XI.—Live Stock and Products.

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In General.—The plates of this group illustrate the number and distribution of live stock "on farms," and its products, as returned by the Tenth Census. The limitation "on farms" excludes two large and important classes of live stock; first, the cattle, sheep and swine upon ranches, mainly in the extreme west, at and beyond the frontier of settlement, where the stock ranges principally upon the public lands, in a half wild state; and secondly, those in settled regions, mainly in cities and towns, owned and used for purposes of business or pleasure, by persons not engaged in agricultural pursuits. It would appear that neither of these classes is separated by well-defined lines from farm stock. Indeed, as to the former, the distinction is almost purely artificial, having been made to facilitate the work of the census office. An effort to obtain these statistics, by means of a special investigation, has met with very good success, and the results, although not reached early enough for incorporation in the maps and diagrams of this group, will be found in the text.

No such effort was made, however, to obtain the statistics of the second of the above classes, and the animals thus owned can only be estimated in round numbers. This class consists almost entirely of milch cows, horses and swine—very few oxen being now employed, except on farms, and even of these the number is rapidly diminishing.

The following table presents the principal statistics for the United States regarding live stock on farms, and its products, at the dates of the several censuses, from 1850 to 1880:—

	1850.	1860.	1870.	1880.
Value of all Live Stock	$544,180,516	$1,089,329,915	$1,525,276,457	$1,500,464,609
Number of Horses	4,336,719	6,249,174	7,145,370	10,357,488
Number of Mules and Asses	559,331	1,151,148	1,125,415	1,812,808
Number of Working Oxen	1,700,744	2,254,911	1,319,271	993,841
Number of Milch Cows	6,385,094	8,585,735	8,935,332	12,443,120
Number of Other Cattle	9,693,069	14,779,373	13,566,005	22,488,550
Number of Sheep	21,723,220	22,471,275	28,477,951	35,192,074
Number of Swine	30,354,213	33,512,867	25,134,569	47,681,700
Pounds of Wool	52,516,959	60,264,913	100,102,387	155,681,751
Pounds of Butter	313,345,306	459,681,372	514,092,683	777,250,287
Pounds of Cheese	105,535,893	103,663,927	53,492,153	27,272,489

PERCENTAGE OF INCREASE.

	1850 to 1860.	1860 to 1870.	1870 to 1880.
Value of all Live Stock	100.2	40.0	*1.6
Number of Horses	44.1	14.3	44.9
" Mules and Asses	105.9	*2.2	61.1
" Working Oxen	32.6	*41.5	*24.7
" Milch Cows	34.5	4.1	39.2
" Other Cattle	54.5	*8.2	65.8
" Sheep	3.4	26.7	23.6
" Swine	10.4	*25.0	89.7
Pounds of Wool	14.7	66.1	55.5
" Butter	46.9	11.8	51.2
" Cheese	*1.8	*48.4	*49.1

*Decrease.

The first feature of note to catch the eye of the reader of these tables is the slight *decrease* in value of live stock between 1870 and 1880. This, however, is apparent rather than real, being mainly due to the fact that the value in 1870 is expressed in paper, at an average depreciation of about 20 per cent. Another feature of note is the decrease in some classes between 1860 and 1870, and in other classes a great reduction from the average rate of increase. Thus, mules and asses, working oxen, beef cattle, and swine, suffered a great decrease in numbers during the decade, and the number of horses and milch cows did not increase by any means as rapidly as in other decades. This effect was doubtless due to the war, which consumed and wasted large numbers of live stock.

The number of working oxen has suffered a rapid decrease since 1860, owing to the substitution for them of horses and mules, in farm labor. The immense decrease in the production of cheese, upon farms, is due to the transfer of this industry, in great part, to manufactories. The industry of butter-making is now undergoing a similar change, although it has not yet been transferred from the farm to the factory to any considerable extent.

The above tables are supplemented by the following, presenting a complete statement of

the numbers of the different classes of live stock in the country in 1880. The numbers of cattle, sheep and swine on ranches are from the special investigation by the Census office. Those of horses, mules and asses, milch cows, sheep and swine, owned by persons who are not farmers, have been estimated.

	On Farms.	On Ranches.	Otherwise Owned.	Total in United States.
Horses	10,357,488	.....	2,166,000	12,523,488
Mules and Asses	1,812,808	....	350,000	2,162,808
Milch Cows	12,443,120	.....	6,000,000	18,443,120
Working Oxen	993,841	.....	.....	993,841
Other Cattle	22,488,550	3,750,022	.....	26,238,572
Sheep	35,192,074	7,000,000	3,000,000	45,192,074
Swine	47,681,700	2,090,970	7,000,000	56,772,670
Wool, pounds	155,681,751	.....	.....	240,681,751
Butter, "	777,250,287	.....	.....	806,672,071
Cheese, "	27,272,489	.....	.....	243,157,850

These tables show that there was 1 horse to every 4 inhabitants, or thereabouts, and 1 mule or ass to every 25 inhabitants. The number of working oxen was to the number of the population as 1 is to 50; milch cows, 1 to 3; beef cattle, 1 to 2; sheep, as 9 is to 10; while the number of swine was very nearly equal to that of the population. There were produced during the Census year nearly 5 pounds of wool to every man, woman and child in the country. An explanation should be given of the addition to this item, as seen in the last column. The production of wool given in the first table was merely the spring clip of 1883. To that has been added the fall clip of sheep on farms in California and Texas, estimated at 13,000,000 pounds; the clip of ranch sheep, estimated at 34,000,000 pounds, and the pulled wool and fleece of slaughtered sheep, estimated at 38,000,000 pounds, giving a total, as above stated, of 240,681,751 pounds. The production of butter and cheese "on farms" is increased, in the last column, by the factory product, thus presenting the total production of the country.

The following table shows the numbers of ranch stock, by states and territories, as estimated by the special investigation of the Census office:

States and Territories.	Cattle.	Sheep.	Swine.
Arizona	90,774	390,000	4,630
California	150,737	1,575,000	264,869
Colorado	444,653	345,000	3,229
Dakota	65,968	55,000	2,316
Florida	91,025	49,000	28,549
Idaho	106,290	90,000	7,449
Indian Territory	487,748	55,000	773,931
Kansas	82,076	130,000	86,274
Montana	255,892	95,000	4,912
Nebraska	354,697	48,000	377,178
Nevada	44,602	97,000	85
New Mexico	181,235	1,850,000	10,302
Oregon	181,773	285,000	22,973
Texas	810,093	1,240,000	499,252
Utah	37,239	290,000	3,423
Washington	63,630	96,000	1,246
Wyoming	243,140	310,000	352
Public Land	58,450	.....	.....
Total on ranches	3,750,022	7,000,000	2,090,970

Horses.—The distribution of horses "on farms" being closely allied with other agricultural interests, follows them in a general manner. Where the agricultural product is greatest, there is found, in most cases, the largest number of horses upon farms. In conformity with this we find, speaking broadly, the Northern Central group of states leading in this class of live stock, both in absolute number and in number as proportioned to area and to population; while in the North Atlantic States, and especially in New England, the number is small as compared with area, and still smaller in proportion to population. This fact is sufficiently explained by the relatively greater importance in this section of manufactures, as compared with agricultural pursuits. In the two southern sections, where agriculture is largely carried on by manual labor, and where mules are used as working stock, to the practical exclusion of horses except for riding, we find the number of the latter is comparatively small. In the Western States and Territories the numbers, though absolutely and in proportion to area of but small amount, are, relatively to population, much greater than the average of the country.

Mules and Asses.—In regard to mules and asses, other causes are found to influence the distribution. In the United States as a whole, the number of this class compares with that of horses as 1 to 5, approximately. Among the different states, however, the widest possible divergence is found from this average ratio. In many of the Southern States, for example, South Carolina, Georgia, Alabama and Mississippi, the number of mules and asses exceeds that of horses, and in every state of this section the proportion is far in excess of the average of the country. On the other hand, in the North Atlantic States, there are very few of this class of live stock. Indeed, in this section, mules for draught purposes were almost unknown before the war; since that time, owing to the army education of northern farmers, they have been gradually coming into use, and supplanting oxen for farm work. In Indiana, Illinois and Iowa the proportion between mules and asses on the one hand, and horses on the other, is about 1 to 10; while in the more northern tier of states, Michigan, Wisconsin and Minnesota, the proportion is very much less. In nearly all of the states and territories of the Western group, the number of this class of live stock is very small, indeed trifling in amount; while in proportion to the number of horses, it is much below the average of the United States.

Cattle.—Classification of Cattle "On Farms" and Ranches.

	Working Oxen.	Milch Cows.	Other Cattle.
North Atlantic Group.			
Maine	43,049	150,845	140,527
New Hampshire	29,152	90,564	112,689
Vermont	18,868	217,033	167,204
Massachusetts	14,571	150,435	96,045
Rhode Island	3,523	21,460	10,601
Connecticut	28,418	116,319	92,149
New York	39,633	1,437,855	862,233
New Jersey	2,022	152,078	69,786
Pennsylvania	15,062	854,156	861,019
South Atlantic Group.			
Delaware	5,818	27,284	20,450
Maryland	22,246	122,907	117,387
District of Columbia	4	1,292	271
Virginia	54,709	243,061	388,414
West Virginia	12,643	156,956	288,845
North Carolina	50,188	232,133	375,105
South Carolina	24,507	139,881	199,321
Georgia	50,026	315,073	544,812
Florida	16,141	42,174	500,080
Northern Central Group.			
Ohio	8,226	767,043	1,084,917
Indiana	3,970	494,944	864,846
Illinois	3,346	865,913	1,515,063
Michigan	40,393	384,578	466,660
Wisconsin	28,762	478,374	622,005
Minnesota	36,344	275,545	347,161
Iowa	2,506	854,187	1,755,343
Missouri	9,020	661,405	1,410,507
Kansas	16,789	418,333	1,098,011
Nebraska	7,234	161,187	944,826
Dakota	11,418	40,572	154,793
Southern Central Group.			
Alabama	75,534	271,443	404,213
Mississippi	61,705	268,178	387,452
Louisiana	41,729	146,454	282,418
Texas	90,502	606,176	4,198,020
Arkansas	25,444	249,407	433,392
Tennessee	27,312	303,900	452,462
Kentucky	36,166	301,882	505,746
Indian Territory and Public Land	.....	.....	*546,198
Western Group.			
Montana	936	11,308	416,035
Wyoming	718	3,730	516,765
Colorado	2,080	28,770	760,642
New Mexico	16,432	12,955	318,549
Arizona	984	9,156	125,617
Utah	3,968	32,768	95,919
Nevada	765	13,319	202,739
Idaho	737	12,838	177,582
Washington	3,821	27,622	166,741
Oregon	4,132	59,549	534,334
California	2,288	210,078	602,678

*Ranch stock only. Farm stock was not enumerated.

The class of live stock "on farms," denominated by the Census "Other Cattle," consists mainly of that raised for beef. To this have been added the numbers of ranch cattle in the different states and territories, in forming the last column of the above table. While the total number of such cattle in the country is about one-half that of the population, a glance at the table shows that the proportion in the several states and territories presents wide variations. In most of the Northern Central States, in Florida, Texas, and the Western States and Territories, the proportion is greatly in excess. It is from these states and territories that the supply of beef for the North Atlantic States, and for export to foreign countries, is derived. The Southern States, while raising comparatively little beef, consume correspondingly little, and the home supply is equal to the demand.

In examining the statistics of working oxen, it is seen that they are most abundant in New England, in the South Atlantic and in the Gulf States, where their number ranges from one-fifth to one-half the number of horses. The proportion is much less in New York, New Jersey and Pennsylvania; while in the states in the Mississippi Valley, lying west of these, the number is comparatively trifling. It is greater in the states on the Canadian border, where it averages about one-tenth the number of the horses. It is probable that the greater proportion here is due to the requirements of the great lumber interests of these states.

The average of the whole country shows one milch cow to about three inhabitants, and while the departures from this ratio in the individual states are considerable, they are by no means as great as in the other classes of live stock. The reason for this comparatively uniform distribution of milch cows is apparent. It is owing to the universal necessity for their products, and the perishable nature of those products. In some of the great dairy states the proportion, however, is very high. Thus, in Vermont, there is 1 cow to 1½ inhabitants; in Iowa and Kansas, 1 to 2. In others, however, for example, New York, Pennsylvania and Ohio, the great preponderance of other industries has thrown this one completely into the shade, and obliterated all traces of its effects in raising the ratio of milch cows to population. Generally speaking, it may be said that this ratio is least in the large manufacturing states, containing a great proportion of urban population, and in the Southern States. Thus, it stands at 1 to 13 in Rhode Island, 1 to 12 in Massachusetts, and 1 to 7 in New Jersey. Among the Southern States, it is 1 to 6 in Virginia, North Carolina and Florida; 1 to 7 in South Carolina, and 1 to 5 in Georgia and Alabama. The low proportion in those states having a large urban population is unquestionably made up to them by the cows kept in the cities and towns, not "on farms."

Dairy Products.—To the amount of butter returned as having been made "on farms" in 1880 has been added the factory product, 29,421,784 pounds, making the total product in that year 806,672,071 pounds, an average of very nearly 16 pounds for every man, woman and child in the country.

The manufacture of cheese upon farms has been gradually decreasing for many years, while during the same period the factory production, as shown in the chapter upon Manufactures, has very rapidly increased. In 1870 the production from both sources was 162,927,382 pounds, while in 1880 it had increased to 243,157,850 pounds.

The so-called *production* of milk reported by the Census, includes only that portion of the production which was sold for consumption or disposed of to butter and cheese factories. It represents, therefore, only a small part of the total product. The amount reported was 530,129,755 gallons, of which New York produced more than two-fifths, or nearly 232 millions of gallons. This state was followed, at a considerable distance, by Ohio, Illinois and Pennsylvania. As would naturally be expected, the production of the Southern States was very limited.

The production of dairy products (milk, butter and cheese) follows closely, in its distribution over the country, the distribution of milch cows. It is decidedly greatest in the North Atlantic and Northern Central States, the product of the other sections being not greater, and in most localities much less, than is required for home consumption. The states producing the greater part of the butter and cheese of the country, both on farms and in factories, are New York, Pennsylvania, Ohio, Illinois, Indiana, Iowa, Michigan and Wisconsin. California produces a large amount of cheese, while its production of butter is comparatively small.

Sheep.—To the number of sheep returned as "on farms," must be added 7,000,000 "ranch sheep" and 3,000,000 otherwise owned, making the total 45,192,074. The increase in the number of sheep on farms, which from 1850 to 1860 and from 1860 to 1870 was very slight, being less in the former decade than that of population, and in the latter scarcely exceeding it, rose in the decade just past to 48 per cent., that of population being 30 per cent. During this decade there was not only a great increase in number in most of the Eastern States, but the great interest of "ranch sheep" in the states and territories of the extreme west has grown from comparatively small proportions to its present magnitude.

In absolute numbers Ohio leads all the states, followed closely by California, and at a distance by Texas, Michigan, New Mexico, Pennsylvania and New York. In number per square mile, which is the true measure of importance in this industry, Ohio still leads, being far in advance of all the rest. Then follow Vermont, Pennsylvania, Michigan, New York, etc.; California standing 8th in the list, New Mexico 16th, and Texas 25th. Speaking generally, the principal development of this industry is in the northern tier of states, extending from Vermont through New York, Pennsylvania, Ohio, Indiana, Michigan and Wisconsin. West Virginia, Kentucky and Missouri are also of importance; while upon the Pacific coast, California has more than 26 head to a square mile, and that part of Oregon lying west of the Cascade range is nearly as thickly occupied. The Southern States contain comparatively few, and, as a rule, these are not of high grade. Exception to this must, of course, be made in the case of Texas, in which state, and in New Mexico and California, sheep have been raised in immense numbers ever since the days of Spanish dominion. The sheep, however, were of low grade, "scrubs," who had, through generations of neglect, developed those qualities of hardiness and toughness which enabled them to pick up a living under adverse circumstances, and to withstand, without injury, all the ordinary rigors of climate. These qualities, so desirable in "ranch sheep," were gained at the expense of flesh and fleece, so that the pure Mexican scrub is not of itself a source of profitable culture. It has been found, however, that by crossing these ewes with high grade Merino rams, a breed is produced which combines in high degree the good qualities of both father and mother. With such stock the great sheep ranges of the states and territories of the extreme west are, in great measure, stocked. The breeding of sheep has been carried to a high degree of excellence in the Eastern and Mississippi Valley States, particularly in Vermont, New York and Ohio; and as the direct pecuniary value of improvements in breeds is becoming more fully recognized, sheep farmers everywhere, and especially in the northwest and extreme west, are paying more and more attention to the subject.

Wool.—The production of wool shows a much more rapid increase than the number of sheep. Between 1850 and 1860 the increase was 14.7 per cent. Between 1860 and 1870 it was 66.1 per cent., and between 1870 and 1880 147 per cent. This greater increase of wool production indicates a correspondingly greater yield of wool per sheep. The average fleece in 1850 was but 2.3 pounds; in 1860 it was 2.7 pounds; in 1870 it had risen to 3.5, and in 1880, disregarding ranch sheep and their product, to 4.4 pounds.

The distribution of wool production naturally conforms in general features to that of

sheep. The principal production is in the North Atlantic and Northern Central sections, to which should be added California, western Oregon and southern Texas. Generally speaking, it may be said that those states which stand low in number of sheep, stand still lower in production of wool. The reason for this is, that in the states in question the raising of wool is not pursued as an avocation, but is merely an incident of farming, and consequently little or no attention is given to breeding, or to other matters which determine the weight and quality of the fleece. Hence the average weight of a fleece is less than in other sections where the business is followed exclusively. To illustrate the range of weight per fleece in the different states, the following table has been prepared. The most striking fact shown by it is the lightness of the fleece in the Southern States as compared with that of the northern part of the country. In the North Atlantic and Northern Central sections the fleece ranges from 3.7 to 6.5 pounds, and the average must be a fraction over 5 pounds. In the two southern sections the weight ranges from 2.2 to 4.6 pounds per fleece, with an average not above 3 pounds. There is a similar difference in 1870 and in 1860. This is probably produced by a combination of causes. First, as has already been suggested, want of care in housing, feeding, breeding and shearing; and, second, the climate. Nature does not provide as warm a covering for animals living under a semi-torrid sun as if exposed to the chilling blasts of a northern winter.

Between 1860 and 1870 most of the Southern States show a decrease in weight of fleece per sheep. This is probably explained by the fact that during four years of war this class of live stock, like the rest, received little or no care, and consequently it deteriorated. The marked improvement since 1870, especially in the border states, is thus more strongly emphasized. In the Northern States the weight per fleece has steadily increased since 1860, with scarcely an exception. In some states, notably those in the northern part of the Mississippi Valley, this increase has been very great. The heaviest average fleece is that of Iowa, which has increased from 2.6 in 1860 to 6.5 pounds in 1880. Nebraska has increased her average fleece still more—from 1.4 in 1860 to 6.4 pounds in 1880. In the states and territories of the extreme west the fleeces are generally heavy; but in New Mexico the shiftless character of the native population is well illustrated by the average weight of fleeces—1.9 pounds only.

WEIGHT PER FLEECE—IN POUNDS.

	1860.	1870.	1880.
North Atlantic Group.			
Maine	3.3	4.1	4.9
New Hampshire	3.7	4.5	5.0
Vermont	4.1	5.4	5.8
Massachusetts	3.3	3.9	4.4
Rhode Island	3.8	3.2	3.9
Connecticut	2.9	3.0	3.9
New York	3.6	4.9	4.8
New Jersey	2.6	2.8	3.7
Pennsylvania	2.9	3.7	4.8
South Atlantic Group.			
Delaware	2.7	2.6	4.5
Maryland	3.2	3.4	5.0
Virginia	2.4	2.4	3.7
West Virginia	...	2.9	4.0
North Carolina	1.6	1.7	2.0
South Carolina	1.8	1.3	2.3
Georgia	1.9	2.0	2.6
Florida	2.0	1.4	2.9
Northern Central Group.			
Ohio	3.0	4.2	5.1
Indiana	2.6	3.1	5.6
Illinois	2.6	3.7	5.9
Michigan	3.1	4.4	5.4
Wisconsin	3.0	3.8	5.2
Minnesota	1.6	3.0	4.3
Iowa	2.6	3.5	6.5
Missouri	2.2	2.7	5.2
Kansas	1.4	3.1	5.7
Nebraska	1.4	3.3	6.4
Dakota	...	4.6	5.2
Southern Central Group.			
Alabama	2.1	1.6	2.2
Mississippi	1.9	1.2	2.5
Louisiana	1.6	1.2	3.7
Texas	2.0	1.8	2.9
Arkansas	2.0	1.3	2.2
Kentucky	2.5	2.4	4.6
Tennessee	1.8	1.7	2.9
Western Group.			
Montana	...	....	5.4
Wyoming	...	4.7	4.9
Colorado	...	1.7	4.3
New Mexico	0.6	1.1	1.9
Arizona	...	0.9	4.1
Utah	2.0	1.8	4.2
Nevada	0.9	2.5	4.9
Idaho	...	3.3	4.7
Washington	2.0	3.7	4.7
Oregon	2.6	3.4	5.3
California	2.5	4.1	4.4

Swine.—In the production of pork the Northern Central States, as a group, lead, both in absolute number of swine and in number per square mile. It is from these states that the principal, almost the entire, supply for export is derived. In the Southern States the number is large, but probably no greater than is required for home consumption, as pork forms a considerable part of the diet of the inhabitants of these states.

The number of swine in the country is, as was shown above, slightly in excess of that of the population. In nearly all of the Southern States the proportion between the number of swine and of population is nearly the same as in the country at large. In the North Atlantic States, and in the states and territories of the Western group, the number of swine is very much less than that of population, while in the states of the Northern Central group, almost without exception, the number of the former is very much greater than that of the latter. In Iowa the proportion between them is nearly 4 to 1; in Nebraska, 3 to 1; and in several other states of this group the number of swine is fully twice that of population.

Exports.—The exports of live stock and its products are of great value, and in recent years have greatly increased. This is true especially of the exportation of beef cattle on the hoof. Within ten years this has increased 30 times, from a value of $439,987 in 1870, up to $13,344,195 in 1880. The larger part of this increase, too, has taken place since 1877, the misfortunes of the mother country proving blessings to us. With the increase in exports the value per head has increased very greatly. In 1871 the export value of beeves was only $19.65, and the price continued very nearly at these figures until 1876, when it rose rapidly, and in 1880 was over $73 per head.

The exportation of fresh and preserved beef has also increased considerably. That of the former has more than doubled since 1876, while in the same period the latter has increased 10 times. Salted or cured meat, however, is not now exported to so great an extent as formerly.

The exportation of mutton, both on the hoof and as fresh meat, has increased very greatly. The exportation of sheep on the hoof was 10 times as great in 1880 as in 1871, while since 1877 that of meat has increased many fold. Meanwhile the price of sheep for export rose from $1.91 in 1871 to $4.27 in 1880.

The export of live hogs shows a similar increase. This increase, however, took place early in the decade, the exportation reaching a maximum in 1874, when, with an average price of $10.25, the number of hogs sent out of the country was 1,625,837. Since that year restrictive legislation on the part of European nations has greatly reduced exportation, although it is still much greater than at the beginning of the decade. Meanwhile the export price of hogs has oscillated from $5 to $10, and above, the former being the average price in 1880. The exports of ham and bacon have steadily increased during the decade, from 71,446,854 pounds in 1871 to 759,773,109 in 1880. The exports of fresh pork, too, have increased, but by no means in equal ratio, while the gradual depression in the price leaves the value of the exports very nearly the same as ten years ago. The exports of lard have gone up from about 80 million in 1871 to 375 million pounds in 1880, with an increase in value from $10,563,020 to $27,920,367.

The total value of the exports of meat, on the hoof, fresh or preserved, was: for 1870, $18,288,115; 1875, $68,341,852; 1880, $117,872,556.