

## CHAPTER XV.

### EXTENT OF THE COAL INDUSTRY.

The extent and importance of the industrial activities connected with or dependent upon the production of coal is seldom fully appreciated. It is known vaguely, perhaps, that in the state coal is one of the principal mineral resources, but beyond this no adequate conception is held in regard to the part played by it in the State's domestic economy. In the marketing of coal, its mining, storing and transportation, and in the operations necessary to be gone through with in getting the product to the consumer there is employed a much larger amount of capital and a much greater force of laborers than is commonly supposed. Mining alone gives employment to fully 9,500 men and upward of \$5,000,000 are annually expended at the mines for labor. In the other occupations which have to do with the taking of the output from the mines and the distribution of it to its final destination, the money employed and the men needed can only be roughly estimated, but it is known to exceed several times that directly connected with mining.

The deposits of mineral fuel in Iowa were brought to the notice of the world through the explorations of Dr. David Dale Owen, who was sent out by the Federal Land Office to survey the mineral lands of the Northwest. His report on the region occupied by Wisconsin, Iowa and

Minnesota appeared in the year 1852. In Iowa his most important exploration was made in canoes up the Des Moines river from its mouth to the Lizard fork near Fort Dodge. A number of localities were pointed out where good coal could be obtained. A few years later A. H. Worthen went over the same ground and called attention to a number of additional places in which coal was being taken out. Up to this time all fuel mined was for local use.

*Growth of the Production.*—In 1860 appeared the first attempt to gather definite information regarding the extent of the coal mined in Iowa. According to the figures of the report of the Eighth Census of the United States the valuation of the product for the previous year was \$92,180, representing about 48,263 tons. The production by counties was approximately as follows:

	TONS.	VALUE.
Appanoose .....	1,438	\$ 2,740
Boone.....	630	1,200
Davis.....	577	1,100
Guthrie.....	289	550
Hardin.....	262	500
Jasper.....	2,336	4,450
Jefferson.....	6,143	11,750
Keokuk .....	472	900
Lee.....	315	600
Lucas.....	945	1,800
Mahaska .....	3,412	6,500
Marion .....	1,548	2,950
Monroe.....	2,756	5,250
Muscatine.....	1,785	3,400
Polk.....	1,856	3,540
Van Buren.....	4,252	8,100
Wapello.....	17,062	32,500
Warren.....	2,283	4,350

The state census of 1862 gives a total somewhat less, though work had begun in a dozen counties more

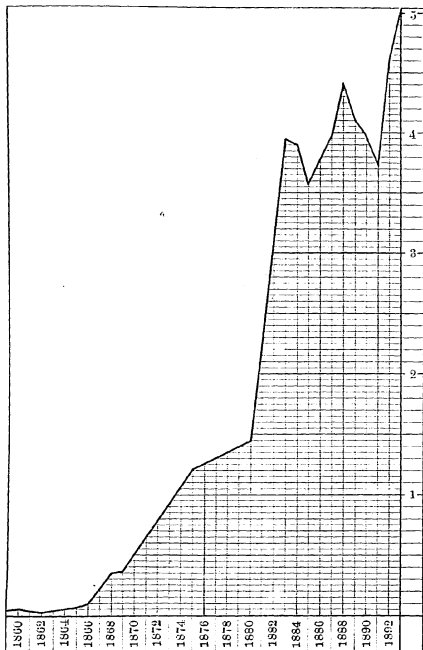


DIAGRAM SHOWING GROWTH OF THE COAL PRODUCTION.



than had been reported before. In 1865 the state record shows an output of 69,574 tons, which in the following year rose to 99,320 tons. In 1868 the output had become still larger, 241,453 tons being given for that year.

At the Ninth United States Census, of 1870, eighteen of the counties, chiefly small producers, were not enumerated, yet the total production, 283,467 tons, was a considerable increase over the state figures presented two years before. Coal had by this time assumed an important rank among the resources of the state, the value for this year being over half a million dollars.

The state census of 1875 showed that several new counties had begun to produce coal, and an output of 1,231,547 tons, valued at \$2,500,140, is recorded for that year.

The Tenth Federal Census, of 1880, indicated a total tonnage of 1,461,166 for the census year, the product being valued at \$2,507,453. This was a total of more than five and one half times the amount mined a decade previous. By the year 1883 the amount of coal mined had increased to 3,979,946 tons. For the next four years the annual output remained about the same. In 1888 great activity was developed in the coal industry, the production for that year reaching the grand total of 4,421,822 tons. The two years following showed a slight decrease, the output for the former year being given by the Eleventh Census of the United States as 4,095,358 tons, and for the latter by the state mine inspectors as 3,980,502. This still farther decreased in 1891, the latter authority giving 3,721,981 tons as the output for that year. Since then the increase has been quite marked.

In 1892 the output reached a total of 4,047,479 tons, as given by the mine inspector's report, and in 1893 the returns

to the Iowa Geological Survey show a total of 5,043,007 tons. Between the years 1879 and 1889, as indicated by the United States census reports, the advancement of the coal product of the United States was 37 per cent. Iowa in the same period increased her product 279 per cent.

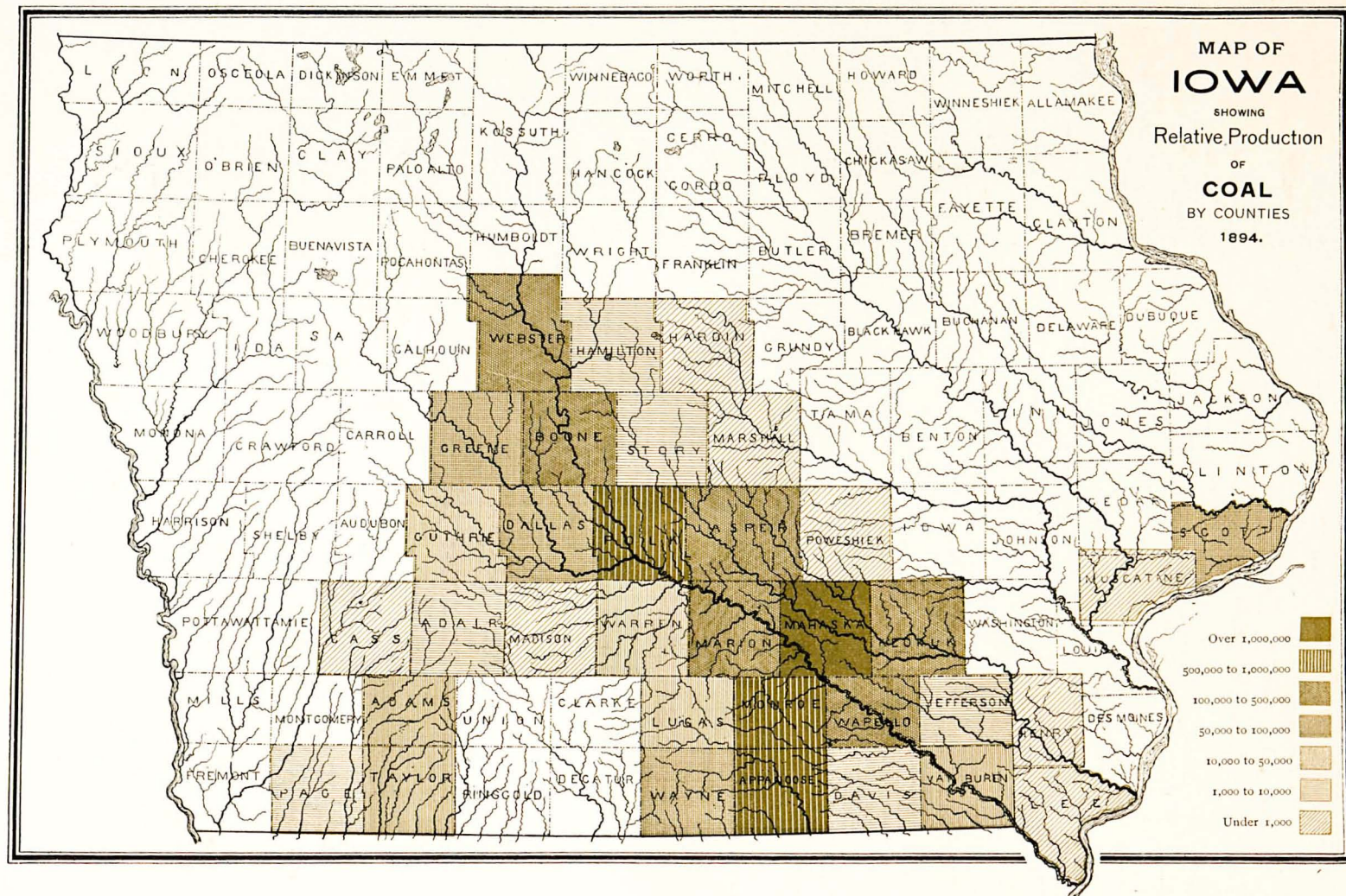
The apparent decrease during the years 1889-91 was due largely to strikes, and in part also to the importation of a considerable quantity of Illinois coal, which by means of the low rate of transportation obtainable for certain river points was able to compete successfully with the home product.

During the last two years a large number of new mines have been opened. The development has not been due so much to the discovery of new fields as to closer prospecting and better work in coal territories already opened.

The returns for the last year cannot be compared with those of other states, as no results from them are yet published. In 1889, however, as shown by the Eleventh Federal Census, the rank of the different coal producing states was as follows :

1. Pennsylvania.....	81,700,000
2. Illinois.....	12,100,000
3. Ohio.....	9,900,000
4. West Virginia.....	6,200,000
5. Iowa.....	5,000,000
6. Alabama.....	3,300,000
7. Maryland.....	2,900,000
8. Indiana.....	2,800,000
9. Missouri.....	2,500,000
10. Colorado.....	2,300,000
11. Kansas.....	2,000,000

From the foregoing it will be noted that as a coal producer Iowa ranks first among the states west of the Mississippi river, and fifth among the states of the Union.







*Number of Mines and Value of Product.*—The coal mine operators employing ten men and upward are nearly 400 in number. Small owners having less than ten employees probably would increase the total number of separate organizations engaged in mining coal to something over 500.

A large majority of the mines have only a small output. Some, however, have a capacity of 1,000 tons daily and a few mine even a larger quantity. The companies having the largest output usually work several mines of smaller capacity rather than concentrating the work in one plant. The total output for 1893 of over five millions shows a very considerable increase over that of former years. The value of this amount of coal may be safely estimated at nearly eight million dollars.

*Localities.*—The most productive coal region of Iowa, as has already been stated, is a broad belt running approximately along the Des Moines river from the southeastern corner of the state to Fort Dodge, in Webster county. In 1893 twenty-four counties produced coal in commercial quantities. Arranged in the order of their rank they are as follows:

1. Mahaska.....	1,093,530
2. Polk.....	693,103
3. Appanoose.....	650,775
4. Monroe.....	648,300
5. Marion.....	329,168
6. Jasper.....	293,400
7. Wapello.....	284,660
8. Keokuk.....	270,350
9. Boone.....	267,310
10. Webster.....	249,100
11. Wayne.....	47,121
12. Taylor.....	35,570
13. Dallas.....	33,800
14. Van Buren.....	26,300

15. Greene.....	25,200
16. Adams .....	20,085
17. Guthrie .....	19,080
18. Scott.....	16,500
19. Warren.....	14,725
20. Lucas .....	12,330
21. Jefferson.....	7,140
22. Davis.....	2,620
23. Adair.....	1,840
24. Page .....	1,800

These figures, arranged geographically into districts which are fully described farther on, indicate the relative productiveness of the different sections of the state at the same time.

Northcentral Iowa, comprising the counties of Humboldt, Webster, Hamilton, Hardin, Greene, Boone, Story, and Marshall, 541,610 tons.

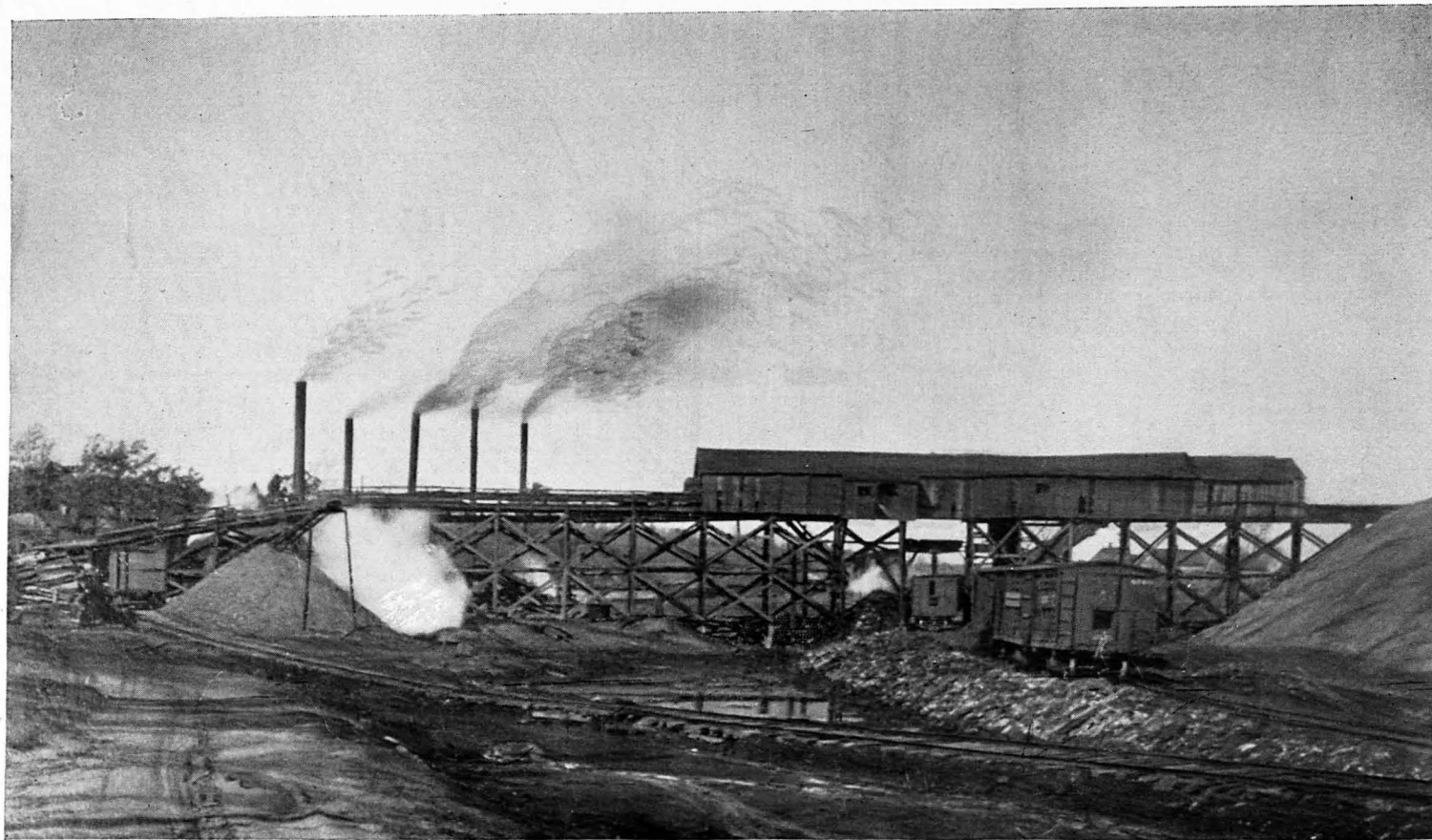
Central Iowa, including the counties of Guthrie, Dallas, Polk, Jasper, Poweshiek, Madison, Warren, Marion, and Mahaska, 2,476,806 tons.

Southeastern Iowa, counties of Keokuk, Lucas, Monroe, Wapello, Jefferson, Henry, Wayne, Appanoose, Davis, and Van Buren, 1,949,596 tons.

Southwestern Iowa: Shelby, Audubon, Pottawattamie, Cass, Adair, Mills, Montgomery, Adams, Union, Clarke, Fremont, Page, Taylor, Ringgold, and Decatur counties, 59,295 tons.

Eastern Iowa (counties containing outliers): Iowa, Johnson, Scott, Muscatine, Washington, Louisa, Des Moines, and Lee, 16,500 tons.

A comparison of the output of the various counties shows that central Iowa is the most productive portion of the field. Next to it is southeastern, and after that north-central Iowa. A review of the output in past years shows that there has been a movement of the industry from the



TOP WORKS OF TYPICAL SLOPE MINE.—EVANS



northern to the southern counties as well as a corresponding movement westward from the Mississippi. At present the main industry is concentrated in the Des Moines valley. The considerable difference between the productiveness of the Lower and Upper Coal Measures is also shown in the same table. These various facts are well brought out in plate xv, graphically representing the present productiveness of the various counties.

#### PRESENT TERRITORY SUPPLIED.

*Markets.*—By far the larger proportion of the coal mined in Iowa finds its market within the state, a considerable portion not leaving the county within which it is mined. In 1889 the production of coal in the state was 4,095,358 tons, while the consumption was only 3,411,044 tons, leaving a balance of 648,314 tons, or about sixteen per cent of the total product, to be marketed elsewhere. Applying this same percentage to the output in 1893, a total of 806,881 tons are found to be sent out of the state. It seems probable, however, that the per cent exported may now be somewhat greater, though there is not sufficient data at hand to give the exact increase. This brings into the state annually between one and two million dollars, and aids quite materially in building up the various industries directly or indirectly dependent upon coal mining.

The greater portion of the coal exported is sent north and west, to Kansas, Nebraska, South Dakota and Minnesota; a small amount is sent to Missouri and occasionally some to Illinois. During the present summer the trade with Kansas has been particularly brisk, owing to the strike in the coal region of that state. Probably Nebraska usually takes more of the Iowa coal than any other state.

The competition met here is principally that of Illinois, though the Kansas and Missouri mines supply part of the trade. Farther north, in South Dakota and Minnesota, eastern coal comes into competition, especially for domestic uses; the greater heating power and cleaner character of the Pennsylvanian anthracite being considered to counterbalance its greater cost.

Wherever a cheap coal is desired the Iowa coal operators are usually able to command a fair share of the trade. It seems reasonable to expect a continued steady growth of the export trade and a considerable enlargement of the market as new territory is opened up and better shipping facilities are provided.



TOP WORKS OF TYPICAL SHAFT.—HEITMAN.

