can only be accounted for by the well-sustained demand for candles made from stearine, enabling manufacturers to keep lard-oil in constant competition with all similar articles, and to find their profit in the stearine. The future of the trade promises a growth rapid as the past. An increasing manufacturing population and constant large augmentation of laboring force from foreign emigration, the yearly increasing acceptability of American packed provisions as articles of cheap food in foreign countries, all unite in assuring a consumption that will grow in equal pace with the production, and maintain for the pork trade its prominent position among the great commercial interests of the country.

THE GRAIN TRADE OF THE UNITED STATES.

The grain trade of the United States, viewed in all its features, is one of the chief marvels of modern commercial history. To trace its rise and progress would be almost to complete a record of the development of this entire continent, for it has been the leading agency in the opening up of seven-eighths of our settled territory. First, in the march of civilization, came the pioneer husbandman, and following close on his footsteps was the merchant; and after him were created in rapid succession our ocean and lake fleets, our canals, our wonderful network of railroads, and, in fact, our whole commercial system.

The grain merchant has been in all countries, but more particularly in this, the pioneer of commerce, whether we refer to the ocean or the inland trade, and not till he was established could other commercial adventurers find a foothold. The commercial history of the United States is based mainly on breadstuffs—staples always marketable at some quotation wherever the human family dwells.

The exportation of American products to foreign countries continues to form one of the chief characteristics of our national commerce. The development of our agricultural resources, and the increasing demands of Europe, particularly England, for foreign breadstuffs, seem to have continued at pretty regular pace. As the production of the United States increased, new and more extensive markets were thrown open—illustrating a grand design of Providence in thus developing a New World to feed the rapidly increasing populations of the Old, and supply homes for their redundant numbers. For upwards of a quarter of a century the extension of the manufacturing interests of Great Britain has been gradually but surely rendering that country more and more dependent upon other nations for the breadstuffs with which to feed her people; and from a grain-exporting country, as she was only half a century since, she now finds herself in a position in which she has to import annually from nine to fifteen millions of quarters of grain. Had that country twenty-five years ago been as dependent as she is now upon other nations, with the grain resources of that period, there would have been much suffering among the poorer classes everywhere; while on the other hand, without this European demand for the grain produced in the United States, the same inducements for opening up the fertile lands of the western States would not have existed. Capitalists would not have been encouraged to construct our immense canals, and lines of railroads, nor to have built our fleets of grain-carrying vessels to traverse the lakes and seas. The steady and increasing demand for American breadstuffs in Europe, however, greatly stimulated the production—made the unbroken and wild, yet fertile wilderness and prairie attractive to the agriculturists of all countries, and created a commerce for which history has few parallels. At the same time it has enriched our country beyond all calculation, enabled us to pay our European debts, given us an enterprising population, drawn from the industrious classes of every nationality, state, or kingdom in the Old World, and has endowed millions of human beings with wealth and the rights and privileges of free institutions.

Commencing at an early period with the scant products of the Atlantic States, the grain trade was gradually pushed up the Hudson river as far as navigation would permit; and where that ceased, the Erie canal commenced and carried it to the great lakes. It was on the completion of this great achievement that the real history of the grain trade of the United States began. Then it was that our "inland seas" became the highway of a commerce which has already attained a magnitude surpassing that of many of the oldest European nations. Then it was that the vast territory west of the lakes, hitherto the home of the "red man," and range for the buffalo, became the attractive field for the enterprising pioneers of industry and civilization, who laid the foundations of what are now seven large and flourishing States of the Union, peopled by a population vigorous and hardy, and well calculated to succeed either in the arts of peace or war.

At the same time, the grain trade was steadily progressing up the Mississippi river into the heart of the west, and on whose banks were built large and flourishing cities, the great depots for nearly a quarter of a century for the products of the rich valley of that river.

The grain trade has progressed, year after year, from small beginnings, till now it has become one of the leading interests of the country, and among the most important in its influence on the world, as on it depends much of the peace, happiness, and prosperity, not only of the people of the United States, but also of many of the kingdoms of Europe.

THE EXPORT GRAIN TRADE.

To demonstrate the magnitude of this trade, the following tables are appended, showing the total exports of grain and flour from the United States to foreign countries during the years 1862 and 1863:

TABLE A.

Exports of grain and flour from the United States to foreign countries for the year ending June 30, 1862.

WHITHER EXPORTED.	INDIAN CORN.		INDIAN MEAL.		RYE MEAL.		WHEAT.		WHEAT FLOUR.		RYE, OATS, &c.
	Bushels.	Dollars.	Barrels.	Dollars.	Barrels.	Dollars.	Bushels.	Dollars.	Barrels.	Dollars.	Dollars.
Asiatic Russia									300	2,325	300
Russian Possessions in North America							2,548	2,191	1,224	5,842	105
Sweden and Norway									504	2,430	9,430
Swedish West Indies	3,218	2,246	1,190	3,604	234	770			3,912	21,986	863
Danish West Indies	4,211	3,164	22,393	72,116	1,632	4,202			39,689	228,544	11,559
Hamburg	33,106	25,450	4	20			305	349	4,614	23,909	144,356
Bremen	10,663	8,247			1,279	5,100	42,651	43,177	24,150	132,816	174,955
Other German Ports							3,661	4,362			7,500
Holland	22,970	11,937	10	40	50	212	61,119	78,481	24,457	129,784	368,901
Dutch West Indies	12,910	9,591	3,047	9,640	1,284	5,146			20,543	122,002	6,596
Dutch Guiana	6,758	4,393	310	1,050					7,908	51,206	79
Dutch East Indies									5,702	36,512	497
Belgium	62,986	35,360			231	968	1,036,735	1,307,172	68,303	360,079	604,845
England	8,290,142	4,777,926	1,281	3,972	126	530	16,868,248	19,203,403	1,966,151	11,033,152	173,380
Scotland	258,861	161,823	206	630			1,045,283	1,274,037	175,383	987,159	40,378
Ireland	5,924,793	3,643,753	187	558	1	4	4,991,974	6,082,349	97,912	531,817	4,395
Gibraltar							6,029	8,260	29,341	162,668	
Malta									120	719	
Canada	3,218,438	1,010,243	3,964	10,974	240	960	4,538,472	3,801,515	118,643	536,756	56,405
Other British N. American Possessions	113,077	65,358	75,198	226,305	7,637	27,877	13,748	16,582	605,826	3,199,208	96,804
British West Indies	176,123	128,020	106,706	326,074	660	2,449	15,823	22,209	284,956	1,601,185	64,613
British Honduras			18	54					19,748	118,389	1,541
British Guiana	36,005	26,011	10,607	31,989					66,699	351,341	11,394
British Possessions in South America			5	16					120	703	
British Possessions in Africa			20	70			1,010	924	27,441	163,388	3,256
British Australia			190	703	20	75	444,048	457,666	27,175	135,657	238,803
British East Indies	25	33							3,198	21,297	5,195
France on the Atlantic	268,476	146,882	3	10			7,653,367	9,546,870	512,838	2,826,150	22,101
France on the Mediterranean	9,260	6,700					158,198	209,081	13,072	77,291	9,897
French North American Possessions	226	160	48	155					15,347	82,659	362
French West Indies	24,168	16,301	1,302	4,082	5	20	1,100	1,705	28,376	173,955	11,023
French Guiana									659	4,543	6,788
French Possessions in Africa									625	3,970	
Spain on the Atlantic	11,132	4,787							25	153	
Canary Islands	1,600	1,294					960	1,037	751	4,282	405
Philippine Islands							833	700	5,144	24,769	
Cuba	199,061	134,205	6,346	20,398			5,134	6,445	12,226	73,140	104,228
Porto Rico	1,707	1,286	19,166	61,183	891	3,363			9,817	56,638	5,645
Portugal							327,070	426,419	99	554	1,482
Madeira			15	52					1,870	11,522	
Cape de Verde Islands	12	6	190	760					1,220	6,355	170
Azores	100	72							441	2,732	
Sardinia											115
Tuscany									1,750	8,075	
Turkey in Asia									236	1,317	
Other Ports in Africa	5,200	3,674	41	171					12,150	75,951	4,726
Hayti	400	280	205	650					80,474	483,455	3,223
San Domingo	346	236	39	134	70	275			9,901	60,975	1,441
Mexico	18,364	14,017	1	4			83	170	46,885	282,640	25,361
Central Republic	300	251							5,179	30,096	3,826
New Granada	240	174	101	373			2	2	14,081	93,799	6,686
Venezuela	156,685	124,006	407	1,297	690	2,485	21,124	36,504	48,812	302,769	44,775
Brazil	33,336	19,497	70	241	13	52			373,302	2,473,151	5,218
Cisplatine Republic			10	30					6,546	42,910	2,994
Argentine Republic									34,160	213,674	26,530
Chili									450	2,913	14,948
Peru							13,709	13,998	50	451	25,936
Sandwich Islands							2,617	3,883	2,811	19,999	4,036
Other Islands in the Pacific							27	27	1,097	6,832	774
Japan									208	1,574	
China			290	989			32,295	29,777	17,312	123,709	5,783
Whale Fisheries									100	800	
Total	10,904,898	10,387,383	253,570	778,344	14,463	54,488	37,289,573	42,573,295	4,882,033	27,534,677	2,364,625

TABLE B.

Exports of grain and flour from the United States to foreign countries for the year ending June 30, 1863.

WHITHER EXPORTED.	INDIAN CORN.		INDIAN MEAL.		RYE MEAL.		WHEAT.		WHEAT FLOUR.		RYE, OATS, &C.
	Bushels.	Dollars.	Barrels.	Dollars.	Barrels.	Dollars.	Bushels.	Dollars.	Barrels.	Dollars.	Dollars.
Russian Possessions in N. America							3,347	3,317	4,339	21,792	2,809
Sweden and Norway	3,200	2,440							350	2,380	18,609
Swedish West Indies	272	190	175	635					445	2,405	150
Danish West Indies	5,372	5,159	25,320	109,621	843	3,547			45,995	315,868	7,377
Hamburg	25,173	27,241	8	40	332	1,338	6,993	8,811	44	370	65,584
Bremen	20,556	18,669			105	385	31,486	40,431	4,468	29,135	173,449
Holland			25	78	235	1,303	110,348	161,186	34,284	207,271	84,551
Dutch West Indies	30,063	30,777	4,537	17,984	1,755	7,504			17,065	120,373	4,074
Dutch Guiana	9,120	6,646	75	253					7,525	53,219	733
Dutch East Indies									5,004	39,692	70
Belgium	2,588	1,307	22	97			622,986	906,164	12,828	88,936	130,465
England	5,068,987	3,846,404	1,762	7,140	45	189	20,509,071	27,654,801	1,591,778	9,829,582	198,530
Scotland	333,682	238,154					1,473,784	1,897,701	133,330	789,235	14,451
Ireland	5,381,038	3,882,801	568	2,012			5,342,884	7,200,305	69,388	456,091	41,964
Gibraltar									34,597	224,424	22
Malta									800	5,600	
Canada	4,211,897	1,622,825	9,474	25,521			6,512,801	6,717,093	232,160	1,103,171	119,780
Other British N. American Poss'ns	171,984	131,552	74,478	286,238	4,320	18,630	70,894	110,333	732,384	4,420,748	143,370
British West Indies	180,480	161,375	103,590	408,048	229	967	8,441	13,521	309,359	2,072,197	95,856
British Honduras	3,185	3,681	746	3,230					19,614	144,818	1,340
British Guiana	31,741	29,333	8,196	31,983					72,014	463,184	9,898
British Possessions in Africa	1,000	900	204	943			5,483	11,779	44,569	325,994	55
British Australia	721	702	365	1,615			147,323	181,281	15,386	84,714	134,555
British East Indies			8	37	25	85			6,090	49,766	673
France on the Atlantic	73	73					365,636	541,693	15,880	110,225	4,577
France on the Mediterranean							38,043	55,463	5,538	19,627	
French North American Possessions	177	147	65	251					10,323	60,556	375
French West Indies	22,662	19,686	1,910	8,072	48	228	2,186	3,657	38,334	273,400	6,904
French Guiana									950	7,067	270
French Possessions in Africa			75	360					1,496	12,480	
Spain on the Mediterranean											35
Canary Islands									1,907	11,040	117
Philippine Islands							2,523	2,498	4,190	21,607	120
Cuba	170,122	141,440	3,769	14,270			4,507	7,978	17,032	127,989	96,860
Porto Rico	1,140	1,172	18,393	79,333	205	1,015	300	2,119	15,470	108,976	10,935
Portugal	31,902	26,348					563,125	842,151	50,115	347,173	4,152
Madeira	525	389					19,958	29,937	5,835	41,405	57
Cape de Verde Islands			1	5					867	6,506	
Azores									175	1,135	
Sardinia											3,708
Tuscany									1,300	8,425	
Two Sicilies									6,739	43,201	250
Turkey in Asia									315	2,682	
Other Ports in Africa	240	330	85	369			6,315	12,361	27,133	204,759	1,283
Hayti	1,236	1,129	97	470	15	73			122,045	920,854	3,440
San Domingo	725	616	268	1,190	10	52			14,067	99,879	3,641
Mexico	268,653	263,849	2,477	8,562			2,500	2,792	99,856	774,330	350,619
Central Republic	109	98	6	26					4,406	27,912	547
New Granada	58	63	180	745	2	6			17,816	130,199	8,494
Venezuela	133,140	120,960	618	2,321	500	2,655	43,344	69,536	53,131	383,650	6,155
Brazil	7,655	6,248	94	361	15	90			408,820	3,295,673	18,223
Cisplatine Republic											22,503
Argentine Republic			6	28					7,457	53,171	20,070
Chili							3,028	5,358	2,577	19,450	260
Peru							31,110	35,468	600	4,400	285
Sandwich Islands			1	5			690	702	2,793	13,390	4,210
Other Islands in the Pacific							2,594	2,724	5,287	29,621	746
Japan									1,222	7,367	
China			350	1,429			228,714	233,035	52,393	335,856	16,557
Whale Fisheries									170	1,500	
Total	16,119,476	10,592,704	257,948	1,013,272	8,684	38,067	36,160,414	46,754,195	4,390,055	28,366,069	1,832,757

Reducing the flour and meal to bushels, the total exports of grain during the past two years, as given in detail in the foregoing tables, compare as follows:

Years.	Bushels.	Value.
1862	76, 309, 425	$83, 692, 812
1863	77, 396, 082	88, 597, 064

Of this amount there were shipped to Great Britain and Ireland alone, for the year ending June 30, 1862, 34,102,735 bushels, and in 1863 47,082,026 bushels. The total value of the grain exported to Great Britain in 1862 was $47,916,266, and in 1863 $56,059,360. When it is taken into consideration that in 1825 the total value of the grain and flour exported from the United States to *all* foreign countries amounted to only $5,274,241, some idea may be formed of the rapid growth and development of this trade.

The progress of the early export grain trade of the country is demonstrated by the following table, showing the exports of grain and flour from the United States to foreign countries each year from 1790 to 1817:

TABLE C.

Exports of flour and grain from the United States to foreign countries from 1790 *to* 1817.

[Compiled from United States documents.]

Year ending—	Wheat.	Wheat flour.	Indian corn.	Indian corn meal.	Rye.	Rye flour.	Oats.	Barley.	Buckwheat meal.
	Bushels.	*Barrels.*	*Bushels.*	*Barrels.*	*Bushels.*	*Barrels.*	*Bushels.*	*Bushels.*	*Barrels.*
Sept. 30, 1790	1,124,458	724,623	2,102,137	.....	21,765	.....	98,842	.....	.....
1791	1,018,339	619,681	1,713,241	70,339	36,737	24,062	116,634	35	422
1792	853,790	824,464	1,964,973	52,681	12,727	14,126	119,733	.....	265
1793	1,450,575	1,074,639	1,233,768	37,943	1,305	12,695	78,524	30	146
1794	696,797	828,405	1,472,700	48,834	696	4,034	55,003	26	361
1795	141,273	687,369	1,935,345	102,529	703	4,882	64,335	.....	.....
				Bushels.		*Bushels.*			*Bushels.*
1796	31,226	725,194	1,173,552	540,286	4,319	152,784	59,797	345	1,076
1797	15,655	515,633	804,922	254,799	1,331	36,570	38,221	479	286
1798	15,021	567,558	1,218,231	211,694	2,721	48,444	46,475	4,066	84
1799	10,056	519,625	1,200,492	231,226	1,595	49,269	57,359	522	754
1800	26,853	653,052	1,694,327	338,108	8,227	79,677	57,306	432	93
1801	239,929	1,102,444	1,768,162	919,355	31,110	392,276	100,544	8,796	1,907
1802	280,281	1,156,248	1,633,283	266,816	2,492	33,292	70,778	485	3,260
				Barrels.		*Barrels.*			*Barrels.*
1803	686,415	1,311,853	2,097,608	133,606	50,753	28,273	84,497	2,745	74
1804	127,024	810,008	1,944,873	111,327	11,515	21,779	73,726	5,318	2
1805	18,041	775,513	861,501	116,131	1,474	23,455	55,400	7,185	90
1806	87,784	782,724	1,064,263	108,342	614	18,090	69,993	156	25
1807	1,173,114	1,249,819	612,421	136,460	6,650	29,067	65,277	4,893	66
1808	87,330	263,813	249,532	30,818	530	6,167	23,698	173	.....
1809	393,899	846,247	522,074	57,260	1,185	1,306	20,361	200	60
1810	1,752	798,431	352,924	86,744	1,054,252	5,078	448	6,942	73
1811	216,833	1,445,012	2,790,850	147,423	14,818	29,375	211,894	29,716	150
1812	53,832	1,443,492	2,039,999	90,810	82,705	69,839	48,469	49,707	.....
1813	288,535	1,260,943	1,486,970	58,521	140,136	65,680	14,105	.....	.....
1814	.....	193,274	61,284	26,438	.....	2,716	6,046	2,300	.....
1815	17,634	62,739	130,516	72,364	851	6,016	29,899	2,237	180
1816	52,321	729,053	1,077,614	89,119	3,464	8,373	45,889	6,858	20
1817	96,407	1,479,198	387,454	106,763	1,702	78,067	72,854	4,093	.....

From 1790 to 1817, the period embraced in the foregoing table, the grain exported from the United States was chiefly the product of the Atlantic States. Vermont exported flour and grain of all kinds. New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina,

South Carolina, and Georgia, exported flour, wheat, and Indian corn—the southern States chiefly the latter. In fact, during that period the chief commerce of the Atlantic States consisted in the exportation of grain to Spain, Portugal, and the West India islands; for in those days Great Britain exported more than she imported, as may be inferred from the fact that in 1804 the value of the grain exports to Great Britain amounted to only $59,120—the nucleus of a trade that in 1863 amounted to upwards of fifty-six millions of dollars.

Before the Revolution the grain trade of the colonists constituted their chief commerce. A considerable quantity of grain was exported to the West Indies, but the principal markets were Spain and Portugal. The exports of wheat, flour, &c., from Pennsylvania for the years 1729, 1730, and 1731, were as follows:

Years.	Wheat, bushels.	Flour, barrels.	Bread, casks.	Value of breadstuffs and flax-seed exported.
1729	74,800	35,438	9,730	£62,473
1730	38,643	38,570	9,622	57,500
1731	53,320	56,639	12,436	68,582

In 1739 South Carolina exported 20,165 bushels of Indian corn and peas. In 1742 the price of wheat in New York was 3*s.* 6*d.* per bushel.

The following table shows the amount and value of the flour and grain exported from the United States to foreign countries from 1849 to 1863:

TABLE D.

Amount and value of grain and flour exported from the United States to foreign countries, from 1849 *to* 1863.

(Compiled from official documents of the United States.)

YEAR ENDING—	WHEAT.		WHEAT FLOUR.		INDIAN CORN.		CORN MEAL.		RYE MEAL.		RYE, OATS, & SMALL GRAIN.
	Bushels.	Dollars.	Barrels.	Dollars.	Bushels.	Dollars.	Barrels.	Dollars.	Barrels.	Dollars.	Dollars.
June 30, 1849	1,527,534	1,756,848	2,108,013	11,280,582	13,257,309	7,966,369	405,169	1,169,625	64,830	218,248	139,793
1850	608,661	643,745	1,385,448	7,098,570	6,595,092	3,892,193	259,442	769,611	69,903	216,076	121,101
1851	1,026,725	1,025,732	2,202,335	10,524,331	3,426,811	1,762,549	203,622	622,866	44,152	145,802	120,670
1852	2,694,540	2,555,209	2,709,339	11,869,143	2,627,075	1,540,225	181,105	574,380	18,524	64,476	334,171
1853	3,890,141	4,354,403	2,920,918	14,783,394	2,274,909	1,374,077	212,118	709,974	8,910	34,186	165,824
1854	8,036,665	12,420,172	4,022,386	27,701,444	7,768,816	6,074,277	257,403	1,002,976	23,624	112,703	576,195
1855	798,884	1,329,246	1,204,540	10,896,908	7,807,585	6,961,571	267,208	1,237,122	35,364	236,248	238,976
1856	8,154,877	15,115,661	3,510,626	29,275,148	10,292,280	7,622,565	293,607	1,175,688	38,105	214,563	2,718,620
1857	14,570,331	22,240,857	3,712,053	25,882,316	7,505,318	5,184,666	267,504	957,791	27,023	115,828	680,108
1858	8,926,196	9,061,504	3,512,169	19,328,884	4,766,145	3,259,039	237,637	877,692	14,283	56,235	642,764
1859	3,002,016	2,849,192	2,431,824	14,433,591	1,719,998	1,323,103	258,885	944,269	14,432	60,786	1,181,170
1860	4,155,153	4,076,704	2,611,596	15,448,507	3,314,155	2,399,808	233,709	912,075	11,432	48,172	1,058,304
1861	31,298,057	38,313,624	4,323,756	24,645,849	10,678,244	6,890,865	203,313	692,003	14,143	55,761	1,124,556
1862	37,289,572	42,573,295	4,882,033	27,534,677	10,904,898	10,387,383	253,570	778,344	14,463	54,488	2,364,623
1863	36,160,414	46,754,195	4,390,055	28,366,069	16,119,476	10,592,704	257,948	1,013,272	8,684	38,067	1,832,757

The following is an exhibit of the aggregate value of the domestic exports of the United States from 1821 to 1863, with the value of the exports of breadstuffs during the same period, and the comparative percentage each year of the latter to the former:

Comparison of exports of breadstuffs to total domestic exports.

Years.	Value of exports of breadstuffs.	Total value of domestic exports.	Percentage of exports of breadstuffs to total domestic exp'ts.	Years.	Value of exports of breadstuffs.	Total value of domestic exports.	Percentage of exports of breadstuffs to total domestic exp'ts.
1821	$5,092,636	$43,671,894	11.7	1843	$5,249,600	$77,793,783	6.7
1822	6,187,942	49,874,079	12.4	1844	8,931,396	99,715,179	9.
1823	6,081,926	47,155,408	12.9	1845	7,445,820	99,299,776	7.4
1824	6,713,595	50,649,500	13.3	1846	16,625,407	102,141,893	16.3
1825	5,344,752	66,944,745	8.	1847	53,262,437	150,637,464	35.4
1826	5,419,191	53,055,710	10.2	1848	22,678,602	132,904,121	17.1
1827	5,667,948	58,921,691	9.6	1849	22,895,783	132,666,955	17.2
1828	5,414,665	50,669,669	10.7	1850	13,066,509	136,946,912	19.5
1829	7,149,355	55,700,193	12.8	1851	14,556,236	196,689,718	7.5
1830	7,171,767	59,462,029	11.9	1852	17,256,803	192,368,984	10.3
1831	11,908,910	61,277,057	19.4	1853	21,875,878	213,417,697	19.1
1832	7,142,472	63,137,470	9.7	1854	48,383,107	253,390,870	8.7
1833	7,009,556	70,317,698	10.	1855	21,557,854	246,708,553	8.7
1834	5,677,341	81,024,162	7.	1856	56,619,986	310,586,330	18.2
4835	6,111,164	101,189,082	6.	1857	55,624,832	338,985,065	16.4
1836	4,799,141	106,916,680	4.5	1858	33,698,490	293,758,279	11.5
1837	4,416,643	95,564,414	4.6	1859	24,893,413	335,894,385	7.4
1838	4,944,826	96,033,821	5.14	1860	27,590,298	373,189,274	7.4
1839	8,436,246	103,533,891	8.1	1861	71,722,658	228,699,486	31.4
1840	13,535,926	113,895,634	11.9	1862	83,692,812	212,920,639	39.3
1841	10,254,377	106,382,722	9.6	1863	88,597,064	.....	.....
1842	9,878,176	92,969,699	10.6				

The repeal of the corn laws of Great Britain in 1846, greatly encouraged the importation of grain into that country, and since that date the export grain trade of the United States has been steadily on the increase, never falling below thirteen millions of dollars in any one year, and rising as high as eighty-eight millions. The following table shows the ratio of increase in the value of the grain exports each ten years during the past forty years:

	Aggregate value of grain exports each ten years.	Percentage of increase each ten years.
From 1823 to 1833	67,842,211	....
From 1833 to 1843	73,303,440	8.0
From 1843 to 1853	198,594,871	170.9
From 1853 to 1863	512,380,514	158.0

The following tables show the exports of flour and grain from New York, Boston, Philadelphia Baltimore, and Portland, to foreign countries for a series of years:

TABLE DD.

Exports of flour and grain from New York to foreign countries.

(Compiled from official documents.)

Year ending—	WHEAT.		WHEAT FLOUR.		INDIAN CORN.		CORN MEAL.		RYE MEAL.		RYE, OATS, AND SMALL GRAIN.
	Bushels.	Dollars.	Barrels.	Dollars.	Bushels.	Dollars.	Barrels.	Dollars.	Barrels.	Dollars.	Dollars.
June 30, 1856	5,057,569	9,782,028	1,649,471	13,692,941	4,012,350	3,462,512	69,809	306,179	13,105	76,734	2,022,352
1857	9,588,506	15,160,511	1,735,981	12,099,512	3,611,330	2,596,097	75,424	271,980	9,266	39,051	401,693
1858	4,960,152	5,451,491	1,314,869	7,017,790	1,829,333	1,331,570	62,532	234,945	5,696	21,969	109,786
1859	1,390,828	1,886,113	965,628	5,304,329	527,591	433,894	78,477	309,055	5,945	24,706	369,983
1860	1,880,908	2,336,190	1,187,200	6,639,996	580,079	1,182,381	86,073	346,430	5,010	21,185	484,507
1861	21,320,775	27,308,226	2,665,497	15,057,256	6,874,372	4,773,947	94,314	317,765	8,830	34,676	590,591

TABLE DD.

Exports of flour and grain from Boston to foreign countries.

(Compiled from official documents.)

Year ending—	WHEAT.		WHEAT FLOUR.		INDIAN CORN.		CORN MEAL.		RYE MEAL.		RYE, OATS, AND SMALL GRAIN.
	Bushels.	Dollars.	Barrels.	Dollars.	Bushels.	Dollars.	Barrels.	Dollars.	Barrels.	Dollars.	Dollars.
June 30, 1856	17,994	35,986	175,503	1,555,937	33,215	28,561	37,515	168,856	2,828	17,637	24,049
1857	3,652	6,179	204,807	1,484,973	30,914	25,440	27,334	104,995	1,550	7,182	22,646
1858	2,336	3,491	154,901	955,257	34,760	30,112	21,853	86,900	2,371	10,452	9,869
1859	.....	.....	150,531	890,510	7,552	7,350	15,510	64,450	1,505	7,360	30,910
1860	2,760	4,730	174,450	1,093,130	7,015	6,940	11,144	47,660	1,285	5,780	29,050
1861	16,970	23,780	268,518	1,575,252	22,054	18,041	16,920	64,324	1,706	7,670	51,940

TABLE DDD.

Exports of flour and grain from Philadelphia to foreign countries.

(Compiled from official documents.)

Year ending—	WHEAT.		WHEAT FLOUR.		INDIAN CORN.		CORN MEAL.		RYE MEAL.		RYE, OATS, AND SMALL GRAIN.
	Bushels.	Dollars.	Bushels.	Dollars.	Bushels.	Dollars.	Barrels.	Dollars.	Barrels.	Dollars.	Dollars.
June 30, 1856	359,473	670,554	314,846	2,496,968	664,898	454,172	92,507	333,419	13,695	72,563	270,260
1857	597,942	974,693	296,674	2,012,151	912,499	654,012	67,870	231,612	11,672	49,336	14,532
1858	167,164	215,991	233,651	1,293,228	591,965	439,017	41,569	150,264	4,738	17,858	8,377
1859	29,904	38,002	191,879	1,138,525	105,668	93,273	41,974	165,976	5,390	22,554	4,287
1860	127,740	181,044	178,688	1,064,649	270,815	212,599	46,962	181,173	4,446	18,482	15,531
1861	1,627,845	2,203,215	404,813	2,429,774	757,704	511,845	41,977	140,130	3,186	11,742	22,302

TABLE DDDD.

Exports of flour and grain from Baltimore to foreign countries.

(Compiled from official documents.)

Year ending—	WHEAT.		WHEAT FLOUR.		INDIAN CORN.		CORN MEAL.		RYE MEAL.		RYE, OATS, AND SMALL GRAIN.
	Bushels.	Dollars.	Barrels.	Dollars.	Bushels.	Dollars.	Barrels.	Dollars.	Barrels.	Dollars.	Dollars.
June 30, 1856	274,937	537,236	587,993	4,776,175	609,878	452,546	50,822	190,076	4,367	26,781	123,023
1857	989,087	1,581,637	541,427	3,638,737	562,099	375,438	61,589	209,066	4,470	19,942	32,970
1858	249,031	308,657	551,088	2,909,679	489,532	334,576	54,448	196,869	1,095	4,033	33,422
1859	62,649	73,802	345,891	2,055,537	167,690	150,890	52,799	211,131	817	3,475	27,822
1860	15,045	20,032	363,493	2,183,487	224,052	180,882	51,525	196,393	681	2,685	31,562
1861	1,097,416	1,563,765	444,026	2,605,568	1,015,777	697,000	29,399	96,955	341	1,419	18,527

TABLE DDDDD.

Exports of flour and grain from Portland to foreign countries.

(Compiled from official documents.)

Year ending—	WHEAT.		WHEAT FLOUR.		INDIAN CORN.		CORN MEAL.		RYE MEAL.		RYE, OATS, AND SMALL GRAIN.
	Bushels.	Dollars.	Barrels.	Dollars.	Bushels.	Dollars.	Barrels.	Dollars.	Barrels.	Dollars.	Dollars.
June 30, 1856	.....	.....	8,483	78,636	689	653	660	3,081	100	734	5,358
1857	.....	.....	3,621	27,468	318	306	795	2,952	29	145	1,464
1858	.....	.....	6,598	34,874	938	928	154	536	265	1,328	1,459
1859	.....	.....	3,706	21,961	.....	.....	784	1,899	.....	.....	113
1860	9,378	9,652	4,347	26,443	.....	.....	712	3,826	.....	.....	63,197
1861	508,349	619,298	95,839	370,596	.....	.....	354	1,233	.....	.....	64,407

Imports of wheat, corn, and flour into Great Britain and Ireland during the past three years.

(Compiled from British Board of Trade returns.)

Countries.	1861.	1862.	1863.
WHEAT:	*Quarters.*	*Quarters.*	*Quarters.*
From Russia	1,041,461	1,327,158	1,046,378
Prussia	1,027,733	1,450,484	1,017,807
Denmark	228,157	145,338	128,155
Mecklenberg	122,248	93,161	98,800
Hanse Towns	214,146	156,701	73,013
France	180,903	224,835	34,034
Turkey and Danube	231,044	390,068	95,811
Egypt	339,811	759,036	555,290
United States	2,507,744	3,724,770	2,008,708
British America	549,525	861,452	483,230
Other countries	470,043	336,267	111,275
Total wheat	6,912,815	9,469,270	5,622,501
INDIAN CORN.—Quarters	3,090,352	2,728,791	2,971,872
FLOUR:	*Cwts.*	*Cwts.*	*Cwts.*
From Hanse Towns	279,609	256,973	306,216
France	460,775	790,040	1,367,938
United States	3,794,865	4,499,534	2,531,822
British America	805,339	1,108,591	883,352
Other countries	812,350	551,975	129,648
Total flour	6,152,938	7,207,113	5,218,976

From the foregoing table it will be seen that of the imports of wheat into Great Britain and Ireland during the three years named, 37.5 per cent. were from the United States, 15.9 per cent. from Prussia, and 15.5 per cent. from Russia. Of the imports of flour into that kingdom during the same period, 58.3 per cent. were from the United States, and 14.1 per cent. from France.

The following table shows the aggregate imports of wheat into Great Britain and Ireland from the five leading grain-exporting countries during the ten years ending with 1863:

From—	Quarters.
United States	12,968,574
Prussia	8,340,202
Russia	7,186,493
Egypt	4,152,230
Canada	2,444,505

The following table, furnished by our consul at Odessa, shows the total exports of grain, flour, and meal from Russia, one of the chief grain-exporting countries in Europe, from 1857 to 1862, inclusive:

	From Odessa.	From southern ports.	From all Russia.
Wheat ... bushels	36,003,030	94,512,072	119,383,752
Rye ... do	5,645,792	7,812,216	53,479,296
Oats ... do	13,647,162	15,958,458	53,404,554
Barley ... do	11,498,028	14,077,050	24,338,544
Peas ... do	698,082	698,084	2,050,002
Corn ... do	12,040,842	12,110,380	13,271,592
Flour and meal ... do	1,101,744	1,868,904	5,766,780
Linseed and rape-seed ... do	7,300,086	20,983,296	44,583,796
Total bushels	88,934,766	168,020,560	316,278,316

Compared with that of Russia, the grain trade of the United States is but in its infancy, and yet in wheat, flour, meal, and Indian corn, the exports of the United States, during the six years ending 1862, compare favorably with those of Russia, as the following table shows:

Total exports of wheat, corn, flour, and meal from the United States and from Russia, from 1857 *to* 1862 *inclusive.*

	From United States.	From Russia.
Wheat, bushels	99, 181, 325	119, 383, 752
Corn, bushels	38, 888, 758	13, 271, 592
Flour and meal, bushels	116, 689, 519	5, 766, 780
Total	254, 759, 602	138, 422, 124

Deducting the linseed and rape-seed, which do not properly come under the classification, the total exports of all kinds of grain, flour, and meal from Russia. as furnished in the previous table, for six years ending 1862, amount to 261,694,520 bushels, while the exports of wheat, corn, flour, and meal alone from the United States amount to 254,759,602 bushels, as demonstrated in detail in the foregoing exhibit.

THE INTERNAL GRAIN TRADE.

The exportation of grain to foreign countries, however, does not by any means indicate, the full extent of the grain trade of any country. The progress of the arts and manufactures, and the entire devotion of a large portion of some of the southern States to the cultivation of cotton, tobacco, sugar and rice, have created very attractive home markets in the eastern, middle, and southern States; and, although the export demand is always of great advantage to the agriculturist, it is the certain home market upon which he has mainly to depend. Without this, whenever the export demand falls off materially, as it sometimes does when Europe has extraordinary crops, the agricultural interest would be so uncertain in its character that but few would be willing to engage extensively in the production of the various cereals. This feature of the trade has for many years engaged the attention of leading statesmen, and legislation has been shaped more or less for the last quarter of a century, towards fostering and encouraging the establishment of manufactories of all kinds on this continent, so as to attract labor and capital from the manufacturing populations of the old world, and render us more independent of foreign countries.

That great progress has been made in this direction, the present position of the grain trade fully demonstrates. For instance, in 1860 the single State of Illinois (according to the census returns) produced 23,837,023 bushels of wheat, and the whole amount exported from the United States to foreign countries during the same year (including flour reduced to wheat) was only 17,213,133 bushels. With regard to Indian corn, the value of a home market is even more apparent. In 1860 Illinois produced 115,174,777 bushels, and there was exported during that year altogether only 15,448,507 bushels, a mere fraction of the product of one State.

The following table shows the comparison between the production and the exportation of grain in the United States:

WHEAT.

	Production. *Bushels.*	Wheat and flour exported. *Bushels.*
1850	100, 485, 944	7, 535, 901
1860	173, 104, 924	17, 213, 133

INDIAN CORN.

	Production. *Bushels.*	Exported. *Bushels.*
1850	592, 071, 104	6, 595, 092
1860	838, 792, 740	15, 448, 507

Notwithstanding the great increase in the production of grain, the increased population has been gradually diverted from agricultural pursuits to those of manufactures, and the result is that those very States which half a century ago were exporting grain, are now almost entirely dependent on the west for their supply of breadstuffs. The following extract from the message of Governor Andrew to the legislature of Massachusetts at its last session, supplies a clear illustration of this point:

"Foreign statistical writers differ considerably in their estimates of the cereal consumption of nations. McCulloch states the yearly consumption of England at one 'quarter' of wheat, or eight bushels, to each inhabitant. France, feeding more on bread and less on meat, is estimated as high as ten bushels. But New England, consuming largely of fish and other animal food, possibly may not exceed seven bushels to each person. At seven bushels each, her 3,135,293 inhabitants would consume 21,947,601 bushels.

The census of 1860 shows that her own product of cereals was:

Of wheat, only	1,077,285	bushels.
Of rye, only	1,617,560	"
Of Indian corn, only	9,099,570	"
Total yield of cereals grown in New England	11,594,445	"

"But Massachusetts, with a population of 1,231,066, produced less breadstuffs in proportion than either of the other New England States. While her population would, at seven bushels each, call for 8,617,462 bushels, her actual production of cereals was:

Of wheat, only	119,783	bushels.
Of rye, only	383,085	"
Of Indian corn, only	2,157,063	"
Her total being only	2,659,931	"

"Her residue of breadstuffs, purchased of the region to the north and west, allowing seven bushels for each inhabitant in the year 1860, was 5,952,531 bushels; or, if she consumed at the rate of eight bushels, the computation of English consumption by McCulloch, her purchase must have been 7,183,597 bushels. More than seven-eighths of the whole cereal yield of Massachusetts was Indian corn, of which a very large portion must have been fed to animals. Her proportional purchase, therefore, must have been much larger than the average purchase of New England. The annual consumption of purchased flour by New England, at an estimate which is sustained by the computation which I have already made, is something near 3,500,000 barrels, or more than one barrel to each inhabitant. In the year 1862, more than 800,000 barrels of western and northern flour were sold in Boston for domestic consumption, or three-fourths of a barrel for each person in Massachusetts.

* * * * * * * * * * *

"I venture to affirm that the consumption of western agricultural products within the six States of New England, including flour, grain and animal food, used for the support of man and the forage of cattle, swine, and horses, during the year 1863, reached the value of $50,000,000, the proportion of which taken by Massachusetts exceeded $20,000,000."

The opening of the Erie canal to Lake Erie, on the 25th October, 1825, was the commencement of a new era in the internal grain trade of the United States, as it connected the waters of the great lakes with those of the Atlantic, affording a navigable water-course through the entire State of New York. To the pioneer, the agriculturist, and the merchant, this grand avenue developed a new world, and instituted what is now the commerce of the lakes.

The following table shows the total receipts of flour and wheat at tide-water by the Erie and Champlain canals for a period of twenty-nine years:

Total receipts of flour and wheat at tide-water by the New York canals.

Years.	Flour.	Wheat.	Years.	Flour.	Wheat.
	Barrels.	*Bushels.*		*Barrels.*	*Bushels.*
1835	999,125	688,265	1850	3,256,085	2,670,754
1836	928,116	824,855	1851	3,358,465	3,163,682
1837	914,171	592,637	1852	3,464,108	6,754,946
1838	1,079,001	551,589	1853	3,063,742	9,432,657
1839	992,503	582,752	1854	1,249,453	3,523,800
1840	1,834,727	1,559,859	1855	1,290,149	5,426,285
1841	1,647,155	912,443	1856	1,098,000	11,741,366
1842	1,588,368	938,417	1857	835,546	5,763,400
1843	2,073,708	827,346	1858	1,898,908	8,324,966
1844	2,222,204	1,262,249	1859	903,296	5,110,533
1845	2,518,150	1,620,033	1860	1,240,908	19,204,000
1846	3,062,677	2,950,633	1861	1,530,775	29,632,400
1847	3,952,972	4,136,832	1862	1,826,509	32,667,866
1848	3,130,575	3,116,134	1863	1,560,800	22,206,900
1849	3,262,096	2,388,314			

The following is an exhibit of the total receipts of all kinds of grain at tide-water by the Erie and Chamblain canals for a series of years:

Total receipts of all kinds of grain at tide-water by the New York canals.

Years	Grain, bushels.	Years.	Grain, bushels.
1849	11,986,690	1857	16,142,310
1850	11,585,619	1858	23,686,374
1851	16,762,613	1859	18,049,798
1852	19,583,875	1860	41,122,100
1853	19,316,019	1861	62,275,951
1854	23,796,038	1862	74,811,877
1855	21,613,904	1863	66,713,000
1856	30,793 225		

The Mississippi river was the only outlet to the ocean for the entire northwestern territory, comprising now the northwestern States, prior to the opening of the Erie canal in 1825, but the completion of this great work rendered the country west of the lakes attractive to the enterprising populations of the eastern States and of Europe, and the tide of emigration soon began to flow westward. The construction of the Welland and other Canadian canals, a few years later, connected Lake Erie with Lake Ontario, and thus opened another avenue to the seaboard by the St. Lawrence river.

From that period do we date the rise and progress of the northwest, as well as of the internal grain trade. Those counties in Ohio bordering on Lake Erie became settled first, and as late as 1835 that State was the only grain-exporting territory on the lakes, there having passed through the Erie canal on that year 86,233 barrels of flour, and 1,354,995 bushels of wheat, all the product of Ohio. Michigan began to be settled in the early part of the present century, but it is stated in a copy of the Detroit Gazette, dated 1818, that "from four to five hundred farmers, in addition to those already in the Territory, would be needed to supply the demand for breadstuffs for local consumption." The deficiency at that period was made up by shipments from Ohio. From 1825 to 1830 the population of Michigan began to increase very rapidly, and in 1843 the exportation of grain from that State embraced 106,181 bushels of wheat, 2,582 bushels of corn, 275 bushels of oats, and 263,083 barrels of flour.

It was not till about the year 1830, however, that the resources of the fertile territory lying between Lake Michigan and the Mississippi river began to be developed. The first shipment of grain from Lake Michigan, of which there is any record, was made in the year 1836, when the brig John H. Kenzie took on board at Grand Haven, Michigan, 3,000 bushels of wheat for the port of Buffalo.

The first shipment of grain from the western shore of Lake Michigan, of which there is any record, was made in 1838, consisting of only thirty-nine bags of wheat. This was the first shipment of grain from Chicago, a port which in 1863 exported not less than 18,298,532 bushels of wheat and flour, and 54,741,839 bushels of grain of all kinds.

The first shipment of grain from Wisconsin was made at the port of Milwaukie in 1841, consisting of about 4,000 bushels of wheat, which was purchased on Canadian account and forwarded there. The exports of grain and flour from this same port only twenty years later, amounted to 16,317,322 bushels, consisting chiefly of wheat.

In 1848 the Illinois and Michigan canal, which connects Lake Michigan with the Illinois river, was completed. This greatly stimulated the grain trade of the lakes, as it provided a water-course from the heart of the fertile prairies of Illinois to the Atlantic ocean.

The next great step towards the development of the grain resources of the lake basin was made in the year 1849, when the era of railroad communication was inaugurated by the opening of the Galena and Chicago Union railroad to Fox river, which was soon afterwards extended and completed to the Mississippi. In 1852 the receipts of grain and flour by this railroad amounted to 1,658,725 bushels, and in 1863 there were received by the same road 11,395,649 bushels of grain of all kinds.

The success of the Galena railroad soon stimulated other enterprises of the same nature, until now the territory lying between Lake Michigan and the Mississippi river is crossed by about fifteen different lines. The same system of railroads is also being extended west of the Mississippi across the States of Missouri, Iowa, and Minnesota, into Kansas and Nebraska, and it is not improbable that but a few years will elapse before the grain product of these young frontier States will be as large as that of Iowa or Minnesota at present.

The number of miles of railroad built between 1850 and 1860, in six of the western States, was 9,119, as follows;

States.	1850.	1860.	Inc'se in miles.
Michigan	342	799.33	457.33
Wisconsin	20	922.50	902.50
Iowa	.....	679.75	679.75
Illinois	110.50	2,867.75	2,757.25
Ohio	575.25	2,999.50	2,424.25
Indiana	228	2,125.75	1,897.75
Total miles	1,275.75	10,394.58	9,118.83

The rapid progress of the grain trade of the northwest is fully demonstrated by the increase in the commerce of the lakes. As late as the year 1845 the tonnage of the lakes consisted of only 380 vessels of all classes, with an aggregate tonnage of 76,000 tons, while at the close of the season of 1863 there were employed in the carrying trade of the lakes—three-fourths of which consists of the transportation of grain—1,870 vessels of all classes, with an aggregate tonnage of 470,034 tons, valued at $16,720,800.

The following table exhibits the total tonnage of vessels engaged in the commerce of the lakes during the past six years:

Tonnage of the lakes during the past six years.

Years.	Tonnage.
1858	405,301
1859	392,783
1860	391,220
1861	389,611
1862	454,893
1863	470,034

But, rapid as has been the increase in the facilities for the transportation of grain and flour from the west to the east, it is evident, from the high rates of freight that have ruled during the past two or three years, that they are still inadequate to meet the requirements of the trade.

The following table shows the receipts of flour and grain at the port of Buffalo during the past twenty-eight years:

TABLE E.

Receipts of flour and grain at Buffalo for twenty-eight years.

Years.	Flour, barrels.	Wheat, bushels.	Corn, bushels.	Oats, bushels.	Barley, bushels.	Rye, bushels.	Total flour and grain, bushels.
1836	139,178	304,090	204,355	28,640	4,876	1,500	1,239,351
1837	126,805	450,350	94,490	2,553	.....	3,267	1,184,685
1838	277,620	933,117	34,148	6,577	.....	909	2,362,851
1839	294,125	1,117,262	.....	.....	.....	.....	2,587,887
1840	597,142	1,004,561	71,327	.....	.....	.....	4,061,598
1841	730,040	1,635,000	201,031	14,144	.....	2,150	5,502,525
1842	734,308	1,555,420	454,530	.....	4,710	1,268	5,687,468
1843	917,517	1,827,241	223,968	2,849	.....	1,332	6,642,610
1844	915,030	2,177,500	137,978	18,017	1,617	456	6,610,718
1845	746,750	1,770,740	54,200	23,300	.....	.....	5,581,790
1846	1,374,529	4,744,184	1,455,258	218,300	47,530	28,250	13,366,167
1847	1,857,000	6,489,100	2,862,800	446,000	.....	70,787	19,153,187
1848	1,249,000	4,520,117	2,298,000	560,000	6	17,889	13,641,012
1849	1,207,435	4,943,978	3,321,651	362,384	.....	.....	14,665,188
1850	1,103,039	3,681,347	2,593,378	357,580	3,600	.....	12,059,559
1851	1,258,224	4,167,121	5,988,775	1,140,340	142,773	10,652	17,740,781
1852	1,299,513	5,549,778	5,136,746	2,596,231	497,913	112,251	20,390,504
1853	975,557	5,420,043	8,065,793	1,580,655	401,098	107,152	15,956,526
1854	739,756	3,510,782	10,108,983	4,401,739	313,885	177,066	22,252,235
1855	936,761	8,022,126	9,711,430	2,693,222	62,304	299,591	24,472,278
1856	1,126,048	8,465,671	9,633,277	1,733,382	46,327	245,810	25,753,907
1857	845,953	8,334,179	5,713,611	1,214,760	37,844	48,536	19,578,695
1858	1,536,109	10,671,550	6,621,668	2,275,241	308,371	125,214	27,812,980
1859	1,420,333	9,234,652	3,113,653	1,394,502	361,560	124,693	22,530,722
1860	1,122,335	18,502,649	11,386,217	1,209,594	262,158	80,822	37,053,115
1861	2,159,591	27,105,219	21,024,657	1,797,905	313,757	337,764	61,460,601
1862	2,846,022	30,435,831	24,288,627	2,624,932	423,124	791,564	72,872,454
1863	2,978,089	21,240,348	20,086,952	7,322,187	641,449	422,309	64,735,510

The next most important receiving point on the lakes is the port of Oswego, on Lake Ontario. The following table shows the receipts at that port for sixteen years:

TABLE F.—*Receipts of flour and grain at Oswego for sixteen years.*

Years.	Flour into wheat, bushels.	Wheat, bushels.	Corn, bushels.	Oats, bushels.	Rye, bushels.	Barley, bushels.	Total flour and grain, bushels.
1848	448,510	3,642,683	373,185	63,136	51,765	181,560	4,760,839
1849	1,588,790	3,615,677	383,230	133,697	31,426	65,256	5,818,076
1850	1,512,885	3,847,384	426,121	113,463	86,439	120,652	6,106,944
1851	1,949,645	4,231,899	1,251,500	175,984	106,518	194,858	7,910,404
1852	1,361,715	6,525,309	1,055,043	90,609	31,279	134,697	9,198,652
1853	1,956,075	7,436,391	787,672	32,806	69,301	43,070	10,335,315
1854	836,335	2,492,333	2,632,274	323,296	43,215	101,436	6,428,889
1855	1,123,215	5,365,783	2,860,900	228,097	281,021	172,215	10,031,231
1856	1,014,615	8,382,398	3,589,211	169,758	339,503	110,019	13,605,539
1857	506,915	5,353,026	2,003,992	14,603	74,436	281,210	8,234,182
1858	483,315	6,595,433	2,913,618	637,933	98,008	549,967	11,278,274
1859	324,755	4,874,593	804,646	251,534	182,437	778,419	7,216,38
1860	606,995	9,651,564	5,019,400	388,416	244,311	1,326,915	17,237,60
1861	595,280	10,121,446	4,642,262	116,384	381,687	1,173,551	17,030,61
1862	1,176,910	10,982,132	4,528,962	187,284	130,175	1,050,364	18,055,8
1863	576,460	8,785,425	2,676,367	423,147	116,355	1,824,667	14,402,42

The following is an exhibit of the receipts of flour and grain at the port of Toledo during the past five years:

TABLE G.

Receipts of flour and grain at Toledo for five years.

Years.	Flour, barrels.	Wheat, bushels.	Corn, bushels.	Oats, bushels.	Rye, bushels.	Barley, bushels.	Total flour and grain, bushels.
1859	688,103	2,312,583	714,291	.....	.....	.....	6,467,389
1860	720,517	5,272,690	5,333,751	137,538	35,957	122,382	14,504,903
1861	1,406,476	6,277,407	5,312,038	41,428	31,193	12,064	18,706,510
1862	1,585,325	9,827,629	3,813,709	234,759	44,308	63,138	21,910,228
1863	1,126,260	6,194,130	1,705,096	733,796	24,520	37,608	14,326,459

On Lake Michigan, Chicago stands foremost as a general grain-shipping port. The following table shows the shipments of flour and grain from that port during the past twenty-six years:

TABLE H.

Shipments of flour and grain from Chicago for twenty-six years.

(Compiled from statistics of the Board of Trade.)

Years.	Flour and wheat, bushels.	Corn, bushels.	Oats, bushels.	Rye, bushels.	Barley, bushels.	Total flour and grain, bushels.
1838	78	.....	.....	.....	.....	78
1839	3,678	.....	.....	.....	.....	3,678
1840	10,000	.....	.....	.....	.....	10,000
1841	40,000	.....	.....	.....	.....	40,000
1842	586,907	.....	.....	.....	.....	586,907
1843	688,907	.....	.....	.....	.....	688,907
1844	923,494	.....	.....	.....	.....	923,494
1845	1,024,620	.....	.....	.....	.....	1,024,620
1846	1,599,819	.....	.....	.....	.....	1,599,819
1847	2,136,994	67,315	38,892	.....	.....	2,243,201
1848	2,386,000	550,460	65,280	.....	.....	3,001,740
1849	2,192,809	644,848	26,849	.....	31,453	2,895,959
1850	1,387,989	262,013	186,054	.....	22,872	1,858,928
1851	799,380	3,221,317	605,827	.....	19,997	4,646,521
1852	941,470	2,757,011	2,030,317	17,315	127,028	5,873,141
1853	1,680,998	2,780,253	1,748,493	82,162	120,275	6,422,181
1854	2,644,860	6,837,899	3,239,987	41,153	148,421	12,902,320
1855	7,115,270	7,517,678	1,888,533	20,132	92,032	16,633,645
1856	9,419,365	11,129,668	1,014,547	590	19,051	21,583,221
1857	10,783,292	6,814,615	416,778	.....	17,993	18,032,678
1858	10,909,243	7,493,212	1,498,134	7,569	132,020	20,040,178
1859	10,759,359	4,217,654	1,174,177	131,449	486,218	16,768,857
1860	15 892,857	13,700,113	1,091,698	156,642	267,749	31,109,059
1861	23,885,553	24,372,725	1,633,237	393,813	226,534	50,511,862
1862	22,508,143	29,452,610	3,112,366	871,796	532,195	56,477,110
1863	18,298,532	24,906,934	9,909,175	683,946	943,252	54,741,839

As a grain-shipping port, that of Milwaukie, on Lake Michigan, is the second in importance. The shipments of flour and grain at this port during the past nineteen years were as follows:

TABLE I.

Shipments of flour and grain from Milwaukie for nineteen years.

(Compiled from statistics of Chamber of Commerce.)

Years.	Flour, barrels.	Wheat, bushels.	Corn, bushels.	Oats, bushels.	Rye, bushels.	Barley, bushels.	Total flour and grain, bushels.
1845	7,550	95,510	.....	.....	.....	.....	133,260
1846	15,756	213,448	.....	.....	.....	.....	292,228
1847	34,380	598,411	.....	.....	.....	.....	770,311
1848	92,732	602,474	.....	.....	.....	.....	1,076,134
1849	136,657	1,136,023	2,500	4,000	.....	15,000	1,840,808
1850	100,017	297,578	5,000	2,100	.....	15,270	820,033
1851	51,889	317,285	13,828	7,892	.....	103,840	702,290
1852	92,995	564,404	2,220	363,841	54,692	322,621	1,772,753
1853	104,055	956,703	270	131,716	80,365	291,890	1,981,219
1854	145,032	1,809,452	164,908	404,999	113,443	331,339	3,549,301
1855	181,568	2,641,746	112,132	13,833	20,030	63,379	3,758,900
1856	188,455	2,701,979	218	5,443	.....	10,398	3,720,313
1857	228,442	2,581,311	472	2,775	.....	800	3,727,568
1858	298,688	3,994,213	43,958	562,067	5,378	63,178	6,162,234
1859	282,956	4,732,957	41,364	299,002	11,577	53,216	6,552,896
1860	457,343	7,568,608	37,204	64,682	9,735	28,056	9,995,000
1861	674,474	13,300,495	1,485	1,200	29,810	5,220	16,710,580
1862	711,405	14,915,680	9,489	79,094	126,301	44,800	18,712,389
1863	603,526	12,837,620	88,989	831,600	84,047	133,449	16,993,335

The following table shows the total amount of grain, including flour, shipped from all the ports on Lake Michigan during the past six years:

TABLE J.

Total shipment eastward of grain and flour from Lake Michigan ports for six years.

(Compiled from the statistics of the various boards of trade.)

Ports.	1858.	1859.	1860.	1861.	1862.	1863.
	Bushels.	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*
Chicago	20,040,178	16,768,857	31,109,059	50,511,862	56,477,110	54,741,839
Milwaukie	6,162,234	6,552,896	9,995,000	16,710,580	18,712,389	16,993,335
Racine	1,085,132	1,435,000	907,256	910,767	1,230,000	881,416
Kenosha	238,817	430,000	295,003	384,000	235,454	141,670
Waukegan	48,000	70,000	195,000	165,000	124,000	120,000
Sheboygan	206,173	275,000	214,862	219,262	452,470	360,752
Port Washington	31,759	50,000	65,235	69,610	122,350	107,862
Green Bay	.....	140,000	350,033	448,722	780,902	1,288,790
Manitowoc	.....	.....	55,000	51,310	84,000	75,000
St. Joseph	52,000	30,000	25,000	18,000	.....	.....
Michigan City	15,000	78,000	.....	.....	.....	.....
Total	27,879,293	25,829,753	43,211,448	69,489,113	78,218,675	74,710,664

A glance at the figures in the foregoing table fully demonstrates the marvellous progress which has taken place in the grain trade of the northwest. In history, ancient or modern, we may search in vain for a parallel.

The following table shows the entire movement of flour and grain eastward from the western and northwestern States, (including, in this instance, Canada West, whose products intermingle, in a general statement such as this, with those of the United States:)

TABLE K.

Total movement of flour and grain from the west to the east, by all the routes, for eight years.

(Compiled from official records.)

Received at—	1856.				1857.			
	Flour.	Wheat.	Corn.	Other grain.	Flour.	Wheat.	Corn.	Other grain.
	Barrels.	*Bushels.*	*Bushels.*	*Bushels.*	*Barrels.*	*Bushels.*	*Bushels.*	*Bushels.*
Western terminus of the Baltimore and Ohio railroad	449, 797	.....	.....	487, 100	426, 801	.....	.....	256, 183
Western terminus of the Pennsylvania Central railroad	215, 000	.....	.....	405, 872	351, 011	.....	.....	206, 793
Dunkirk	350, 000	.....	.....	.....	354, 072	93, 433	.....	.....
Buffalo	1, 126, 048	8, 465, 671	9, 633, 277	2, 025, 519	845, 953	8, 334, 179	5, 713, 611	1, 301, 140
Suspension bridge	304, 524	.....	.....	900, 000	180, 194	148, 138	.....	.....
Oswego	202, 930	8, 382, 398	3, 589, 211	619, 280	101, 363	5, 353, 026	2, 003, 992	370, 249
Ogdensburg	354, 964	610, 937	377, 975	37, 432	361, 578	598, 523	517, 076	14, 740
Cape Vincent	65, 000	500, 000	45, 000	50, 000	60, 472	477, 375	40, 537	49, 408
Montreal	712, 038	1, 546, 352	637, 969	37, 366	637, 052	1, 708, 965	383, 162	38, 165
Rochester	.....	.....	.....	.....	.....	.....	.....	.....
Total	3, 780, 301	19, 505, 358	14, 283, 432	4, 562, 569	3, 318, 496	16, 713, 639	8, 658, 378	2, 236, 678

TABLE K—Continued.

Received at—	1858.				1859.			
	Flour.	Wheat.	Corn.	Other grain.	Flour.	Wheat.	Corn.	Other grain.
	Barrels.	*Bushels.*	*Bushels.*	*Bushels.*	*Barrels.*	*Bushels.*	*Bushels.*	*Bushels.*
Western terminus of the Baltimore and Ohio railroad	682, 314	.....	.....	330, 871	446, 403	17, 800	.....	196, 466
Western terminus of the Pennsylvania Central railroad	450, 000	.....	.....	250, 000	350, 000	.....	.....	150, 000
Dunkirk	331, 007	186, 449	94, 005	24, 965	493, 053	263, 483	77, 914	14, 400
Buffalo	1, 536, 109	10, 671, 550	6, 621, 068	2, 708, 820	1, 420, 333	9, 234, 652	3, 113, 653	1, 880, 755
Suspension bridge	200, 410	102, 694	.....	.....	41, 374	57, 569	.....	73, 346
Oswego	95, 720	6, 595, 433	2, 913, 018	1, 285, 908	64, 941	4, 874, 593	804, 646	1, 212, 390
Ogdensburg	381, 624	790, 178	720, 236	44, 120	294, 569	769, 010	298, 519	64, 702
Cape Vincent	72, 633	410, 191	40, 000	156, 631	9, 390	266, 735	20, 100	216, 435
Montreal	664, 275	1, 769, 482	105, 087	136, 537	597, 583	638, 700	71, 430	204, 652
Rochester	7, 110	276, 515	.....	9, 865	1, 764	416, 821	.....	8, 900
Total	4, 421, 202	20, 802, 492	10, 495, 514	4, 947, 729	3, 658, 409	16, 539, 356	4, 386, 262	4, 022, 046

TABLE K—Continued.

Received at—	1860.				1861.			
	Flour.	Wheat.	Corn.	Other grain.	Flour.	Wheat.	Corn.	Other grain.
	Barrels.	*Bushels.*	*Bushels.*	*Bushels.*	*Barrels.*	*Bushels.*	*Bushels.*	*Bushels.*
Western terminus of the Baltimore and Ohio railroad	352, 413	.....	.....	126, 393	270, 000	.....	.....	80, 000
Western terminus of the Pennsylvania Central railroad	426, 660	.....	.....	864, 160	1, 045, 028	.....	.....	1, 948, 256
Dunkirk	542, 765	500, 888	644, 081	8, 843	736, 529	604, 561	230, 400	7, 175
Buffalo	1, 122, 335	18, 502, 649	11, 386, 217	1, 552, 574	2, 159, 591	27, 105, 219	21, 024, 657	2, 532, 770
Suspension bridge	650, 000	.....	.....	1, 875, 000	758, 915	.....	.....	2, 675, 948
Oswego	121, 185	9, 651, 564	5, 019, 400	1, 959, 642	119, 056	10, 121, 446	4, 642, 262	1, 671, 622
Ogdensburg	248, 200	565, 022	867, 014	48, 211	441, 488	677, 386	1, 119, 594	25, 666
Cape Vincent	28, 940	203, 878	73, 300	186, 597	65, 407	276, 610	124, 411	104, 591
Montreal	608, 309	2, 686, 728	138, 214	915, 648	937, 324	7, 738, 084	1, 565, 477	280, 058
Rochester	5, 250	425, 765	.....	10, 725	2, 500	520, 618	.....	10, 990
Total	4, 106, 057	32, 536, 494	18, 128, 226	7, 547, 793	6, 535, 838	47, 043, 924	28, 706, 801	9, 337, 076

TABLE K—Continued.

Received at—	1862.				1863.			
	Flour.	Wheat.	Corn.	Other grain.	Flour.	Wheat.	Corn.	Other grain.
	Barrels.	*Bushels.*	*Bushels.*	*Bushels.*	*Barrels.*	*Bushels.*	*Bushels.*	*Bushels.*
Western terminus of the Baltimore and Ohio railroad	690, 000	.....	.....	550, 000	750, 000	.....	.....	450, 000
Western terminus of the Pennsylvania Central railroad	890, 696	.....	.....	1, 622, 893	850, 000	.....	.....	1, 800, 000
Dunkirk	1, 095, 365	112, 061	149, 654	10, 173	620, 230	86, 905	191, 035	11, 789
Buffalo	2, 846, 022	30, 435, 831	24, 288, 627	3, 849, 620	2, 978, 089	21, 240, 348	20, 086, 952	8, 385, 945
Suspension bridge	875, 000	.....	.....	2, 750, 000	775, 000	.....	.....	1, 500, 000
Oswego	235, 382	10, 982, 132	4, 528, 962	1, 467, 823	115, 292	8, 785, 425	2, 676, 367	2, 364, 169
Ogdensburg	576, 394	689, 930	1, 120, 176	18, 865	475, 465	600, 299	1, 057, 299	25, 000
Cape Vincent	48, 576	316, 403	249, 369	47, 047	24, 236	206, 856	81, 698	15, 730
Montreal	1, 174, 602	8, 534, 172	2, 661, 261	426, 387	1, 193, 108	5, 509, 119	862, 534	1, 405, 478
Rochester	1, 000	150, 000	.....	6, 622	1, 500	85, 000	.....	25, 000
Total	8, 433, 037	51, 220, 529	32, 998, 049	10, 749, 430	7, 782, 920	36, 513, 952	24, 955, 885	15, 983, 111

THE GRAIN TRADE OF THE ST. LAWRENCE RIVER.

The grain trade of the St. Lawrence river has of late years attracted the attention of the leading statesmen and merchants, both of Canada and the United States. The construction of the Welland canal, and the completion of the various Canadian canals around the rapids of the St. Lawrence, provided an uninterrupted water-course from the head of Lake Michigan to Montreal and Quebec.

For many years the trade of this river was confined chiefly to the products of Upper Canada, but the increased production of grain in the northwestern States during the past ten years has so crowded the other avenues to the seaboard that the trade has naturally sought an outlet to the ocean by the St. Lawrence.

The following table shows the receipts of flour and grain at Montreal during the past three years:

Receipts of flour and grain at Montreal for three years.

Articles.	1861.		1862.		1863.	
	By Grand Trunk railway.	By Lachine canal.	By Grank Trunk railway.	By Lachine canal.	By Grand Trunk railway.	By Lachine canal.
Flour, barrels	336, 466	758, 873	402, 221	772, 381	457, 926	735, 182
Wheat, bushels	1, 187, 708	6, 550, 376	754, 445	7, 779, 727	539, 020	4, 970, 099
Corn, "	.....	1, 565, 477	.....	2, 661, 261	1, 173	861, 361
Barley, "	6, 931	125, 818	11, 876	225, 054	25, 447	273, 525
Oats, "	18, 292	104, 107	13, 194	93, 598	51, 251	352, 721
Rye, "	.....	24, 710	.....	82, 665	.....	33, 269

The following table shows the exports of flour and grain from Montreal during the past three years:

Exports of flour and grain from Montreal for three years.

Articles.	1861.	1862.	1863.
Flour, barrels	605, 942	597, 477	526, 155
Wheat, bushels	5, 584, 727	6, 500, 796	3, 741, 146
Corn, "	1, 477, 144	1, 774, 546	638, 281
Oats, "	276, 375	.....	3, 086, 835
Barley, "	239, 829	652, 144	709, 239
Peas, "	.....	.....	754, 414

As demonstrative of the nature of the receipts of grain at Montreal, it is necessary to state, that of the 4,970,099 bushels of wheat received during 1863, 1,961,649 bushels were from Milwaukie, and 1,079,772 bushels from Chicago. Of the corn received in 1863, nearly all of it was imported from Chicago, as there was shipped from that port for Kingston not less than 698,375 bushels, where it was transferred to barges and towed down the St. Lawrence to Montreal. Of the exports of grain at Montreal, the oats and barley are nearly all shipped to the United States.

The chief grain-shipping point on the Canadian side of Lake Ontario is Toronto, wherefrom the following table shows the shipments of flour and grain in 1863, with the ports of destination:

Shipments of flour and grain from Toronto in 1863.

Shipped to—	Flour.	Wheat.	Barley.	Peas.
	Barrels.	*Bushels.*	*Bushels.*	*Bushels.*
Oswego	14,740	208,001	288,108	40,186
Cape Vincent	.....	22,186	.....	.....
Rochester	600	2,100	.....	.....
Ogdensburg	18,532	6,652	.....	.....
Montreal	85,256	353,280	.....	16,963
Quebec	750	.....	10,978	.....
Other ports	9,664	200,043	.....	.....
Total in 1863	129,552	852,262	299,086	57,149
Total in 1862	106,219	933,275	219,147	47,382

Besides the above, there were shipped 92,936 bushels of oats—all to Oswego.

From the foregoing table it will be seen that of the 1,949,193 bushels of flour and grain of all kinds exported from Toronto, only 811,251 bushels were shipped to Canadian ports.

So important has the grain trade of the northwestern States become to the Canadians, that it has stimulated the construction, by English capitalists, of the Great Western railway from Detroit river to Lake Ontario and Niagara river, and the Grand Trunk railway from Detroit river to Quebec and Portland. To cheapen the transportation of grain, lines of propellers are established, and constantly run during the season of lake navigation, between Lake Michigan ports and Ports Sarnia, and Collingwood, on Lake Huron, where produce is transferred to cars, which are run across from Lake Huron to Lake Ontario, where it is again transferred to propellers or sailing vessels, which ply, in connexion with the railroads, between Montreal and Lake Ontario ports. Besides the advantage of cheapening freights, it is claimed that this repeated overhauling of grain, particularly in hot weather, is highly effective in preventing it from becoming heated or musty, as is often the case during hot weather, when it is confined closely in the holds of vessels during long passages.

DIRECT TRADE BETWEEN THE LAKES AND EUROPE.

During the past ten years various attempts have been made to establish a direct European trade with the lakes, *via* the St. Lawrence river; but it has been more successfully prosecuted in the lumber and stave than in the grain trade. The first direct shipment of grain from the lakes to Europe took place in 1856, when the schooner Dean Richmond cleared at Chicago for Liverpool with a cargo of wheat; but, of about 125 vessels which have cleared from lake ports for the Atlantic ocean since that date, only three or four have been loaded with grain. This failure to establish a direct European grain trade, has been discouraging to merchants, and has led many to despair of ultimate success; but the chief obstacle seems to be the unsuitableness for ocean navigation of the light-draught schooners which are necessarily employed in order to cross the St. Clair flats and pass through the canals. The want of return cargoes to the lakes has also been a serious detriment to the direct trade, and it is only in seasons of extreme depression in the lake trade, that vessel-owners are willing to embark in such long voyages.

To foster the establishment of a direct European grain trade, and also to provide more enlarged facilities for the transportation of the rapidly-increasing products of the west, a variety of measures are being agitated by commercial associations all over the country, as well as by the legislatures of New York and Canada. The following are some of the leading propositions:

First. The construction of a ship canal from Georgian bay to Toronto, *via* Lake Simcoe, so as to pass vessels of one thousand tons burden from Lake Huron to Lake Ontario.

Second. The construction of a ship canal from Georgian bay to the Ottawa and French rivers, *via* Lake Nipissingue, so as to pass vessels of one thousand tons burden from Lake Huron to the St. Lawrence river.

Third. The enlargement of the Welland canal, so as to pass vessels of the size mentioned above.

Fourth. The construction of a ship canal around the Falls of Niagara, so as to pass large vessels of deep draught from Lake Erie to Niagara river, and thence to Lake Ontario and the St Lawrence river.

Fifth. The enlargement of the New York canals.

Sixth. The construction of a ship canal from Chicago, on Lake Michigan, to Lasalle, on the Illinois river, and the deepening and improvement of that river, so as to allow steamers and vessels of deep draught to pass from the Mississippi river to Lake Michigan.

Seventh. The improvement of Fox river, in Wisconsin, so as to connect the Upper Mississippi with Lake Michigan, and allow the passage of vessels carrying large cargoes of grain and other produce from Minnesota and northern Wisconsin.

Eighth. The construction of a ship canal from the head of Lake Michigan to Lake Erie, so as to avoid the long passage around the peninsula of Michigan, *via* the Straits of Mackinaw.

Of the four projects connecting Lake Ontario with Lakes Erie and Huron, the three first are Canadian propositions. The accomplishment of either of the two first—the Georgian bay and Toronto or the Ottawa ship canal—would greatly shorten the distance from Lake Michigan to Montreal, and also avoid the St. Clair flats, which would have to be deepened and improved so as to enable ocean vessels of deep draught to pass.

It is feared by many in New York, however, that the construction of a ship canal to the St. Lawrence river would damage the canal interests of that State by diverting a large portion of the grain trade of the lakes from the Erie canal; but when it is considered that the production of grain in the northwestern States increased from 218,463,583 bushels in 1840 to 642,120,366 bushels in 1860, and that of the eight food-producing States west of the lakes, embracing an area of 262,549,000 acres, only about 52,000,000 acres were under cultivation in 1860, and that 26,000,000 acres of that have been broken since 1850, no fears need be entertained that any of the outlets to the ocean will be unoccupied to the extent of their capacity. The only fear is, that we will not keep pace with the increased production by the provision of increased facilities of transportation.

THE RECIPROCITY TREATY AND THE GRAIN TRADE.

By the operation of the reciprocity treaty there is a free interchange of the grain products of Canada and the United States, and the free use of the St. Lawrence river for navigation is accorded to the latter. Since this treaty came into effect the grain trade between the two countries has been greatly increased. The following table shows the value of the agricultural products imported into the United States from Canada, and into Canada from the United States, from 1850 to 1861, inclusive:

Value of imports of agricultural produce into the United States from Canada, and into Canada from the United States.

Years.	Value of imports into United States from Canada.	Value of imports into Canada from the United States.		Value of imports into United States from Canada.	Value of imports into Canada from the United States.
1850	$2, 706, 362	$427, 084	1856	$11, 864, 836	3, 809, 112
1851	1, 937, 283	676, 327	1857	7, 100, 413	5, 272, 151
1852	3, 277, 929	473, 137	1858	5, 740, 305	3, 385, 517
1853	4, 949, 576	668, 113	1859	6, 278, 351	4, 671, 882
1854	5, 295, 667	1, 500, 521	1860	10, 013, 799	4, 603, 114
1855	11, 801, 435	4, 972, 475	1861	9, 580, 165	5, 172, 588

According to the above table it is evident that, however much the people of the United States may have been benefited by the operations of the reciprocity treaty, it has been more advantageous to the Canadian than to the American agriculturist.

THE GRAIN TRADE OF THE MISSISSIPPI RIVER.

The grain trade of the Mississippi and Ohio rivers has, for upwards of a quarter of a century, occupied an important place in the commercial history of the United States. In the early part of the present century, before the era of canals and railroads, the tide of emigration forced itself into the valleys of those rivers and laid the foundations of what soon became large and flourishing settlements. Before Chicago, Milwaukie, and Toledo had existence, other than as small trading posts, Cincinnati, on the Ohio, and St. Louis, on the Mississippi river, were comparatively large towns, with a trade and commerce which attracted capital from all parts of the world. The Mississippi river was the natural outlet for this trade to the ocean, and New Orleans became at an early day the only exporting point for the grain products of the west.

The valley of the Ohio river, embracing the States of Ohio, Indiana, and Kentucky, was settled first, and the grain trade of that river proper is therefore the oldest. But the fertile lands of the river tier of counties in Illinois and Missouri soon attracted the attention of agriculturists, and the grain trade of the Mississippi river proper followed; and, as we have shown in a previous chapter, before steamboat navigation had made much progress, the grain was shipped chiefly in rude barges and carefully floated down the Mississippi to New Orleans, where it found a market, and was shipped to foreign ports. And even, at no distant date, all the western grain and flour which found a market in New York or New England was shipped to New Orleans in steamboats, and thence around the Atlantic coast in ocean ships.

The following is an exhibit of receipts of grain and flour at Cincinnati during the past eighteen years:

TABLE L.

Receipts of flour and grain at Cincinnati for eighteen years.

(Compiled from statistics of Cincinnati Chamber of Commerce.)

Years.	Flour, barrels.	Wheat, bushels.	Corn, bushels.	Oats, bushels.	Barley, bushels.	Rye, bushels.
1846	202, 319	435, 486	57, 245	106, 852	90, 225	85, 821
1847	512, 506	590, 805	896, 258	372, 127	79, 394	41, 016
1848	151, 518	570, 813	361, 315	194, 557	165, 528	24, 336
1849	447, 844	385, 388	344, 810	185, 723	87, 400	22, 233
1850	231, 859	322, 699	649, 227	191, 924	137, 925	23, 397
1851	482, 772	388, 600	489, 195	164, 238	111, 257	44, 308
1852	511, 042	377, 037	653, 788	197, 868	89, 994	58, 317
1853	449, 089	343, 649	723, 334	283, 251	226, 844	33, 670
1854	427, 464	408, 084	745, 455	427, 423	286, 536	29, 592
1855	342, 772	437, 412	845, 597	480, 178	204, 224	53, 164
1856	546, 727	1, 069, 468	978, 511	403, 920	244, 792	158, 220
1857	485, 089	737, 723	1, 673, 363	534, 312	381, 060	113, 818
1858	633, 318	1, 211, 543	1, 090, 236	598, 950	400, 967	64, 385
1859	558, 173	1, 274, 685	1, 139, 022	557, 701	455, 731	82, 572
1860	517, 229	1, 057, 118	1, 346, 208	894, 515	352, 829	131, 487
1861	490, 619	1, 129, 007	1, 340, 690	838, 451	493, 214	157, 509
1862	538, 215	2, 174, 924	1, 780, 292	1, 338, 950	323, 884	247, 187
1863	619, 710	1, 741, 491	1, 504, 430	1, 312, 000	336, 176	138, 935

The following table shows the receipts of flour and grain at St. Louis during the past fourteen years:

TABLE M.

Receipts of flour and grain at St. Louis for fourteen years.

(Compiled from statistics of St. Louis Chamber of Commerce.)

Years.	Flour, barrels.	Wheat, bushels.	Corn, bushels.	Oats, bushels.	Rye, bushels.	Barley, bushels.
1850	306,463	1,794,721	.....	.....	.....	.....
1851	184,715	1,712,776	1,457,748	888,423	.....	.....
1852	132,050	1,645,387	755,258	848,850	.....	91,662
1853	201,487	2,075,872	1,048,120	1,235,000	28,894	124,004
1854	192,945	2,126,272	1,784,189	1,777,873	.....	114,160
1855	226,450	3,312,854	2,947,285	1,912,974	111,526	126,128
1856	323,446	3,747,224	938,546	1,132,932	44,210	127,210
1857	573,664	3,281,410	2,286,828	1,217,887	36,810	216,574
1858	387,451	3,835,759	892,104	1,690,010	45,900	290,350
1859	488,700	3,568,732	1,639,579	1,267,624	123,056	242,262
1860	443,196	3,555,878	4,209,794	1,789,234	158,974	291,130
1861	484,000	2,654,738	4,515,040	1,735,157	117,080	201,484
1862	647,419	3,850,336	1,734,219	3,135,043	253,552	290,925
1863	689,241	2,703,378	1,299,850	2,771,848	126,700	195,650

As New Orleans is the only exporting point for the grain carried down the Mississippi river, the following table is appended, showing the receipts at that port for thirty-one years:

TABLE N.

Receipts of flour and grain at New Orleans for thirty-one years.

(Compiled from statistics of New Orleans price current.)

Years.	Wheat, bbls. and sacks.	Flour, barrels.	CORN.		Oats, bbls. and sacks.
			Shelled, sacks.	In ear, barrels.	
1832	.....	221,283	7,490	71,322	1,784
1833	.....	233,742	65,620	91,473	9,029
1834	.....	345,831	62,137	97,774	18,026
1835	10,038	286,534	162,346	262,410	14,264
1836	1,090	287,232	287,182	255,975	18,132
1837	6,422	253,500	369,090	194,013	32,180
1838	2,027	320,208	177,751	270,924	25,514
1839	17,280	439,984	338,795	161,918	38,708
1840	63,015	482,523	278,358	152,965	42,885
1841	2,621	496,194	268,557	168,050	54,250
1842	138,886	439,688	338,709	240,675	63,281
1843	118,248	521,175	427,552	255,058	120,430
1844	86,014	502,507	360,052	165,354	130,432
1845	64,759	533,312	390,964	139,686	144,262
1846	403,786	837,985	1,166,120	358,573	269,386
1847	833,649	1,617,675	2,386,510	619,576	588,337
1848	149,181	706,958	1,083,465	509,583	467,219
1849	238,911	1,013,177	1,705,138	295,711	266,559
1850	57,508	591,986	1,114,897	42,719	325,795
1851	88,797	941,106	1,298,932	42,526	479,741
1852	64,918	927,212	1,397,132	163,008	463,273
1853	47,238	808,672	1,225,031	17,620	446,956
1854	184,943	874,256	1,740,267	48,404	586,451
1855	31,288	673,111	1,110,446	10,701	439,978
1856	869,524	1,120,974	1,990,995	41,924	587,180
1857	775,962	1,290,597	1,437,051	14,719	393,171
1858	401,275	1,538,742	1,289,665	62,405	568,649
1859	29,585	1,084,978	759,438	5,000	249,736
1860	13,116	965,860	1,722,039	36,092	659,550
1861	71,678	1,009,201	3,833,911	122,644	552,738
1862	36,411	281,645	315,652	22,216	35,348

The following table shows the exports of flour and grain from New Orleans to foreign countries for a series of years:

TABLE O.

Exports of flour and grain from New Orleans to foreign ports.

(Compiled from official documents.)

Year ending June 30—	Flour, barrels.	Wheat, bushels.	Corn, bushels.	Rye, oats, &c., value.
1856	251,501	1,096,733	2,941,711	$67,892
1857	428,436	1,353,480	1,034,402	2,172
1858	474,906	596,442	1,134,147	885
1859	133,193	107,031	111,522	1,029
1860	80,541	2,189	224,382	1,943
1861	21,767	3	69,679	971

A comparison of the foregoing tables with those illustrating the grain trade of the lakes and of the Erie canal, demonstrates the revolution that has taken place in the grain trade of the west. The trade and commerce of the Mississippi river, so far as relates to grain and other produce, has not kept pace with the development of the territory through which it runs, and for which it is the natural highway to the ocean. The old theory that "trade will follow the rivers" has in some respects been disproved. The artificial channels of trade, canals and railroads, have tapped the west and carried its products eastward across the continent. The grain trade of Illinois, Iowa, Missouri, Wisconsin, and even the greater portion of that of Indiana and Ohio, have been diverted almost entirely to the lakes, the Erie canal, the St. Lawrence river, or the six great trunk lines of railroads that lead from the heart of the west to the seaboard. The Mississippi river has been bridged at Rock island, and another bridge is just being completed at Clinton, farther up. The lines of railroads which extend from Lake Michigan to this river are being pushed forward with great rapidity to the Missouri river, and into Kansas and Nebraska, and there is every probability that the grain of these frontier States will also find a market by way of the lakes. Even now grain is being received t Chicago from Kansas and Nebraska *via* the Missouri river, the Hannibal and St. Joseph railroad, and the Chicago, Burlington, and Quincy railroad. As an outlet to the ocean for the grain trade of the west, the Mississippi river has almost ceased to be depended upon by merchants. There are several reasons for this change:

First. The risk of damage to grain and flour that may be shipped during the summer months through the southern latitudes of the Gulf of Mexico, as compared with the transportation by the northern routes, viz., around the lakes and through the Erie canal, or *via* the St. Lawrence river. This applies particularly to corn, which is more liable to become heated than any other kind of grain.

Second. The uncertainty of river navigation during the summer months, in droughty seasons, and the vexatious and ruinous delays that are apt to occur in consequence.

Third. The speedy transportation by railroads and canals on the northern route, as compared with transportation by river to New Orleans, and thence by ocean ships around the Atlantic coast.

Fourth. The superior advantages which New York during the past ten or fifteen years has attained as an importing point, as compared with New Orleans, thus offering greater inducements to ocean shipping to trade with New York.

Fifth. The rapid growth of the cotton, sugar, and tobacco trade at New Orleans, to the exclusion of almost every other branch of trade and commerce.

A glance at the table of receipts of grain at New Orleans during the six years previous to the blockade of the Mississippi river, as compared with the great movement of grain during the same period eastward by the Erie canal and the St. Lawrence river, shows clearly the diversion which has taken place in this trade. The entire receipts of grain in New Orleans in 1860 amounted to only

5,198,927 bushels, while the receipts during the same year at the single port of Chicago amounted to about fifty million of bushels, while Milwaukie received about ten million. The exportation of grain from New Orleans to foreign countries had also fallen off year by year, till in 1860 the entire amount exported was only 2,189 bushels of wheat, 224,382 bushels of corn, and rye, oats, and small grain to the value of $1,943, while during the years 1860–'61 there were exported from New York 23,859,147 bushels of wheat, 9,268,729 bushels of corn, and 2,728,012 barrels of flour.

To demonstrate still further the change in the grain trade from the southern to the northern route, the following table is appended, showing the exports of flour and grain from Cincinnati during the four years preceding the blockade of the Mississippi river, with the amount shipped by the southern and the amount shipped by the northern route

TABLE P.

Shipments north and south from Cincinnati for four years.

Articles.	1857–'58.		1858–'59.		1859–'60.		1860–'61.	
	Shipped south.	Shipped north.	Shipped south.	Shipped north.	Shipped south.	Shipped north.	Shipped south.	Shipped north.
Flour, barrels	162,565	445,650	17,569	544,570	92,919	385,389	158,592	268,033
Wheat, bushels	30,446	601,214	1,182	270,531	11,341	310,154	47,801	477,264
Corn, sacks	1,927	17,225	3,707	24,796	23,640	25,227	105,332	21,947

It is also to be noted, that of the amount shipped south, as given in the above table, but a very small proportion reached New Orleans. For instance, in the year 1860, of the 478,308 barrels of flour exported from Cincinnati, only 35,146 barrels were shipped to New Orleans, the balance having been shipped north or to other ports on the river between Cairo and New Orleans.

It is worthy of mention, however, that, although the export grain trade of New Orleans has not kept up with the production of the valley of the Mississippi, the local river trade greatly increased in consequence of the extraordinary demand by cotton and sugar planters, who were every year becoming more dependent upon the northwestern States for their supplies of breadstuffs.

THE GRAIN TRADE OF THE UPPER MISSISSIPPI.

The grain trade of the Upper Mississippi is a very important branch of northwestern commerce. The rapid development during the past five years of the resources of northern Iowa and Wisconsin, and of Minnesota, has built up large towns on the river, such as McGregor, Winona, Hastings, and St. Paul, on the Mississippi, and Stillwater and Hudson, on the St. Croix, all of which are depots for the grain of the surrounding territory, which is shipped in steamboats and barges down the Mississippi river to Lacrosse, Dunleith, and Fulton, where it is transferred to railroads and shipped to Lake Michigan ports. It is estimated that during 1863 the receipts of wheat alone, for the Upper Mississippi river, at Lake Michigan ports, was not less than six millions of bushels

THE GRAIN TRADE OF CALIFORNIA.

One of the most wonderful features of the grain trade is its growth and development on the Pacific coast. California, which but a few years since was entirely dependent upon western South American ports for a supply of breadstuffs, appears now on the records as a grain-exporting State, and almost every mail from the Pacific conveys intelligence of one or more ships, loaded with wheat, having sailed from San Francisco for Liverpool or London. Riches, other than gold, have been found on the soil, as the excellent quality and heavy yield of California wheat and other cereals, fully attest.

The following table shows the exports of flour and grain from the port of San Francisco to foreign countries from the year 1856 to 1861, inclusive:

TABLE Q.

Exports of grain and flour from San Francisco to foreign countries.

(Compiled from official documents.)

Year ending—	WHEAT.		FLOUR.		RYE MEAL.		RYE, OATS, ETC.
	Bushels.	Dollars.	Barrels.	Dollars.	Barrels.	Dollars.	Dollars.
June 30, 1856	33,088	36,748	114,572	1,070,121	3,950	19,750	91,001
1857	35,932	64,683	43,122	376,837	.....	.....	35,839
1858	6,564	12,272	6,683	84,086	.....	.....	335,880
1859	9	11	22,580	236,568	.....	.....	646,581
1860	948,220	449,057	57,820	380,005	.....	.....	339,902
1861	2,379,617	2,550,820	186,455	1,001,894	.....	.....	316,299
1862	.....	.....	.....	.....	.....	.....	.....
1863	.....	.....	.....	.....	.....	.....	.....

VINEYARDS AND WINE MAKING IN THE UNITED STATES.

In the first settlements on this continent, the grape-vines found indigenous, were esteemed among the most valuable productions. In "Force's Collection of Historical Tracts"—1620 to 1760—frequent allusion is made by the writers to our native grapes and to the wine made from them. According to Sir John Hawkins, wine was made in Florida in 1564. A vineyard was established in Virginia in 1620, also in 1647. In 1651 premiums were offered in Virginia for the production of wine. In 1664 a vineyard was planted near New York by Paul Richards, and in 1683 and 1685 attempts were made at Philadelphia, but failed. At a later period Mr. Tasker, of Maryland, and Mr. Antil, of New Jersey, were more successful. These, however, were mere experiments. There is no evidence that wine was produced in any quantity worth naming, until the close of the last and the beginning of the present century. About this period vineyards were planted in various parts of the Union, near the cities of New York and Philadelphia; near Lexington and Glasgow, Kentucky; Cincinnati, Ohio; Vevay, Indiana; York and Harmony, Pennsylvania; Baltimore, Maryland; and in some parts of North and South Carolina, Georgia, and Virginia. These plantings were generally in small vineyards of one to five acres, and, unfortunately, most of them with *foreign grapes*, which, proving to be unsuited to our climate, resulted in failures. Those who planted with native grapes did better. In North and South Carolina the "Scuppernong wine," from a native grape, soon became famous, and was praised as a home production worthy of American patronage.

At Vevay, Indiana, Dufour and his Swiss settlers adopted the "Schuylkill Muscadel," a Pennsylvania grape, then erroneously called the "Cape." This grape was found to suit the climate, and made a red wine, that soon acquired a fair reputation, and laid the foundation for wine-growing in the west, with the better varieties that succeeded it.

The celebrated traveller, Volney, "tasted wine made from native grapes at Gallipolis, Ohio, in 1796," and Dufour, in 1799, "found a Frenchman at Marietta, Ohio, who made a few barrels of wine every year from grapes collected in the woods, equal to the wine made near Paris." Dufour further remarks: "None of the different and numerous trials which were made in several parts of the United States that I visited in 1794, were found worthy the name of vineyards." "I went to see all the vines growing that I could hear of, even as far as Kaskaskia, on the Mississippi, where I was informed the Jesuits had planted a vineyard shortly after the first settlement of the country, but that the French government had ordered it to be destroyed, for fear that vine culture might spread in America and hurt the wine trade of France." "I found only the spot where that vineyard had been planted, in a well-selected place on the side of a hill, under a cliff to the northeast of the town. No good grapes were found there or in any gardens of the country."

Dr. Daniel Drake, in an address on "The Early Physicians, Scenery, and Society of Cincinnati," states that "Third street, running near the brow of the upper plain, was on as high a level as Fifth street is now. The gravelly slope of that plain stretched almost to Pearl street. On this slope, between Main and Walnut, a French Political exile, M. Mennesieur, planted, in the latter part of the last century, a small vineyard. This was the beginning of that cultivation for which the environs of that city have since become so distinguished. I suppose this was the first vineyard cultivation in the valley of the Ohio." The well-known naturalist, F. A. Michaux, in his travels through the United States in 1802, "visited the vineyard near Lexington and found but one variety of grape—a native, doing well, the foreign mildewed." The foregoing extracts afford a fair sample of the pioneer efforts in vineyard culture in the west; they were much like those in the east, and wherever foreign vines were planted disappointment and loss resulted. In the south, owing to its genial climate, the experiments were more successful, but most so with native vines. In 1812 I was first cheered by the sight of a vineyard. It was on the south side of a hill at Rapp's German settlement of Harmony, in Butler county, Pennsylvania. The grapes planted were principally native varieties, the most of them "Schuylkill." Five years later I visited the vineyard of the Swiss colony, at Vevay, Indiana, where the same grape was the favorite. At the former the vines were planted in 1808, at the latter in 1806. The product was a red wine, resembling claret, but rather too harsh for the American palate. Still it was received with favor as a home production, giving promise of great results in the future.

I now come to a period when the second class of pioneers in this cultivation were more fortunate than their predecessors, and, with other grapes, produced better wines. About the year 1820 Major John Adlum, of Georgetown, D. C., first brought the Catawba into notice as a wine grape, and Thomas McCall, of Georgia, Mr. Herbemont, and other gentlemen of the south, the Warren, Herbemont, Madeira, and other varieties which have since proved so valuable.

To Major Adlum belongs the honor of introducing the Catawba, and so high was his appreciation of this grape that he wrote to Mr. Longworth, of Cincinnati, that he believed he had conferred a greater favor on his country than if he had paid off the national debt; in which, after a trial of the grape for wine, Mr. Longworth agreed with him.

The memory of the late Nicholas Longworth, of Cincinnati, will ever be held in the highest esteem by the wine-growers of our country, as he was the father of successful vine culture in the west. By a large expenditure in money in his various experiments with both foreign and native grapes, during a period of forty-three years, he at last succeeded in producing sparkling and still wines highly creditable to himself and the country, and the practical knowledge he acquired from year to year was liberally made known through the public prints for the benefit of all.

The late John J. Dufour, of Vevay, Indiana, is also entitled to the grateful remembrance of the people of the United States for his early and persevering efforts in the cultivation of the vine in this country of his adoption. For thirty years succeeding the introduction of the Catawba grape, the large emigration of Germans into the Ohio valley, many of them from the wine districts on the Rhine, furnished practiced and willing vine-dressers, who were glad to have the opportunity of trying their skill in this new country with a grape so promising. Numerous vineyards were planted in the western States, in localities supposed to be favorable, especially in the vicinity of Cincinnati, and in 1850 Catawba wine, produced in hundreds of thousands of gallons, had acquired a high reputation as a rival of Rhenish wine, and became an article of export to our eastern cities. The cultivation had spread over all the western and southwestern States, and we thought then, as we do now, that wine-growing would eventually be ranked amongst our most important agricultural interests. This the next generation may possibly realize.

Vineyard culture in the United States may now be considered as fairly established. Wine is made in thirty of the thirty-four States of the Union, of different qualities of course, and with varied success. As to its future production in quantity, I should name, first, California; second, the mountainous districts of the southern States, as most favorable on account of the climate; third, the Ohio and Mississippi valleys; fourth, the middle States; and last, the eastern. As to quality, the best samples have

been found in Georgia and the Ohio valley. The impression is, that in the middle and eastern States the climate is too cold to elaborate sufficient saccharine matter in the grape to make a wine that will keep without the addition of sugar. But this may prove a mistake—new varieties may yet be produced to suit each section of our country where the grape is grown. They are now numbered by hundreds, and new hybrids are annually added to the lists. After all our experience during the last seventy years, vine culture in the United States is but yet in its infancy, and we have much to learn. The few millions of gallons which we produce annually, are as nothing when compared to the nine hundred millions of France, or the three thousand millions of all Europe. The vineyards of Europe are estimated at twelve millions of acres. We have far more grape territory than that in the United States; but our climate, with the exception of California, is less equable. In California alone,it is stated, there are five millions of acres well adapted to grape culture. Here is something to reflect upon, and to give hope for the future.

CULTIVATION.

Vineyards are usually planted on hills, or rolling uplands; such positions are chosen on account of the natural drainage, which is considered essential. Porous soils are preferred to stiff clay, or such as are retentive of water. No trees should be permitted to grow within one hundred feet of the vineyard, nor should any crop be cultivated in it, as the vine is a selfish plant, and demands all the ground for its own use. The ground is prepared for planting by trenching with the spade two feet deep, or by breaking up with a subsoil and common plough 18 or 20 inches; the latter is much the cheapest, and always adopted where the situation of the vineyard permits. In planting the vines, the distance apart in the rows appears to vary in different localities. Around Cincinnati and in the Ohio valley, 3 by 6 is the usual distance; on the shores of Lake Erie, 6 by 8, and 8 by 8; and in California, 8 by 10 is recommended as the proper distance. The object in this country, where labor is dear, is to cultivate with the plough where it can be used, and to avoid the spade, which is expensive. Vineyard-planting is a system of dwarfing the vine, but with our long-jointed and rampant-growing native vines it may be an error to plant too close, or to prune too severely. Our European vine-dressers, accustomed to short-jointed vines, naturally fall into that error here, but they are now correcting it.

The method of training also varies with localities. In the Ohio valley and the southern States the single stake to each vine, and the bow system, is adopted. On the lake shore, and in California, the trellis is used, the vines being trained on it horizontally.

The estimated average annual yield of good vineyards in the west is about that of France—200 gallons to the acre. In the south they claim 500, and in California 800; these latter I consider too high. A bushel of grapes—fifty pounds—will make three and a half gallons of good wine, and a half gallon inferior. In a mere sketch like this article, it is only intended to impart general information on the subject of which it treats; the reader is therefore referred for special directions as to setting out the vines, spring and summer prunings, cultivating the ground, and securing the crop, to the several treatises on grape-culture and wine-making recently published. But I may remark, in brief, that a free exposure to the wind, with the bunches of grapes sheltered from the hot sun by the leaves of the vine, tying neatly to the stake or trellis, a judicious shortening in of superfluous branches, and the keeping the ground cultivated and free from weeds, is considered essential.

Disease, insects, and frost.—The grape, like other fruits, has its enemies. The most destructive of these is the mildew or rot. Was it not for this disease the Catawba would be immensely profitable; but of late years, in the Ohio valley, it has destroyed from one-fifth to four-fifths of the crop in many vineyards, and discouraged some persons from planting that fine grape. A sudden change of weather from hot to cold when the vine is in rapid growth, and the seed in the berries about hardening, is sure to produce rot. A free under-drainage—either natural or artificial—and a full exposure to the wind, will in part prevent it. No system of pruning or cultivation has yet proved a sufficient remedy in vineyards. Vines trained against the side of a house, and under cover of the eaves, seldom, if ever, rot. The disease probably results from atmosphoric causes, as the rust in wheat.

Insects have not as yet been found very injurious, but the careful vine-dresser will watch closely, and permit none to get colonized in his vineyard. The frost in some localities kills the young shoots of the vine in April, or early in May, but the twin or latent bud will put out, and yield about half a crop. To prevent serious injury by hail, let the bunches of grapes be well sheltered by the leaves of the vine, which will also prove a protection from the hot sun.

VARIETIES OF GRAPES FOR THE VINEYARD.

These are now quite numerous, and every year adds more to the list. It will only be necessary to name a few of the most popular varieties, and—

1. *Catawba.*—Nine-tenths of all our vineyards in the west and southwest are planted with this fine grape. With all its liability to rot, it continues a favorite.

2. *Delaware.*—This hardy and delicious table grape promises to rival the Catawba for wine. It is becoming popular with some of our best cultivators. The wine is light and delicate, and preferred to the Catawba by many good judges. The Delaware is less subject to rot than that variety.

3. *Herbemont* makes an excellent wine, but the vine is not hardy enough to be much planted.

4. *Norton's Seedling.*—A hardy, free-growing vine, but little affected by rot, makes a rich red wine like Burgundy, and is becoming quite popular.

5. *Schuylkill.*—This old favorite of sixty years ago is now but little planted. The wine resembles claret when well made, but the vine bears light crops. It is almost free from rot.

6. *Isabella.*—Another favorite of former years that is now but little cultivated for wine. It is deficient in saccharine matter to make still wine that will keep without adding sugar to the must or juice; but the sparkling wine from it is delicious.

The Concord, Hartford Prolific, and some of Rogers's hybrids, appear to suit our climate, and to be free from disease, but are not yet fairly tested for wine. Grapes of recent introduction in high credit for northern cultivation are the *Iona*, and *Adirondack*, natives of the State of New York, and the *Creveling*, a native of Pennsylvania. In the south, in addition to the Catawba, the Warren is largely cultivated, and the Scuppernong still holds the favorable reputation it acquired sixty years ago. Other varieties are being tested which it is unnecessary to enumerate here. The varieties in the vineyards of California are said to be foreign or of foreign origin. I have no means of describing or even naming them.

WINE-MAKING.

This process is as simple as making cider. The bunches of well-ripened, selected grapes, are mashed by passing through a pair of wooden rollers in a small grape-mill, or by a beetle in a barrel; then poured into the press and the juice extracted. This "must," as it is termed, is put into a clean cask to ferment. A few inches of space is left to allow room for fermentation, and a tin siphon is placed tight in the bung-hole, with one end in a bucket of water, through which the carbonic acid gas escapes, thus preventing a contact with the air from injuring the new wine. In ten days or two weeks the fermentation ceases; then fill up the casks and drive the bungs tight. In March rack off the wine into clean casks. A second but slight fermentation will take place in May, when the bungs should be loosened until it subsides; then fill up the casks and tighten the bungs. The wine is now made, and in autumn will be fit to bottle. The only art in preserving the wine sound is to keep it free from the air by filling up the casks and tightening the bungs every two or three weeks. So important is this, that in Europe they have a quaint proverb: "A man might as well forget to kiss his wife on coming home, as to leave a vacancy in his wine-cask," implying that the omission would turn both sour.

From the refuse grapes, and the last pressing of the good ones, an inferior wine is made by the addition of sugar, and sold at half price. The lees of the wine and the pomace of the grapes are distilled for brandy, which, in three or four years, compares favorably with foreign.

The pride of the wine-grower is to make a good *natural wine* from the pure juice of the grape, without the artificial appliances of sugar or spirits. And, if this "must" or juice weighs over 80° (or 1.080) by the areometer or saccharine-scale, it will do so; if not, then loaf sugar, dissolved in water,

must be added before fermentation. Catawba "must" averages 86°; Isabella, 72°. This is the product of the wine farmer who only makes "still wines."

Sparkling wines are made by the wine merchant or vintner, who purchases the new wine before its second fermentation, fines and bottles it, and, by placing it in deep, arched sub-cellars, usually twenty-five feet under ground, and letting it remain there from fifteen to eighteen months, is enabled to prepare it for market, with the fermentating principle so subdued as not to endanger the bursting of the bottle. Sirup of rock-candy is added to sweeten it, and sometimes a spoonful of brandy to each bottle, to strengthen it. To make this wine right and profitably requires a large capital, and liberal outlays in preparation. This showy and popular wine sells for about double the price of still wines. The great art in making *good* wine is to have the grapes well ripened, and all unripe or imperfect berries picked from the bunch before pressing. The press, casks, and vessels should be perfectly clean. Then, with a good cellar, and the casks kept bung-full and tight, there is no danger. The grapes are not stemmed, the *tannin* in the stems being useful in clearing the wine.

To the foregoing views of Mr. Buchanan, we add the following statement of ex-Governor Downey, of California, on the culture of the vine in that State:

"In the tier of counties extending south from Santa Cruz to the Mexican boundary the grain crop is precarious, the seasons being uncertain, and the wheat subject to rust. Stock-raising and the culture of the vine are the chief employment of the husbandman. The number of vines now bearing in this State is about 4,500,000, and, if well attended, these will yield 4,500,000 gallons of wine; the capacity of our State for this product is beyond conception. The counties of Los Angeles and San Bernardino have now 2,000,000 vines; with increased supply of water for irrigation, they could be increased to 30,000,000. The grape generally cultivated, and as yet the best adapted, is that introduced by the Catholic missions. It is the same that is in general use in Spain, Madeira, and the Canary Islands, from which springs Xerez, or Sherry, and Madeira, or Teneriffe, altered somewhat by the change of climate and soil. There is less change in the process of wine making than in any other branch of modern agriculture, the same old process used hundreds of years since being yet followed by many, with as much advantage as by any modern innovation; and it is as simple as by a cider-mill and press. Our vines, up to the present, are free from disease. The average yield of a well-attended vineyard is 1,000 gallons to the acre, and the vine will bear vigorously until it reaches sixty years of age. One hundred acres of vineyard can be planted, the ground prepared, and attended with as little cost as the same extent of land planted in tobacco: deep ploughing once or twice, harrowing, and laying off the rows six feet apart each way. The cuttings are about two feet long, planted with aid of a crow-bar, and from four to six inches left above the surface. The third year will produce, and at the age of six years, produce profitably. The first year we irrigate frequently, in order to assist the rooting of the vine, and thereafter once or twice annually, according to the soil or relative moisture. I am induced to make these lengthy observations on the simplicity of vine culture from the fact that many are led to believe, from the dissertations and reports of agricultural societies, that the work of planting a vineyard on anything like a large scale must be a Herculean task. They suggest deep spading, (three feet,) and various composts, and a thousand and one fertilizers as adjuncts, which may, in their localities be necessary, but surely not in California, and it is very doubtful if they are in the vine region on the Atlantic side of the continent. Our process of irrigating is a never-failing source of fertility; the salts and earthy matter held in partial solution in running streams, stimulate and enrich the soil, and destroy, in a great measure, all insects and larvæ. It is this natural irrigation of the valley of the Nile that has made it yield its successive crops, from the remotest antiquity, without exhaustion. In this connexion, I would suggest to our farmers and gardners in the older States, that, when practicable, they should have one field at least that could be irrigated."

INFLUENCE OF RAILROADS UPON AGRICULTURE.

The first impression made on the popular mind by any great improvement in machinery or locomotion, after the admission of their beneficial effect, is that they will, in some way or other, diminish the demand for labor or for other machinery. Hence it was that in Europe the introduction of printing was denounced on account of its supposed tendency to diminish the employment of writers or copyists, and the associations of individuals against its employment, similar to the opposition subsequently manifested to the use of labor-saving machinery in manufactures. It was long before this prejudice could be overthrown, but the subject is now much better understood. It is now established, as a general principle, that machines facilitating labor increase the amount of labor required. This is done chiefly by cheapening the products of labor so that more can be consumed, and ultimately more labor employed. The introduction of cotton and wool machinery was followed by outbreaks of workmen against machinery; yet nothing is more certain than that hundreds of thousands of men and women are employed in the manufacture of cotton who would not have been if machinery had not cheapened cotton cloth so that it could be introduced into general use. So it might be assumed that the introduction of sewing-machines would at once throw many sewing women out of employment; but such is not the fact. Many more sewing women are now employed than there were before the sewing-machine was introduced. In the same way the influence of railroads was at first very much misconceived; even among civil engineers the vast power of steam and of cohesion on the tracks were not understood. On the completion of the Liverpool and Manchester railway, some of the ablest engineers laid it down as a settled principle that railroads would not be able to carry heavy freights, and their business must be confined to the carriage of passengers. It was also considered impracticable to ascend over fifty feet per mile with ordinary locomotives; as a consequence of this theory *inclined planes* were for several years made wherever the grade was over fifty feet. If this practice had continued, it must obviously have proved a great obstruction to the carriage of heavy freight. Time and inventive genius have happily overcome all these difficulties; but still, in this, as in other cases, there was an idea that the transportation of agricultural products would result in diminishing the number of horses, wagoners, and steamboats. Indeed, this would seem a natural, if not a necessary, effect of transporting immense quantities of agricultural produce by a machinery which did not before exist. The result, however, proves precisely the contrary. Horses have multiplied more rapidly since the introduction of locomotives than they did before; and even steamboats, on such rivers as the Ohio and the Mississippi, where the recently constructed railroads have been in direct competition with them, have continued to increase almost without interruption. Before we look at the general results of railroads on the agricultural interests, we will glance at their incidental connexion with the other means of transportation. Take, for example, the increase of horses in connexion with the increase of railroads.

The following is the number and increase of horses in the last twenty years, including mules and asses:

	No. of horses.	Increase.
In 1840	4,335,669	
In 1850	*4,896,050	12 per cent.
In 1860	*7,400,322	51 per cent.

Three-fourths of all the miles of railroad have been made since 1850; and we see that since then the increase of horses has been the greatest. If we pursue this inquiry a little further, we shall find that horses have increased the most in those States in which the greatest extent of railroads has been made since 1850. Take, for example, the number of horses employed in agriculture and for other purposes in the five great States of the west:

* Exclusive of 1,185,514 not employed in agriculture.

Number of horses employed in agriculture and for other purposes in the five great States of the west:

States.	1850.	1860.	Increase, per cent.
Ohio	466,820	753,881	61
Indiana	320,898	592,069	84
Illinois	278,626	724,138	160
Michigan	58,576	167,999	186
Wisconsin	30,335	145,584	380
Aggregate	1,155,255	2,383,671	106

In these five States there have been constructed since 1850 nearly nine thousand miles of railroad; and yet there we find this extraordinary increase in the number of horses. We do not present this as evidence that the construction of railroads necessarily augments the demand therefor, and therefore increases the number of horses, although we have no doubt that such is the case; but simply to show that railroads have not diminished one of the great elements in competing means of transportation. It must be recollected that only forty years ago the only means of transporting goods and products between the eastern and western States was by wagons, and that the business of transportation in this way was as much a business, on relatively as large a scale, as that of transportation by canal and railway is now. The first great change in this mode of transportation was by the New York and Pennsylvania canal; but the whole business of the canals in the first years of their introduction was small in comparison with that of the railroads now. Hence it seemed that railroads must diminish the number and importance of horses, but such was not the fact; and we shall see in this, as in the case of all animals, that railroads tend to increase their number and value. This is now an established principle, which we shall illustrate in regard to other domestic animals.

Although but slightly connected with the interests of agriculture, we may here state another fact, that since the introduction of railroads, the building and employment of steamboats on our interior rivers have also increased largely, so that, even where railroads have competed directly with them, the steamboat interest has continued to increase in value and importance. This has not been always, we admit, in direct proportion to the growth of the country, but enough to show that, even where competition was greatest, this interest has not been injuriously affected. More than double the number of steamers were built on the waters of the interior west in 1861 than were in 1850.

We advance these facts, not so much to show the direct and positive influence of railroads on agriculture, as to show that there is no interest of agriculture and commerce that railroads have injured, even, when upon the most plausible theories, such results were anticipated.

We now proceed to show the positive advantages which all departments of agriculture have derived from the construction of railroads. So great are their benefits that, if the entire cost of railroads between the Atlantic and western States had been levied on the farmers of the central west, their proprietors could have paid it and been immensely the gainers. This proposition will become evident if we look at the modes in which railroads have been beneficial, especially in the grain-growing States. These modes are, first, in doing what could not have been effected without them; second, in securing to the producer very nearly the prices of the Atlantic markets, which is greatly in advance of what could have been had on his farm; and, third, by thus enabling the producer to dispose of his products at the best prices at all times, and to increase rapidly both the settlement and the annual production of the interior States. A moment's reference to the statistics of internal commerce will illustrate these effects so that we can see the vast results which railroads have produced on the wealth and production of the country.

1. If we examine the routes and tonnage of the trade between the Atlantic cities and the central western States, we shall find some general results which will prove the utter incapacity of all other modes of conveyance to carry on that trade without the aid of railroads. Between Lake Erie on one

side and the Potomac on the other, the commerce between the east and west is altogether carried on by way of several great arteries, which are these, viz: the Erie canal, the Oswego canal, the Champlain canal, the Central railroad, the Erie railroad, the Pennsylvania railroad, and the Baltimore and Ohio railroad. There are no other great channels of conveyance between the east and the west, and in fact no other routes appear practicable. However large an amount of product or merchandise may be carried by the lakes, it must be shipped to or from Buffalo, Oswego, or Ogdensburg. However multiplied may be the routes by rail or canal, by which products may arrive at Buffalo, Pittsburg, Wheeling, or Parkersburg, all the freights carried over them going east must pass over these great routes. We have, therefore, the means of determining accurately the relative transportation by different routes and modes. The different modes are all reduced to two—canals and railroads. The proportion of tonnage on these several lines of conveyance, as reported in 1862, was as follows:

CANALS.

	Tons.
Erie canal	2,500,762
Oswego canal	852,920
Champlain canal	650,000
Aggregate	4,003,682

But, we must observe that the Oswego canal joins to the Erie canal, and its tonnage, arriving at or leaving Albany, is included in that of the Erie canal. In fact, the tonnage of the canals, which is counted at Albany, is only that of the Erie and the Champlain, and of the latter but a small portion goes to or from the west. We have at the utmost, then, the carriage on canals between the Atlantic cities and the west of 3,150,000 tons.

RAILROADS.

	Tons in 1862.
Pennsylvania railroad	1,792,064
Erie railroad	1,632,955
New York Central railroad	1,387,433
Baltimore and Ohio (estimated)	1,200,000
Aggregate tonnage of these lines	6,018,452

We observe that in 1862 the tonnage of the six great arterial lines of transportation between the east and west amounted to over nine millions of tons, of which only one-third were carried by water. We must recollect that this was the case when the Erie canal of New York had been enlarged and refitted with the express purpose of transporting the products of the west, and was supplied with five thousand canal-boats. It is evident, therefore, that railroads not only carry two-thirds of the freights to and from the west at the present time, but that such is the rapid increase of western products, and the surplus carried to Atlantic or foreign markets, that the time is near when all that can be carried by water will be but a small proportion of the whole. The transportation by wagons is no longer possible to carry the surplus products of the interior States to either foreign or domestic markets. In fine, in the absence of railways the cultivation of grain beyond the immediate wants of the people must cease, or the surplus perish in the fields. Such was exactly the state of things in the west before the general introduction of railroads. The great grain-fields of Ohio, Indiana, Illinois, and beyond the Mississippi, have been mainly cultivated because railroads made their products marketable and profitable. In one word, railroads did what could not have been done without them.

2. Railroads secured to the producer very nearly the prices of the Atlantic markets, which was greatly in advance of any price which could possibly be obtained in western markets. It might be supposed that if the carriage of a bushel of grain from Sandusky to New York was reduced from forty cents a bushel to twenty cents, the gain of twenty cents would inure, in part at least, to the consumer; but experience shows this is not the fact. This gain of twenty cents inures to the producer. In proof

of this it will be sufficient to adduce two or three well-known facts. The prices of flour and meat at New York (estimating them at the gold standard) have not been reduced in the least, notwithstanding the immense quantities of the products of grain imported into that city. On the other hand, the prices at Cincinnati, on the Ohio, have doubled, and in some articles, such as pork, have trebled. The great bulk of the gain caused by the cheapness of transportation has gone to the producer. This depends on a general principle, which must continue to operate for many years. The older a country is, the more civic and the less rural it becomes; that is, the greater will be the demand for food, and the less the production. The competition of the consumer for food is greater than that of the producer for price. Hence it is that Europe, an old country, filled with cities, makes a continual demand on this country for food. Hence it is that New England and New York, continually filling up with manufacturers, artisans, and cities, must be supplied with increased quantities of food from the interior west; and hence, while this is the case, prices cannot fall in the great markets. Hence it is that the cheapening of transportation inures to the benefit of the agricultural producer. New England consumes more than a million barrels of western flour. The transportation is cheapened a dollar per barrel; and thus, in New England alone, in the single item of flour, a million of dollars, net profit, is put into the pockets of the western farmer by the competition of railroads; for a large portion of this flour is carried over the Massachusetts Western railroad. It is entirely true that the manufacturer of New England shares, on his side, in the gain of cheap transportation; but we are here considering simply the influence of railroads on agriculture.

In the western markets the gain to the farmer is palpable in the enhanced prices of every article. At Cincinnati, in 1848 and 1849, (which was the beginning of the greatest railroad enterprises,) the average price of hogs was $3 per hundred. In 1860 and 1861 it was double that, and has continued to increase. This was a net gain to the farmers of Ohio alone of from three to four millions of dollars. In the entire west it was a profit of more than twenty millions on this single animal; for, if there were now no railroads, this product could not be carried to market except on foot, which would take away half the value. No further illustration of this point need be made. Take the market prices of New York and Boston, on the Atlantic, and of St. Louis and Cincinnati, in the west, at an interval of twenty years, and it will be seen that the cheap prices of the west have gradually approximated to the high prices of the east, and this solely in consequence of cheapening the cost of transportation, which inures to the benefit of the farmer.

3. By thus giving the farmer the benefit of the best markets and the highest prices, railroads have increased the agricultural productions of the interior States beyond anything heretofore known in the world. We have already shown that this increased production, or rather its surplus, could not have been carried to market without the aid of railroads, more than two-thirds of the whole being carried off by that means. Let us now reverse this operation, and we find, on the other hand, that railroads have stimulated and increased production. The northwestern States are those in which the influence of railroads on agriculture is most obvious. In the five States of Ohio, Indiana, Illinois, Michigan, and Wisconsin there were comparatively few miles of railroad prior to 1850; but from 1850 to 1860 the construction of roads was most rapid. In 1850 there were only 1,275 miles of railroad in those States, but in 1860 there were 9,616 miles. Let us now examine the products of those States in 1850 and 1860, and see how the progress of railroads has sustained and stimulated agricultural production. The following table shows the increase of the principal vegetable and animal production in the five States of Ohio, Indiana, Illinois, Michigan, and Wisconsin in the ten years from 1850 to 1860:

	In 1850.	In 1860.	Increase per cent.
Wheat	39, 348, 495 bushels.	79, 798, 163 bushels.	100
Corn	177, 320, 441 "	280, 268, 862 "	58
Oats	32, 660, 251 "	51, 043, 334 "	50
Potatoes	13, 417, 896 "	27, 181, 692 "	100
Cattle	3, 438, 000 "	5, 371, 000 "	59

This increase is decidedly beyond that of the population; showing that the products of agriculture are, in those States, profitable. The aggregate of grain products in those States was:

In 1850	*255, 240, 444 bushels.
In 1860	*422, 369, 719 "

What part railroads have had in carrying this product to market we shall see by† ascertaining the surplus, and the manner in which it was transported. The commissioner of statistics for the State of Ohio, in his report to the legislature of Ohio, estimates (in the actual carriage of railroads and canals) that *three-fifths* of the value of agricultural products of Ohio are exported, excepting, of course, pasturage, fruits, garden products, &c. In 1859–'60, twelve millions of bushels of wheat were exported from that State, and an equal proportion of corn, reduced into other forms, such as fat cattle, hogs, pork, lard, whiskey, cheese, &c. Three-fifths of the aggregate grain production of these five States (1860) will give two hundred and fifty millions of bushels of grain. This is vastly greater than the whole tonnage of canals and railroads, and would, therefore, seem incorrect. This, however, is not so. The heaviest article (corn) is reduced to a fourth, perhaps, less weight by being changed into whiskey, pork, and cattle. The same is true of oats, and thus the ten millions of tons represented by the canals and railroads may cover all the surplus which finds the extreme eastern markets. A large quantity of the surplus products of these States is consumed in way-markets. We see now, that, since railroads carry two-thirds of this immense export, they represent nearly or quite the same proportion of the capacity of those States to raise any surplus, and therefore two-thirds of the profit made upon it. If we now consider the question of the profits of agriculture, the case becomes still stronger. The actual cash value of the products carried to market from these five States (that is, the surplus) is two hundred millions of dollars, and it is safe to say that one-half this sum is due to the influence of railroads. There are some interesting facts on this subject, to some of which we will briefly allude. Take, for example, the prices of both products and lands in the interior States, and compare them at different periods. Forty years ago (1824–'25) the surplus products of Ohio had already accumulated beyond the means of transportation. In consequence of this fact, wheat was sold in the interior counties, for 37 cents per bushel, and corn at 10 cents. After the New York canal (Erie) was finished, in 1825, and the Ohio canals several years later, these prices were raised more than fifty per cent.; but when two or three of the main railroad lines were finished in 1852–'53, the rise in prices and the amount carried forward to the eastern markets were even more increased. To show, in some measure, the effect of the improved means of transportation on the value of produce in the interior, we make the following table of prices at Cincinnati at several periods:

	In 1826.‡	In 1835.	In 1853.	In 1860.
Flour	$3 00 per barrel.	$6 00	$5 50	$5 60
Corn	0 12 per bushel.	0 32	0 37	0 48
Hogs	2 00 per cwt.	3 12	4 00	6 20
Lard	0 05 per pound.	0 08	0 08½	0 11

We find that in 1860 the price of flour was nearly double that of 1826; the price of corn nearly four times as much; the price of hogs three times as much, and the price of lard double. From 1835 to 1860, (when the railroads were completed,) under the influence of railroad competition with canals the price of corn advanced 50 per cent., and that of hogs 100 per cent. Perhaps no articles can be selected which furnish a more complete test of the value and profits of farming in the States of the northwest than that of these staples, corn and hogs.

But there is another respect in which the influence of railroads is almost as favorable to agriculture as that of cheapening the transportation of produce. It is that of cheapening the transportation, and therefore reducing the prices of foreign articles and eastern manufactures consumed by the farmers of the interior. We need not adduce tables to illustrate this; for it is quite obvious and well known

* Includes wheat, rye, corn, oats, barley, and buckwheat. † Edward D. Mansfield.

‡ The prices of 1826 are from "Drake & Mansfield's Cincinnati, 1826."

that this has been the effect, though perhaps not to so great an extent as the reverse, in the case of produce. In 1839–'40 sugar was just the same price as in 1857 and 1858; but the average price of coffee from 1833 to 1838 was three cents higher than it was from 1853 to 1860. On the whole, the prices of articles carried from the east to the west were diminished, while those from the west to the east were increased. Again, the influence of railroads on the value of farming lands is too great and striking not to have been noticed by all intelligent persons. We have, however, some remarkable instances of the specific effect of certain railroads; we have, for example, the immediate effect produced on the lands of Illinois by the Illinois Central railroad. That company received from the government a large body of land at a time when the government could not sell it at a dollar and a quarter ($1 25) per acre. Since then the company has constructed its road and sold a large part of those lands at an average of $11 per acre, and the greater part of the lands of Illinois is fully worth that. Notwithstanding the rapid growth of population, the larger part of this advance is due to railroads. The following table shows the advance (by the census tables) of the cash value of farms in the five States mentioned in the ten years from 1850 to 1860:

	1850.	1860.
Ohio	$358, 758, 602	$666, 564, 171
Illinois	96, 133, 290	432, 531, 072
Indiana	136, 385, 173	344, 902, 776
Michigan	51, 872, 446	163, 279, 087
Wisconsin	28, 528, 563	131, 117, 082
Aggregate	671, 678, 075	1, 738, 394, 188
Increase in ten (10) years		$1, 066, 716, 113

It is not too much to say that one-half this increase has been caused by railroads, for we experience already the impossibility of conveying off the surplus products of the interior with our railroads. Putting the increase of value due to railroads at a little more than one-third, we have four hundred millions of dollars added to the cash value of farms in these five States by the construction of railroads. This fact will be manifest if it is considered that the best lands of Illinois were worth but a dollar and a quarter per acre prior to the construction of railroads, and are now worth twenty dollars.

We need not pursue this subject further. If the effect on the central western States has been so great, it is still greater in the new States which lie beyond the Mississippi. They are still further from market, and will be enriched in a greater ratio by the facilities of transportation. Indeed, railroads are the only means by which the distant parts of this country could have been commercially united, and thus the railroad has become a mighty means of WEALTH, UNITY, and STABILITY.

PRESERVATION OF FOREST TREES.

We have endeavored to avail ourselves of all proper occasions, to impress upon our generation the importance of exercising greater care in the preservation of forest trees. It is lamentable, in view of present ruthlessness, and the demands of posterity, to observe the utter disregard manifested by the American people, not merely for the preservation of extensive groves, but the indifference which they exhibit for valuable trees, the destruction of which is not necessary to good cultivation, and the existence whereof would not only add greatly to the value of their property, but contribute vastly to health, the fertility of their farms, and the comfort of their live stock. We have seen thousands of farms rendered less productive and of much less intrinsic value by the destruction of timber, especially on their north and west boundaries, where they protect from the colds of winter, and others made unhealthy by removing the barriers which nature had placed to the encroachments of miasm.

We remember, upon an occasion of remonstrance with a farmer against destroying a beautiful isolated tree in a large field, his foolish reply in extenuation of his labor, that it supplied a resort for the blackbirds which destroyed his corn, nor could he be persuaded that its use by the birds which

protected his fields through a long series of years from insect depredators, much more than compensated for the few corn-hills torn up by the enemy of the grub-worm, nor dissuaded by the representation of its benefits in supplying shade to his cattle. His plea was, that if we had experienced like labor with himself in eradicating the original forest, we would not manifest such fondness for trees. Were the half of that farm now possessed of so much of its "original forest" as might have been preserved, without any restriction of its uses for necessary purposes, it would be worth double the present value of his entire estate, while we doubt not that the other half would have yielded more income than he has derived from the whole, and have increased in value. No one better understood the importance of belts of timber as protection against the inroads of fever, than the judicious and philosophic Dr. Benjamin Rush, of Philadelphia, who in 1798 assigns one cause for "the unusually sickly character of Philadelphia after the year 1778" to the "meadows being overflowed to the southward of the city, and the cutting down by the British army of the trees which formerly sheltered the city from the exhalations of the ground."*

Dr. Rush refers to the fact of residences in the southern country becoming untenable from like causes—the cutting down of groves near dwellings. Through ignorance and want of taste, labor and expense are thus misappropriated, producing injurious consequences, not only to the present but to future generations. Every well-managed farm should support sufficient timber to admit of an abundant present supply for all necessary purposes of fuel, fencing and building, without reducing the quantity necessary for like uses by posterity, and by the exercise of discretion the amount of land appropriated to this end will be found less than is generally supposed, although, judging from the too-general practice, it would appear as if we presumed that posterity would have but little use for timber. Apart from the increasing value of timber in every section of our country, our farmers do not seem to comprehend that they are destroying that which in a little time would prove the most attractive feature of their estates. Groves restrain the sweeping winds in winter from divesting the surface of that soft and protecting covering and important fertilizer, the snow, the gradual melting of which in spring converts the stones into food for plants, while in the summer they supply an invisible but important moisture to the crops, and in the heated day enable them to enjoy the full advantage of the dews of night, and supply agreeable places of recreation for developing the intellects and bodies of our children, ever associating with their minds through life, recollections of pleasures the happiest of their existence, which made home a place of joyous contentment. And who that has experienced the pleasure, would exchange it for that derivable from other examples of practical operations, the gratification yielded by mature, beautiful forest trees which he preserved, protected, and pruned when they were but unseemly shrubs, especially when his children and their children derive from them their happiest annual enjoyments? He whose farm is destitute of groves should procure or plant them at once, being encouraged by the fact that from the seed, with good attention, he may have nut-bearing chestnut trees in eight years; and while your houses and barns are failing, these will be improving. But in addition to the luxury, ornament, and value of groves, wherever they are cherished with proper attention, they confer a dignity upon their possessor and ennoble the pursuit of agriculture. That was a sage injunction of the dying Scotch laird to his son: "Jock, when ye hae naething else to do, ye may be aye sticking in a tree; it will be growing, Jock, when y're sleeping;" words of wisdom "tauld" him by his father, "sae forty years, sin;" but which he regretfully confessed not to have heeded.

While treating of this subject we cannot refrain from reference to that bad taste, so frequently exhibited, of introducing exotics for ornament, or to supply shade, to the neglect of the beautiful native forest trees, which are so easy to be obtained by all—not that we have any objection to such, under appropriate circumstances, but to adopt them to the exclusion of the more attractive and useful trees with which our forests abound, betrays a want of taste as well as deficiency in judgment.

---

* Medical Inquiries and Observations: Philadelphia, 1789, p. 86.

*FRUITS, VEGETABLES, AND WOOL OF CALIFORNIA.

Our orange and lemon crops are becoming of great importance, coming into market or ripening when those raised in the tropics are exhausted. The trees of each of these grow as large as they do in the tropics; the fruit is as good and as sweet, but the rind thicker. We produce the sugar-cane of Louisiana, and it yields profitably; the Chinese sugar-cane does well, but neither these nor the cotton-plant have been cultivated on sufficiently large a scale to enable me to arrive at a conclusion as to their real merits as staple products in this region. A convention of stock-raisers, composed of intelligent gentlemen, met in San Francisco last year. They inform us, from their best source of information, that we have now in the State three millions of horned cattle, a number far beyond the wants of consumption; and there being no market open to us beyond the limits of the State, this branch of industry has become profitless and ruinous. The same will apply to horses. We have vast quantities of inferior stock which have become a nuisance, and which only serve to destroy pasture that might be profitably employed for the maintenance of the Merino sheep.

The capacity of this State for maintaining a large population in proportion to our entire superfice, is not as great as our number of square miles would suggest. There is but a comparative small proportion that can be cultivated. This is not owing to any want of fertility, but to the absence of rains in the summer, and the scarcity of water for irrigation on a large scale. Our commercial position on the continent, our vast mineral resources, and our unsurpassed climate will always guarantee to California a respectably numerous, but we need never hope for a dense population, such as will swarm the great northwest, "where every rood of land will maintain its man."

Much will be done to extend the present area of cultivation in the State by means of artesian water, damming in the winter to prison the water of mountain streams for summer irrigation, and by improved modes of deep ploughing and subsoiling, which will enable the field to absorb and retain the winter rains.

Vegetables of all kinds are produced in great abundance, and the aid of manures is seldom resorted to. In size and yield they surpass those of the older States, but some contend they are deficient in flavor. This, I think, a mistake, and may be partially accounted for by early and pleasing impressions of home.

Our wool clip will claim, in order of importance, the second rank as a product, adding largely to the material wealth of the State and nation at large, giving to large numbers pleasing and profitable employment, and adding much to our carrying trade. From a few thousand coarse-wooled and inferior Mexican sheep, our flocks will now number three millions of improved stock, yielding this year a clip approximating to 12,000,000 pounds; and, at the close of the present decade, it will not be unreasonable to expect that California will produce an amount equal to the entire product of this staple in the United States in 1860—say 60,000,000 pounds. We are happy to see that your wise and patriotic suggestions in relation to the protection that our wool-growing interests should have and receive are being acted on by Congress. The same rule should apply to the wine-growing interest, and specific, not ad valorem, duties should be the rule, so as to prevent fraud both on the producer and the government.

---

* Communicated by Ex-Governor Downey.

NUMBER OF SLAVEHOLDERS IN THE UNITED STATES.

The last table in the volume would attach more properly to that on population; but, not having been included there, it is deemed more advisable to incorporate it here than to omit it.

In examining this table, the conclusion must not be arrived at that the exhibit presents the number of people directly interested in slaves. A great majority of the persons represented in the table are heads of families, or agents for others having equal interest with themselves. It would probably be a safe rule to consider the number of slaveholders to represent the number of families directly interested in the slave population in 1860.

In concluding this introduction, we cannot but allude to the industry and capacity of Mr. JAMES S. WILSON, who has been charged with the supervision of the tables following, and to whom we are mainly indebted for that accuracy with which they have been prepared.