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MINERAL PRODUCTION IN U. S.

MINERAL PRODUCTS

The nation's mineral output has a value of five to six billion dollars a year. In 1925 the value was \$5,677,630,000, and nearly half of this huge total was produced in five states, Pennsylvania, Oklahoma, California, Texas and West Virginia. In the table which appears elsewhere in this issue the states are ranked according to the value of their mineral products. In this table iron ore, not pig iron, is taken as the basis of iron valuation and in the case of other metals the recoverable content is the basis of evaluation.

Pennsylvania, with its wealth of coal, natural gas, cement and clay products, is the leading mineral producing state. Oklahoma and California, with their extensive oil fields are second and third in rank. Texas, in addition to its petroleum and gas wells, has rich sulphur deposits. West Virginia is rich in both coal and oil. Ohio and Illinois both produce coal, petroleum, gas, cement and clay products. These seven states produce over three billion dollars worth of minerals annually.

Minerals in the South

Not only are there three Southern states among the leading five mineral producing states, but several others rank among the first half. Kentucky ranks ninth, Missouri sixteenth, Arkansas seventeenth, Alabama twentieth, Louisiana twenty-third and Virginia twenty-fourth. These six states produce, however, less than the single state of Oklahoma.

North Carolina has a great variety of minerals but few in sufficient quantity to make commercial mining profitable. According to the United States Bureau of Mines North Carolina's total mineral output in 1925 was only \$9,504,063. This is in disagreement, however, with the report of the State Department of Conservation and Development, its estimate being \$10,699,442. Even if we accept the more favorable report the total is not large, nor would it affect North Carolina's rank of thirty-seventh among the states. The encouraging thing is that North Carolina's mineral output is increasing rapidly. Its products include building stone, sand and gravel, clay products, feldspar, mica, coal, and some iron ore.

Asbestos

According to State Geologist R. J. Bryson, there are a number of deposits of asbestos in the western part of the state, probably the largest and most promising one being in Avery county. In 1919, North Carolina held third rank in asbestos production in the United States, but at that time all of the material was shipped out in crude form. Mr. Bryson reports that in recent years deposits of the mineral have been found in Ashe, Yancey, Avery, Caldwell, Macon, and Jackson counties.

An asbestos plant, which is a new industry for North Carolina, is being erected at Minneapolis, Avery county, by the National Asbestos Company. It will have, according to newspaper reports, a daily capacity of thirty tons and the outlook for the success of the venture is promising. The asbestos found in Western Carolina is not of as fine quality as the Canadian type, nevertheless it can be used for many purposes. The principal uses of the North Carolina variety are asbestos cement products, asbestos shingles, heat insulating cements, ingredients for paints, filtering, and packing.

Brick and Stone

There is an increased interest and development in the clay and stone industries. This is especially true of clays of the slate belt for brick and tile purposes, of granites and rhyolites of Orange and Moore counties for building and road work, and of the marble quarries in Cherokee county.

North Carolina leads all other states in the production of feldspar, and, according to the report of the state geologist, has produced from thirty to fifty percent of the total output for several years. North Carolina ranks relatively high in the production of mica. There are scattered deposits of gold in the state, though the seams have been too deep or the content too

slight to make gold mining commercially profitable. There is a great variety of precious stones in the state, but not extensive enough in amount to warrant commercial mining. North Carolina's minerals have been characterized as nature's sample case, and that is a very satisfactory description.

The brick and terra cotta industry could perhaps be further developed, and also a greater use be made of the native building stone. The construction of the Greater Duke University from native stone offers a demonstration of its possibilities. North Carolina has no great mineral wealth, but it has a variety of mineral products whose exploitation may develop local industries of importance.—Paul W. Wager.

THE FARMERS FEDERATION

The Farmers Federation of Western North Carolina has now been in existence seven years. Throughout this period it has continued to expand in the range and usefulness of its activities. It has been responsible for bringing hundreds of thousands of dollars of additional wealth to the farmers of Western Carolina. The seventh anniversary number of the Farmers Federation News contains an article from which we have chosen the following extracts:

"The Farmers Federation was organized to serve mountain farmers in the purchase and distribution of farm necessities and in the marketing of mountain farm products...The Federation is a capital-stock organization and operates a chain of eight distributive warehouses, two of which do a wholesale business.

"The Farmers Federation is operating under a sound economic policy when it combines its production and marketing projects. This is especially important in Western North Carolina where there is a diversity of production, consisting mainly of perishable products.

"There is nothing more apparent than the fact that enlarged dairy production in the mountain counties depends very largely upon group organization for collective bargaining. Milk and cream sales organizations must be firmly and closely knit together so that collective bargaining may be the potent power for obtaining profitable prices. Without collective bargaining in the sale of dairy products there is very little prospect for making Western North Carolina the leading dairy section of the South, as it should be, and will be, when dairymen become strongly organized.

The Poultry Yard

"The goal of the Farmers Federation is to make Western North Carolina the poultry yard of the South. The distribution of approximately 400,000 baby chicks from the Federation hatchery is a big step toward this achievement. For the last twelve months the poultry industry in the territory served by the Federation has grown by leaps and bounds. Since small farm flocks of 50 to 200 hens are more profitable than large commercial poultry plants, the Federation is seeking to establish the poultry industry on every farm in its territory. This industry in the mountain counties is second only to the dairy industry, and in many communities it excels the dairy industry as a source of income.

"While dairy and poultry farming represent the major production projects in the mountain counties, there are vast undeveloped opportunities for supplementing the payroll that comes from the sale of dairy and poultry products in the production of vegetables for the markets during the hottest summer months, when southern lowlands do not produce many vegetables for consumption or for fall storage. The mountain coves and slopes offer practically a northern climate and they are near to the fast-growing manufacturing and mercantile markets of the Southland."

FOREST PROTECTION

With thirty counties already active in forest fire prevention work starting

AN INVENTOR'S BELIEF

The smooth and steady motion of the piston in the boiler-room, assisting the trained hand of man in the factory; the roaring furnace flames in the foundry announcing the birth of beautiful castings; the radiating chaos of our central star, the sun, sustaining the ceaseless terrestrial cycles of coordinated energy movement; the messages transmitted to man by the galaxy of stars, proclaiming the lavish expenditure of their inexhaustible store of energy as a preparation for higher forms of creation; all of them tell the same joyous story which Tyndall first told me fifty years ago, the story of transformation of the primordial chaos into a cosmos, a universe of beautiful law and order. This is also the story of the universe of organic life. The truth which this story reveals was recognized intuitively by man since the very beginning of civilization and, guided by the power of his creative soul, he began to dream of a social cosmos which makes life worth living. The awakening of this beautiful dream is the birth of Church and State, guided by the love of God and of fellow man these social coordinators will certainly give us a social cosmos, the realization of the highest aspiration of the human soul.

From this point of view science, religion, and the fine arts, as expressions of the intellectual, spiritual, and esthetic coordination of the creative power of the human soul are three inseparable parts of a single science, the Science of Creative Coordination.—Michael Pupin, Columbia University, in Scribner's Magazine.

with the beginning of the fiscal year on July 1 and others preparing to inaugurate the system, the ensuing twelve-month period is setting a record in the state.

The largest area in the history of the State Forest Service is now under the protection of organized forest fire prevention systems.

Provisions have been made in the budget for this year for the work in 34 counties and from the interest that is being manifested in a number of counties there will be no difficulty in filling the allotted quota.

Figures of the Forestry Division show that the counties have provided a fund of around fifty percent more for this fiscal year than for the preceding twelve-month period. This year the cooperating counties have made available \$21,800 to match State and Federal funds, while last year only \$14,600 came from these sources.

Quickened interest in forest fire prevention has not been confined to the counties, but is manifest in individual cooperation from large landowners and corporations, which have more than doubled their previous appropriations, with \$5,500 as compared with \$2,400 for the previous year.

The individual cooperation for this fiscal year is featured by the organization of two large associations, covering an area of approximately 120,000 acres. One of these is located in Moore County and the other in the Great Dismal Swamp area. The Moore County Association area is to consist of approximately 50,000 acres, while there are 70,000 acres in the North Carolina protective section of the Great Dismal Swamp.

An outstanding development in forestry in North Carolina for the present fiscal year is the organization of the fifth forest fire district in the northeastern section of the State.—Natural Resources.

FIRE WASTE

The national fire loss from all causes amounts into hundreds of millions annually, and the great bulk of this waste is preventable. Flimsy construction, the shingle roof, the carelessness of workmen and the carelessness of the smoker—these things destroy many fortunes in a year. The carelessly placed match and the smouldering cigarette end cost America 'thirty millions in a year.

Gradually, perhaps, the United States is overcoming the fire demon. But not until we have developed a national antipathy to waste, the waste that is the besetting economic sin of the country, can we hope to banish the monster entirely.—Kinston Free Press.

NOTES ON PUBLIC EDUCATION

9. CONSOLIDATED SCHOOLS

There are approximately 160,000 one-teacher schools in the United States. The number is decreasing steadily. More than 10,000 of them were closed in the biennium 1922-1924. They are growing into larger schools, or are being united with other schools to form central graded village or open country schools. These larger rural schools gain in number as the smaller ones diminish in number. More than 2,000 were formed during the biennium 1922-1924. At the present time there are approximately 15,000 consolidated schools in the United States. They have long been recognized as a means for providing rural children with educational opportunity equivalent to that provided city children.

Consolidated schools, or districts, are established in various ways. The most common method is to proceed under detailed laws by which the patrons of the schools start the movement and vote upon it at a regular or special election. If a majority of the votes cast in each district, or better, a majority in all the districts or territory included, are in favor of the consolidation, it is effected. Each of the uniting districts gives up its district boundaries and school board and becomes part of the one large district. The advantages of such a procedure are that it arouses the interest of an entire community; the consolidation is thoroughly talked over, and if the school is established it is fairly sure to be a strong one.

Union high schools are established under laws which permit a number of districts to retain their own elementary schools, while all join in maintaining one central high school. The laws responsible for such schools, most common in the western states, have resulted in the establishment of some very fine schools. In small communities and sparsely settled regions such schools are not feasible, but in more densely populated areas the union high school serves well.

In some states independent, special, and consolidated school districts are created by special acts of the legislature. The procedure is generally unsatisfactory. It postpones the development of the organization of larger areas, tends to create many small systems, and generally acts to interfere with equalized educational opportunity.

In the states organized on the township basis the schools are directed by township boards of trustees. There is, however, no adequate provision for establishing schools on community rather than township lines. The township is often too small a unit territorially and financially for the establishment of satisfactory schools, and particularly for high-school facilities. In several states organized on the township basis there is a movement for change to a larger unit. One reason for the change advanced is the possibility of securing thereby more effective consolidated units.

Among the important state laws relating to consolidation are those which provide for the following:

1. The establishment of minimum limits of area served, enrollment, average daily attendance, and length of term below which a school or district may not be created, or if created may not continue its existence.

2. An effective, quick way of uniting schools or districts, preferably in response to local demand, retaining for the united institution the full amount of apportionments the separate units would receive, arranging for an equitable assumption of any indebtedness, and providing for the proper disposal of any unnecessary school property.

3. Centralized authority for the planning and carrying out of programs of consolidation over large areas, thereby insuring equitable distribution of resources and school facilities, and adequate consideration to schools in isolated or backward strips of territory.

4. The authorization of the junior high school with a view to centralizing the work of the upper elementary grades when full consolidation is not feasible.

5. Restrictions on the number of senior high schools established, adequate to insure strong schools, with tuition and transportation, or board and room, provided for those students who do not have easy access to such a school.

6. Permissive transportation of pupils at public expense to and from all schools.—United States Bureau of Education.

MINERAL PRODUCTS

The States Ranked According to Output in 1925

In the following table the states are ranked according to the value of their mineral products in 1925. In that year the total value of minerals amounted to \$5,677,630,000.

Pennsylvania, with its huge output of coal, natural gas, cement and clay products, ranked highest as a mineral producing state. Its mineral production for the year amounted to \$867,196,142, or 17.40 percent of the nation's output. Oklahoma, with its great oil fields, ranked second. The small seaboard states of Delaware and Rhode Island were the two lowest in mineral production, their outputs being \$539,261 and \$1,151,857, respectively. North Carolina, with minerals to the amount of \$9,504,963, ranked thirty-seventh. Its mineral products include building stone, sand and gravel, feldspar and clay products.

The facts here presented are based on figures supplied by the Bureau of Mines, United States Department of Commerce.

Paul W. Wager

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Rank	State	Value of minerals in 1925 (in millions)	Percent of total	Rank	State	Value of minerals in 1925 (in millions)	Percent of total
1	Pennsylvania	\$867.2	17.40	25	Tennessee	38.9	.78
2	Oklahoma	501.8	10.07	26	Iowa	38.4	.77
3	California	496.9	9.97	27	Idaho	31.6	.63
4	Texas	351.2	7.05	28	Nevada	26.5	.53
5	West Virginia	333.5	6.69	29	New Mexico	26.5	.51
6	Ohio	247.5	4.97	30	Washington	22.4	.45
7	Illinois	231.7	4.65	31	Maryland	21.6	.43
8	Kansas	142.9	2.87	32	Wisconsin	19.2	.39
9	Kentucky	131.2	2.64	33	Massachusetts	16.8	.34
10	Michigan	122.2	2.45	34	Florida	16.6	.33
11	Arizona	114.2	2.29	34	Georgia	16.5	.33
12	Indiana	111.8	2.24	36	Vermont	14.4	.29
13	Minnesota	110.3	2.21	37	North Carolina	9.5	.19
14	New York	102.0	2.05	38	South Dakota	8.0	.16
15	Utah	100.3	2.01	38	Oregon	7.8	.16
16	Missouri	92.5	1.86	40	Connecticut	6.8	.14
17	Arkansas	87.2	1.75	41	Maine	5.8	.12
18	Montana	79.3	1.59	42	South Carolina	3.5	.07
19	Wyoming	78.8	1.58	42	New Hampshire	3.4	.07
20	Alabama	77.1	1.55	42	Nebraska	3.3	.07
21	New Jersey	76.8	1.54	45	North Dakota	2.7	.05
22	Colorado	63.1	1.27	46	Mississippi	2.2	.04
23	Louisiana	60.5	1.21	47	Rhode Island	1.1	.02
24	Virginia	41.0	.82	48	Delaware	.5	.01