

CENTER OF MANUFACTURES.

Its Movement Westward.

1850 : Five miles East and six miles North of Mifflintown, Pa.

1860 : 5.5 miles West and 6.5 miles South of Indiana, Pa.

1870 : 6 miles East and 3.75 miles South of Kittanning, Pa.

1880 : 2 miles East and 2 miles South of Butler, Pa.

1890 : 8.5 miles West and 7 miles South of Canton, Ohio

1900 : 3 miles Southwest of Loudonville and 17 miles Southeast of Mansfield, Ohio.

Twelfth Census, Vol. VII, Page clxxi

(From 1890 to 1900 the center moved 39.35 miles west and 6.63 miles south.)

RANK OF U.S. AS A MANUFACTURING NATION.

Values in millions of dollars.

Country	1820	1840	1860	1894
UNITED Kingdom	1411	1883	2808	4263
France	1168	1606	2092	2900
Germany	900	1484	1995	3357
Austria	511	852	1129	1596
Other States	1654	2516	3455	5236
Europe	5644	8341	11479	17352
United States	268	467	1907	9498

Mulhall Industries and Wealth of Nations

Values changed from pounds Sterling to dollars by Census Officials Twelfth Census Vol. VII P. IV

From fourth place in 1860 the United States jumped to first place by 1894, producing more than the United Kingdom and Germany put together.

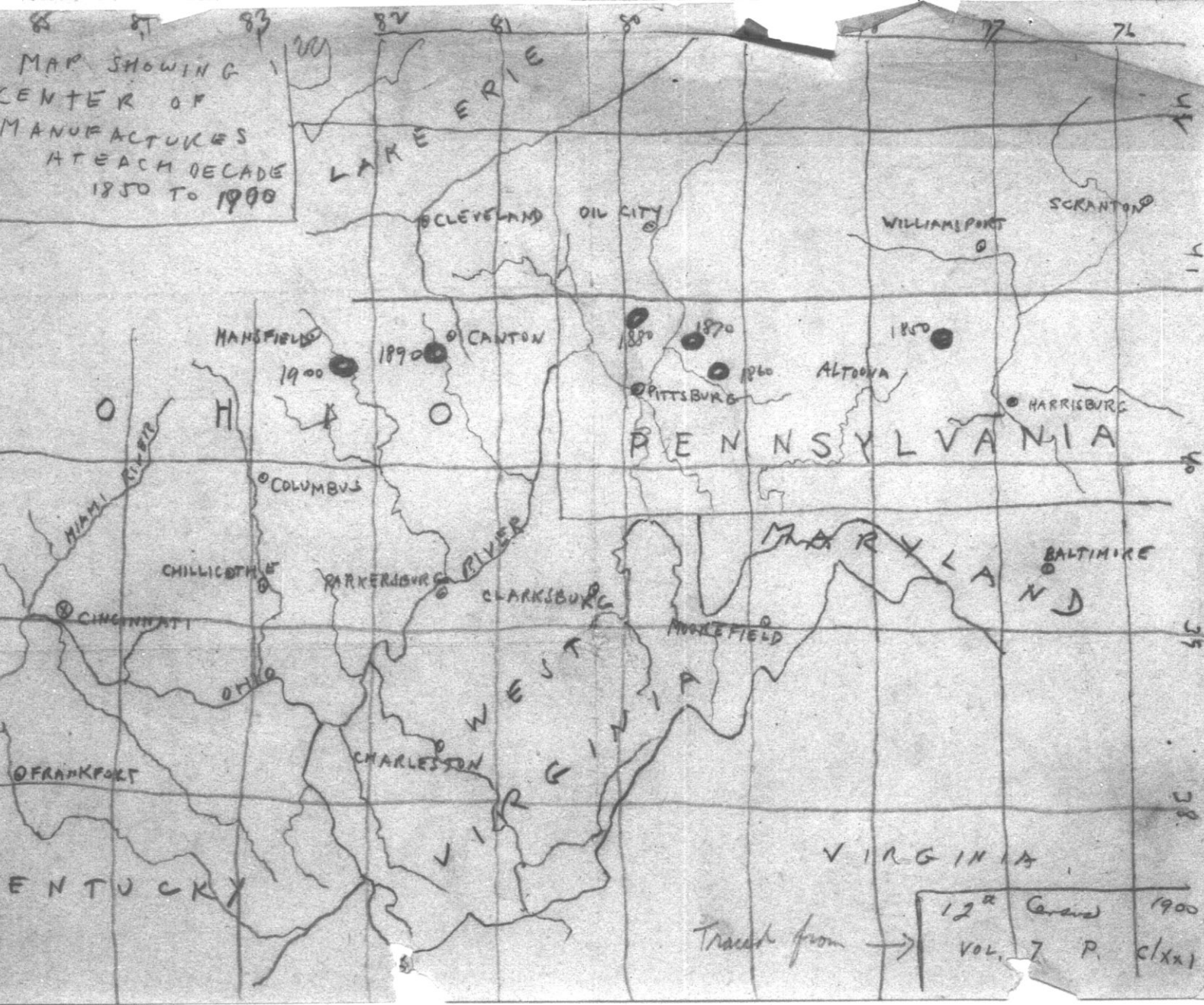
THE MANUFACTURING INDUSTRIES.

Year	Number of Establishments	Number of Employees	Value of Products
1880	253,852	2,732,595	5,369,579,191
1890	355,415	4,712,622	9,372,437,283
1900	512,254 339	5,704,165	13,004,400,143 13,014,287,498

(Statistical Record of Progress of U.S. Pp. 25-26)

(12 Census, Vol. VII P. XLVII)

MAP SHOWING
 CENTER OF
 MANUFACTURES
 AT EACH DECADE
 1850 TO 1900



Prof. H. U. Faulkner:

"The westward movement of manufacture has been caused primarily by the filling up of the west, which has provided labor and a market, and secondarily by a desire to be close to raw materials. It has been retarded by the scarcity of labor in the new communities and by concentration of capital in the older ones. It has likewise been forced to wait upon the development of transportation facilities. Although it has lagged behind both agriculture and population in the westward advance, manufacturing has usually followed the raw material as fast as labor could be obtained. Thus the milling of flour moved west from the coast rivers to Rochester on the Erie Canal, then to Chicago, and finally to Minneapolis and Kansas City. The meat-packing industry had its trans-Alleghany beginnings about 1818 at Cincinnati, but has moved to Chicago and Kansas City. Lumbering is an excellent example of an industry forced to follow the source of supply. The northeast originally furnished most of the lumber, but at present it is obtained largely from the northwest and south. As in the case of milling and meat-packing, the manufacture of agricultural machinery moved westward. The factories largely shifted from their original home in New York to Illinois and Wisconsin, following both the hickory forests and the farmer. In a similar manner the last thirty years have shown a tendency for the cotton industry to shift toward the source. The Carolinas and Georgia in 1880 produced only 6.2 per cent of the cotton manufactured, but in 1919 their output had risen to 33.7; the consumption of raw cotton in the mills of these states during the same years increased from 205,000 to 2,500,000 bales and the number of spindles over twenty-six fold in the cotton-growing states."

(American Economic History P.555-556)

Prof. W. W. Jennings:

"The center of manufacture tended to follow the westward movement of population. Some industries moved more rapidly than others. For example, with the movement of agriculture from the East to the West, New York and Ohio declined in importance with regard to the manufacture of agricultural implements, but some states to the west increased in a marked way. From 1889 to 1899 Illinois registered nine-tenths of the gain for the entire country. Another westward migration to the same group of states was that of flouring and grist mill products. In 1859 the leaders in the order of their production were: New York, Ohio, Pennsylvania, Illinois, Virginia and Indiana. In 1899, though the industry was widely distributed over the country, Minnesota had a product worth as much as that of the two leaders in 1859. The six principal producers in 1899 were: Minnesota (\$83,877,709), New York, Ohio, ~~Illinois~~, Pennsylvania, *Illinois*, Indiana (\$30,150,766). Virginia, which ranked fifth in 1859, had a product of only \$12,687,267 in 1899 and had fallen to fifteenth place. Still another migration from the East to the West was that of slaughtering and meat packing. The industry, as the term is now used, began at Cincinnati in 1818 and that

city held first place until surpassed by Chicago in 1861. Throughout the period the manufacture was shifting steadily westward in pursuit of the development of new cattle and swine regions, a movement accelerated by artificial refrigeration which has made the difference between the cost of moving live stock and the finished meat enough to lead packers to open plants near the stock producing and stockraising sections. The five leading central states—Illinois, Kansas, Nebraska, Indiana and Missouri—contributed 73.5% of the total in 1899 and Illinois alone had 40.1%. The leather industry furnished another example. Its migration began from Massachusetts and New York to Pennsylvania and the Central and Western States about 1879 when the tan bark supply was becoming exhausted."

(History of Economic Progress in the United States. Pp. 447-448).

Prof. E. L. Bogart:

"As the country has grown, new industries have been established in the newer sections; the center of manufactures as well as the center of population has moved steadily westward. The filling of the middle West and the growth there of large cities have provided the necessary labor supply, markets, and capital, while new sources of supply of raw materials have hastened the establishment of industries rivaling those of the older sections of the country.

"The very forces which make for localization tend also to shift the industry when these forces show themselves more strongly in other localities. Thus the manufacture of agricultural implements has advanced from New York to Ohio and Illinois, following the retreating hardwood forests and agricultural interests. In the cotton industry a striking change has taken place in the advance of the southern States, especially North and South Carolina and Georgia; the value of the cotton products of these three States constituted 6.2% of the total in 1880, and 29.7% in 1910. During the same period the capital invested in southern cotton mills increased from 21,900,000 to 360,000,000, the number of spindles from 610,000 to ~~2,500,000~~ 10,375,000, and the consumption of cotton from 205,000 to 2,500,000 bales. This growth has been largely at the expense of the New England mills--and is due to the proximity of the raw materials, the excellent water-supply, and the supply of cheap labor. The migration of the leather industry from Massachusetts and New York to Pennsylvania and the Central and Western States, which began about 1880, was due to the exhaustion of the tan bark supply. Slaughtering and meat packing which had its beginning in Cincinnati about 1818, has moved gradually westward, following the opening up of new grazing sections for cattle and swine."

(Economic History of the United States. Pp. 433-434)

THE SOUTH.

Prof. B. L. Bogart:

"Although cotton ginning was for a generation after 1860 practically the only interest of the South, and remains still the chief one, manufactures began about 1880 to reach that section. The value of the manufactured products increased from \$338,791,898 in 1880 to \$2,637,117,000 in 1910, and the capital invested in manufactures from \$192,949,654 to \$2,502,490,000 during the same period. The greatest development naturally took place in cotton manufactures, nearly half of the cotton factories of the United States being situated there in 1910, and consuming 51% of the raw cotton, practically all of which dates from 1880. The iron industry promises to make even greater strides; in North Carolina, Tennessee, and especially in Alabama, abundant supplies of coal, iron, and limestone lie so near one another that pig iron can be made more cheaply there than anywhere else in America, and probably in the world. The production of southern pig iron increased from 397,000 tons in 1880 to 3,500,000 tons in 1910."

(Econ. Hist. Of U.S. Pp. 434-435)

Prof. W. W. Jennings:

"The early southern industries were: cotton ginning; wheat, corn, and rice milling; crushing of sugar-cane; distillation of turpentine and rosin; lumbering; and iron ore smelting. These industries did not require much skill and were closely connected with agriculture. The distinctively southern manufactures such as cotton ginning, rice milling, molasses making, sugar refining, and turpentine distilling steadily increased during the last decade. [1890-1900]. Four other industries, tobacco, lumber, cotton-seed oil and cake, and cotton increased rapidly. In 1899 the value of tobacco manufactured in the South was \$78,091,650 as compared with \$25,938,212 in 1879, a gain of 201.1%, or six times that of the United States as a whole. The leading southern producers were, in order: Kentucky, Virginia, North Carolina, and Florida. Kentucky was first in chewing and smoking tobacco and snuff, with North Carolina a close second. Florida led in cigars and cigarettes. Virginia was first in the stemming and re-handling of tobacco. The lumber and timber industry also increased more rapidly in the South than in any other section of the country toward the close of the period. In 1869 the value of the products was \$28,156,671; in 1899 it was \$185,727,890. The gain was 559.6%; during the last ten years of the period it was three-fourths of the entire increase registered for the nation. Although the industry was fairly well distributed, Arkansas easily led with products worth \$23,959,983; the other leaders were Tennessee, Louisiana, Texas and Mississippi, in the order named. In 1899 the South, reporting 363 of the 369 establishments for making cotton-seed oil and cake, enjoyed a virtual monopoly. For the country as a whole the products were

THE SOUTH (CONT.)

worth \$58,726,632 as compared with \$12,808,996 in 1889. The increase was 203.7%.

"Possibly the most marked sign of the new industrial South was found in the development of cotton manufactures. Although Massachusetts led all other states in 1899, as she had done from the beginning, her proportion of the whole steadily declined to 32.8% in 1899, while the production steadily grew in the Southern States, especially in South Carolina, North Carolina, and Georgia whose percentage increased from 6.2 of the total in 1879 to 11.7 in 1889 and to 22.6 in 1899. The main factors in this increase were the proximity of raw material, the abundant water-power (34.8% of power used), and the low cost of living. The rapidity of increase in the South is indicated by the fact that in the decades 1869 to 1879 the increase in value of products was 43.8%, 153.8%, and 128.8% as compared with 5.8, 28.9, and 7.8 in all the Northern States. The South also contributed 56.5% to the increase of spindles in the whole country, but the average consumption to the spindle in the Southern States was 164.4 pounds as compared with 72.9 in New England. The value of products to the spindle was \$22.09 in the South and \$14.91 in New England. The Southern goods, because they were of coarser character, averaged about 13.4 cents a yard; the New England products averaged \$20.4 cents. The eleven-hour working day in the Carolinas and Georgia, as compared with the ten-hour day in Massachusetts also tended to increase the consumption of each spindle."

(Hist. of Econ. Progress Pp. 448-449)

In all these considerations of the industrial development of the South, one must consider the handicaps under which it labored due to debts, lack of credit, the general aftermath of war, the unsystematized and destroyed railroads, the disorganized labor and so on. Under these circumstances the following figures are not surprising: Of the total value of manufactured products the South in 1859 produced 10.3%. In 1869 it produced 6.6%; in 1879, 6.3%; in 1889, 7.5%; and in 1899, 9.1%.

Growth in number of Spindles.

Year	South	United States.	(my calculations) % in South
1883	860,000	12,660,000	6.7 2
1890	1,605,000	14,405,000	11.1
1895	2,400,000	16,100,000	14.9
1898	3,550,000	17,450,000	20.3

(Statistical Record of Progress of U.S. 1800-1906 P. 88)

Growth of Manufactures: (In U.S.)

Year	Establishments	Capital	Value of Products
1870	252,148	2,118,208,769	4,232,325,442
1880	253,852	2,790,726,606	5,369,579,191
1890	355,415	6,525,156,486	9,372,437,283
1900	512,339	9,835,086,909	13,014,287,498

Localization of Manufactures:

In addition to migrating from the East to the West and the South, manufactures showed a strong tendency to localize itself to certain sections. The Report on Manufactures of the Twelfth Census gives the following reasons for localization:

1. Nearness to materials: Thus 84.4% of the entire oyster canning and preserving industry of the United States was done in Baltimore. Again, 48.1% of all the coke made was manufactured in the Connellsville district.

2. Nearness to markets: Thus 48% of all the manufacturing in the United States was carried on in Massachusetts, Connecticut, Rhode Island, New York, New Jersey, and Pennsylvania.

3. Waterpower: Hosiery and knit goods in New York.

4. Favorable climate: Thus the moist, even climate of New Bedford and Fall River has made those cities cotton centers.

5. Supply of labor: In New England there was plenty of labor because the farmers moved into the towns as their farmland became exhausted.

6. Supply of capital: "One of the causes which led to the establishment of the cotton industry in New Bedford about 1850 was the supply of local capital set free about that time by the decline in the whaling industry." (Vol. VII P. ccxii)

7. Momentum of an early start: Lynn, Mass., is one of the three great shoe centers in America because in 1750, John Adam Dagyr, "the celebrated shoe-maker of Essex", settled there and began making shoes which were as good as and better than the ones imported from Europe. (Ibid).

(Twelfth Census, Report on Manufactures, Vol. VII)

Table to show extent of localization. (1900)

Industry	State	% of total of U.S. made in that State.
Collars and cuffs	New York	99.6
Plated & Britannia Ware	Connecticut	75.7
Oysters (can. & pres.)	Maryland	65.9
Leather gloves	New York	64.9
Clocks	Connecticut	63.5
Coke	Pennsylvania	62.6
Safes and Vaults	Ohio	61.3
Whips	Massachusetts	60.4
Liquors, vinous	California	60.1
Brassware	Connecticut	54.1
Iron and Steel	Pennsylvania	54.0
Carpets & rugs (not rag)	Pennsylvania	48.0
Corsets	Connecticut	46.0
Boots & Shoes (factory)	Massachusetts	44.9
Agricultural implements	Illinois	41.5