

P427

WEST VIRGINIA

*One of America's
Most Astounding
Concentrations
of POWER-WEALTH
- OPPORTUNITY*



Copyright, 1929
State of West Virginia, William G. Conley, Governor
Department of Agriculture, John W. Smith, Commissioner
Charleston, W. Va.
Edited by Ross B. Johnston

FOREWORD

WHY THIS BOOK WAS WRITTEN



HERE has been, of late years, an avalanche of "booster booklets," written to herald and exploit the advantages of many and varied geographical sections of the United States, and aimed to attract those vitalizing qualities of industry and commerce so necessary to any region that wants to grow and become more prosperous.

There have been other books, perhaps without distinction in so far as casual observation is concerned, which have had the same goal but which have approached this goal in a different frame of mind.

The distinction has been that one booklet takes root in facts and conclusions pertinent to the requirements of those whose interest is sought, whereas the other begins and ends only with the viewpoint of those who do the seeking.

Please do not misunderstand. We West Virginians are proud of our State. We are selfish to the extent of wanting to attract those forces of industry and commerce which West Virginia's resources may merit. Deeper, however, than our admitted desire to "cash" the resources which lie within our boundaries, is our interest in the underlying problem of business today—the *problem of efficient operation for the sake of more desirable and more secure profits.*

We shall endeavor to present West Virginia's case in the terms of modern business and demonstrate her right to ask consideration of prospective investors on

the basis of such assets as would appeal to the most critical business engineer or the most cautious executive.

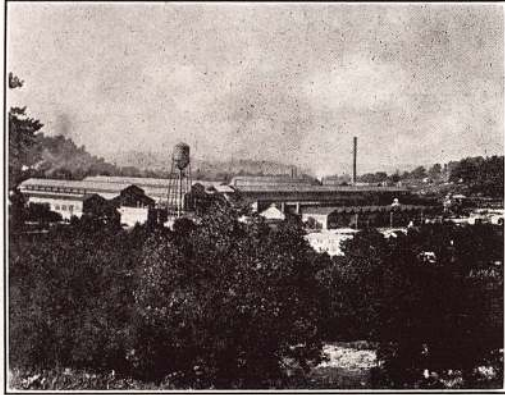
America, as we all know, abounds in wealth—cash and uncashed. American minds have translated American resources into the highest, most profitable standards in the world.

Yet today there is a common word on every tongue: "Competition." There is a common thought in every mind: "The rising expense of doing business." There is a common factor in almost every business: "The surprising fluctuation in gross and net returns."

Now the question that we are interested in, is this: Is business today, under the conditions of competition already referred to, primarily a question of distribution, as some say it is? Is the whole, or at least the major improvement, down the avenue of distribution? Or does the question of production, and all its allied influences, still play a highly important role?

In short, we ask this: In how many businesses today do profits, gained by clever strategy and improved methods in distribution and selling, come in the front door only to run out again at some exit labeled FUEL, LABOR, RAW MATERIALS, POWER, TRANSPORTATION, CLIMATE and other subjects related to production and the realm of industrial engineering?

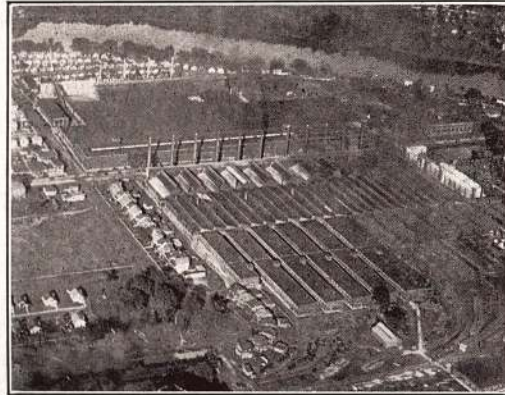
With this question in mind, this booklet has been written.



International Nickel Plant, one of many internationally known industries



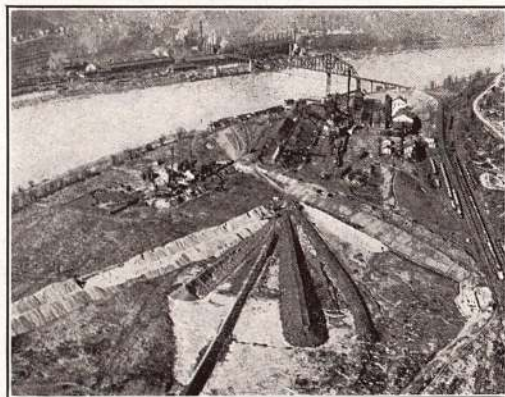
*Cloth and cloth products are worth \$20,000,000 annually—
The Interwoven Hosiery Mills*



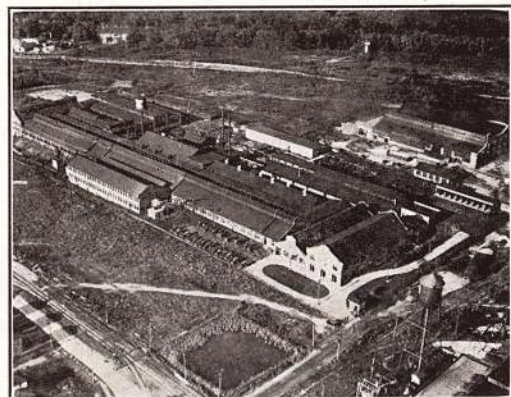
Such glass plants as these mean \$50,000,000 in products every year



West Virginia steel products total \$100,000,000 yearly



By-product coke plant, East Steubenville, represents limitless possibilities



West Virginia has two of the world's largest tool making plants

SEVEN WAYS TO WIN OR LOSE A PROFIT



SELLING is said to be one job—production, another. And yet, to unscramble the two; to say where one leaves off and the other begins, is often a difficult task.

Selling may be said to be a matter of quality, price, delivery, etc. Who can deny, though, that Fuel and Labor, Transportation and Proximity of Markets are bound up in the selling price, the quality, the delivery date, the sales volume, and, more important, the over-shadowing question of whether or not the business can be operated at the level of efficiency which will produce a worthy return on the amount that has been invested.

We would, therefore, direct your attention to seven ways in which a business may win or lose a profit:

Markets	Labor
Power	Fuel
Transportation	Raw Materials
	Climate

There are other noteworthy ways, of course. The seven presented here, however, have such far-reaching tentacles that maladjustment on any one of them will place a barrier at the front door of any place of business.

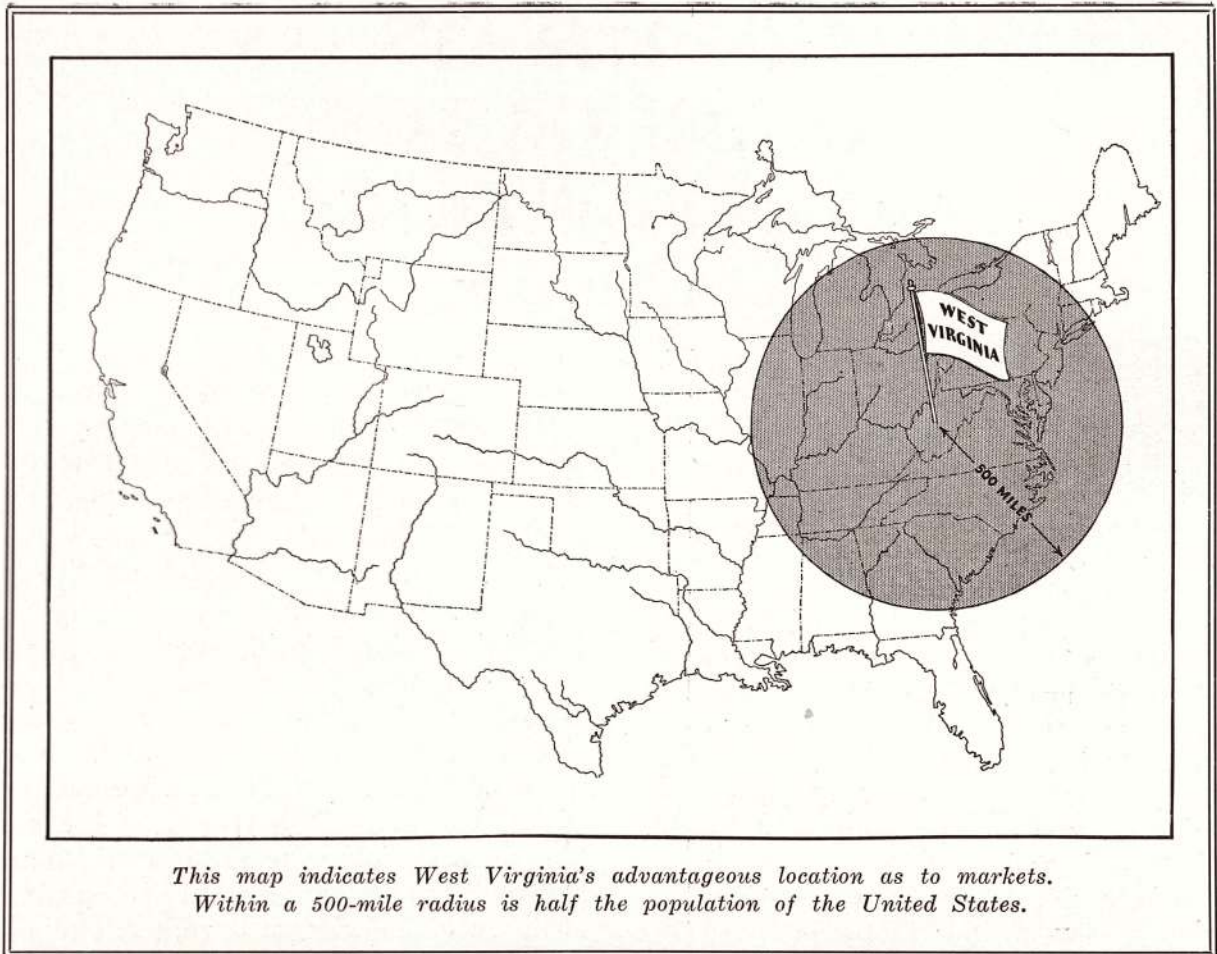
Sometimes this barrier is only an irritation. Frequently it makes competition twice as strong as it would be under more favorable conditions. Occasionally it prevents expansion. Again, it inflates the cost of doing business and whittles down the net reward, giving the management what is popularly known as the "squirrel cage feeling," because of the fact that regardless of how fast they "spin the cage," they arrive always at the same place.

Frequently, maladjustment causes situations that "bog" a business almost before the business realizes what is happening. Then, wheels that have been expensively set in motion, are stopped and readjustments, which never should have been necessary, are expensively undertaken.

Two excellent examples come to mind. A certain business decided that raw materials were the deciding factor in the location of a plant. Some time later—too late, in fact—they found out the importance of transportation. Freight costs became the one item of major importance, all because the raw materials were far from the markets and the plant was located with thought of the one and neglect of the other. Freight rates boosted selling prices; kept them rigidly above competitive levels, and the resulting sales friction caused a distribution hot-box which no "oiling" could cool.

The other business (an industry really) was correctly located a generation ago with respect to both raw materials and market. Transportation was ideal. Fuel, okeh. Labor, good. Climate, satisfactory. Power, cheap. Gradually at first, and more speedily of late, the raw materials began to stray afield. No other condition changed. The one change was enough. Costs went up. More vigor was put into selling. Gross totals expanded. Nets continued low.

The management experienced "that squirrel cage sensation." And one of the most interesting projects (entailing expense, of course) which this business has on foot today is a plan which will try to persuade the raw materials to locate nearer their original base.

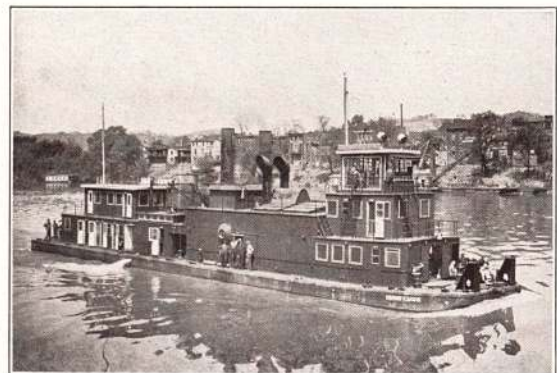


Today few businesses have perfect working conditions. Yet the modern business executive must constantly seek to clear away obstacles hampering his operations. Consideration must be given all the factors previously mentioned since they are fundamental to business success. The future will see business moving toward that location which presents the fewest handicaps to industrial operations.

We realize, of course, that the re-location of an established business is so serious a matter that it can be viewed only as a last resort. On the other hand, with all sincerity, we do know of businesses which worry continuously about their problems in terms of "a change in management," "more modern selling," "more advertising," "more capital," "closer credits"—when a readjustment, not in these directions but in the direction of Fuel and

Power, Labor and Climate, Market and Transportation, and Raw Materials, would change the whole complexion of the future.

Most certainly the new business, or the business that is planning a new line of production, will do well to look at these factors *first*—and, as we shall hope to point out, look *first* to West Virginia.



Testing out West Virginia-built boat burning powdered coal on Kanawha River

RIGHT IN THE CENTER of AMERICA'S RICHEST MARKETS



ONCE you begin to study West Virginia, you are impressed with the fact that it is located at one of the most strategic positions in the United States with respect to markets.

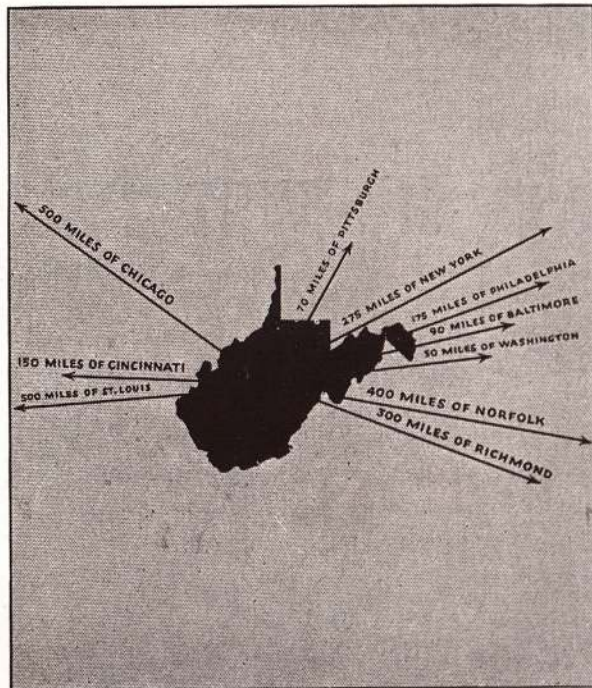
A 500-mile circle, drawn about the geographical center of the State, encloses almost half of the population of the country, and better than half of the wealth, manufacturing establishments, wages, incomes and other "yardsticks" of opportunity. Study these market advantages.

Midway between the markets of the North and South, West Virginia is literally "over-night from everywhere." The State at the nearest shipping point is within—

- 50 miles of Washington
- 70 miles of Pittsburgh
- 90 miles of Baltimore
- 150 miles of Cincinnati
- 175 miles of Philadelphia
- 275 miles of New York
- 300 miles of Richmond
- 400 miles of Norfolk
- 500 miles of Atlanta
- 500 miles of St. Louis
- 500 miles of Chicago

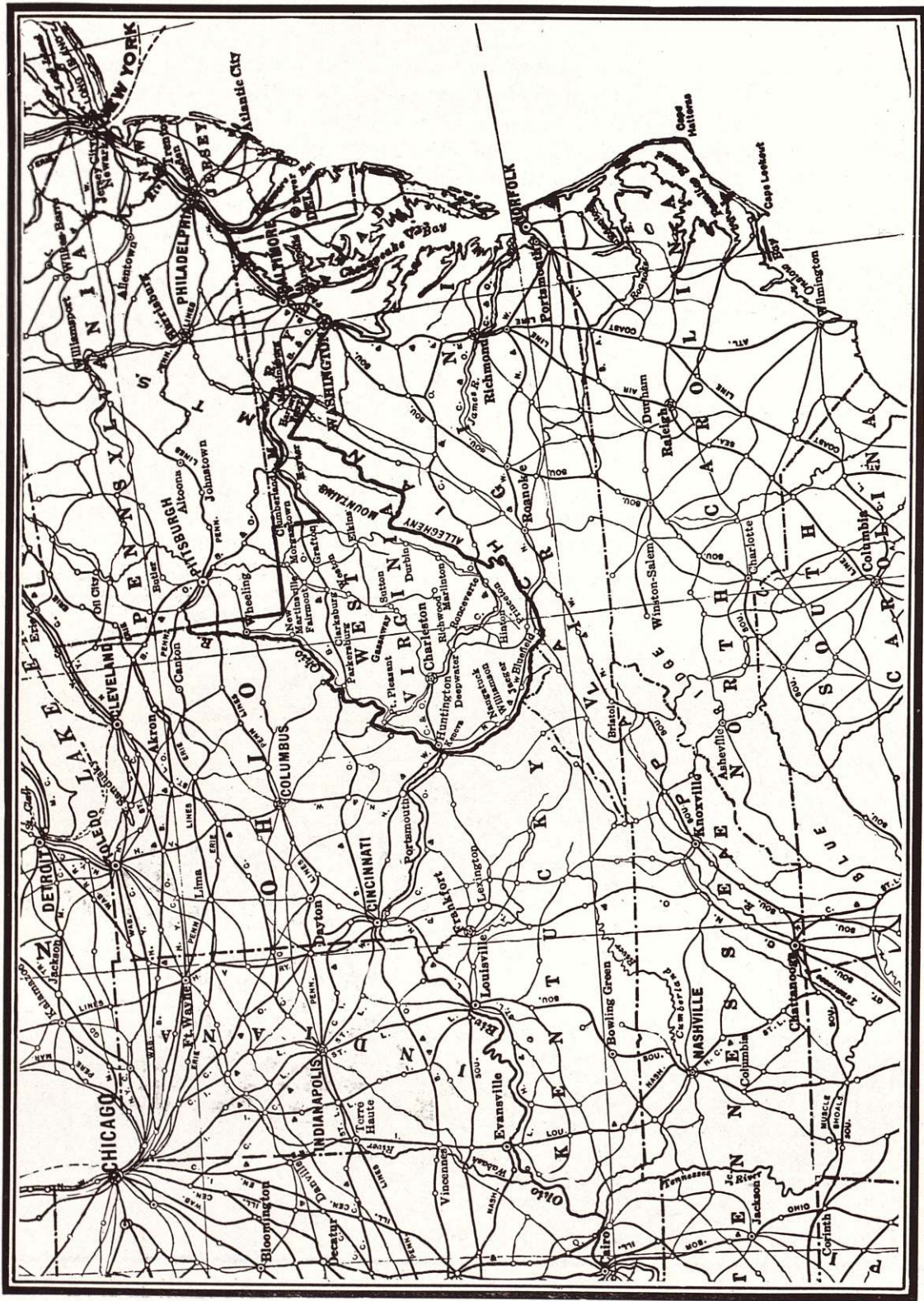
Because of its excellent market-location, and because of its astounding natural resources, which provide fuel, power and chemicals, West Virginia is being given thoughtful consideration by many of America's foremost industrial groups and also by Russian, German and English financiers who are studying the United States in order to locate most advantageously the industrial establishments which they have planned for the markets of this continent.

Not only the United States, therefore, but the world at large is awakening to West Virginia's potentialities—the potentialities which induced the United States government to establish a 25 million dollar armor plant here and which have brought to us, in West Virginia, during the last few years, a steady stream of new industries, representing tremendous investments by corporations doing business on an international scale.



Short distances to great market centers

Nowhere in America, and certainly nowhere in so limited an area, can industry find a greater cache of power, wealth and opportunity than within the 24,497 square miles that comprise West Virginia.



West Virginia is served by the major trunk line railroads of the eastern United States

TRANSPORTATION



ATER, rail and highway unite to give West Virginia unexcelled transportation facilities.

The Chesapeake & Ohio, the Baltimore & Ohio and the Norfolk & Western railroads cut the State from east to west with trunk lines.

The New York Central, Virginian, Pennsylvania, Western Maryland and other railways also serve the State.

ONE MILE OF RAILWAY for SIX OF AREA

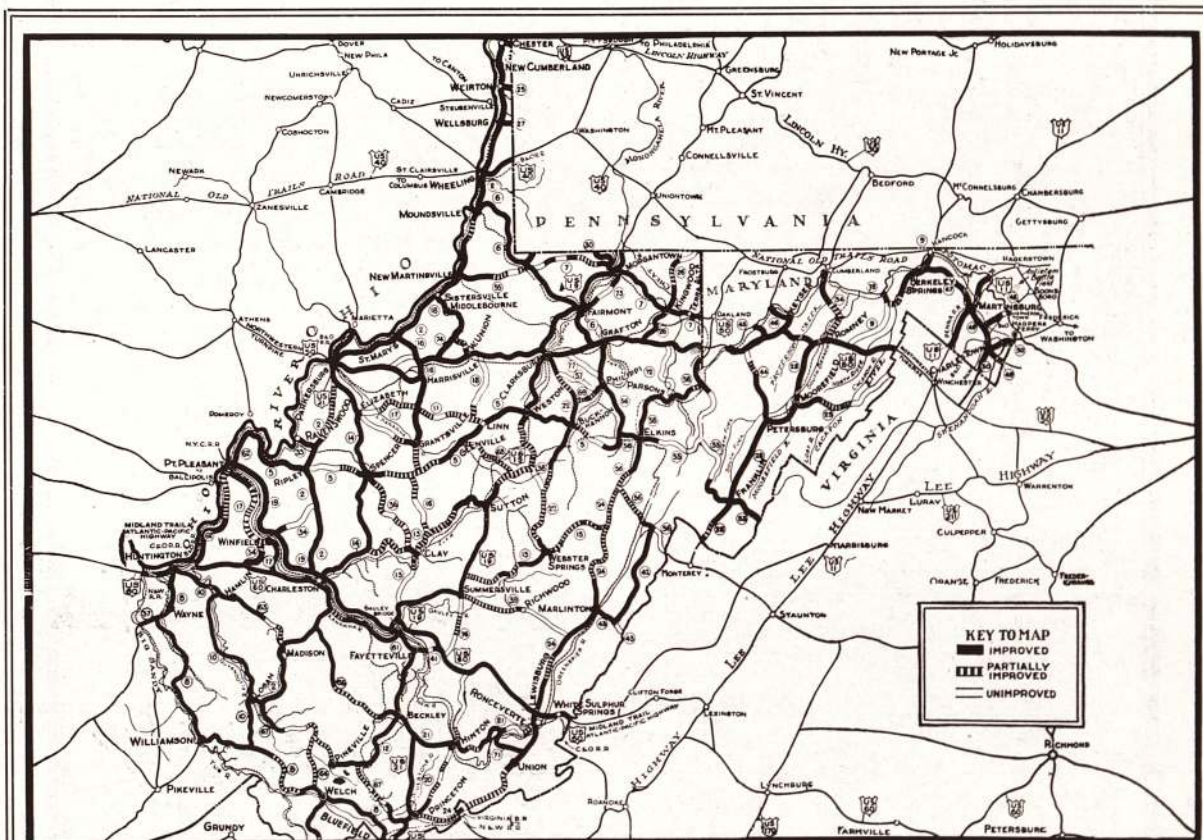
WITH more than 4,000 miles of main line railway, West Virginia has one mile of railway for every six square miles of area. All trackage exceeds 6,900 miles.

From the viewpoint of both freight and passenger service, West Virginia is second to no other state in the country. One of the great trunk railways serving the State holds a national record for freight car movement. Passenger train frequency and equipment are equal to any in America.

RIVER TRANSPORTATION

INDUSTRY'S intense interest in water-borne transportation is another reason why the eyes of commerce are focusing on West Virginia.

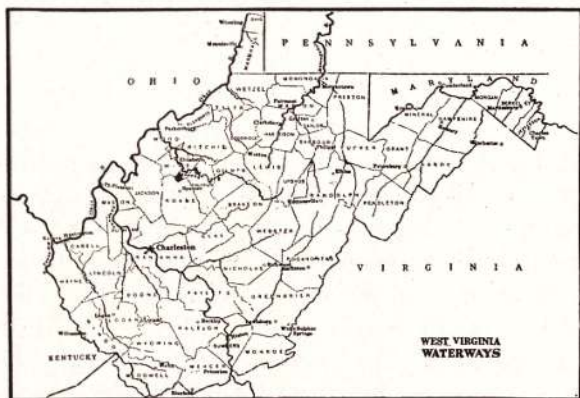
At the present time, the State has more than 450 miles of waterways open to navigation the year round. The National Bu-



West Virginia is spending \$100,000,000 on a highway system that will link up every one of the 55 county seats

reau of Commerce and Labor credits West Virginia with 748 miles of streams that can be made navigable.

The entire Ohio River system with its 9-foot stage annually carries water freight in excess of 48 million tons. The Monongahela, which taps the coal fields of northern West Virginia, has a 6-foot stage as



Many streams offer cheap water power and year-round transportation

far inland as Fairmont. It serves the great industrial region of the Pittsburgh area and is the busiest river of its length in the world. The Monongahela Valley coal fields have found this water route to markets both cheap and efficient. By the same route, poultry products have been carried to city markets.

The Great Kanawha, with a 6-foot stage and with plans completed for a 9-foot stage, gives a year-round outlet to the Ohio River, the Gulf and the Sea. Eventually this water route will establish markets in the South and Southwest for much of the 35 million tons of coal produced annually in the Kanawha Valley.

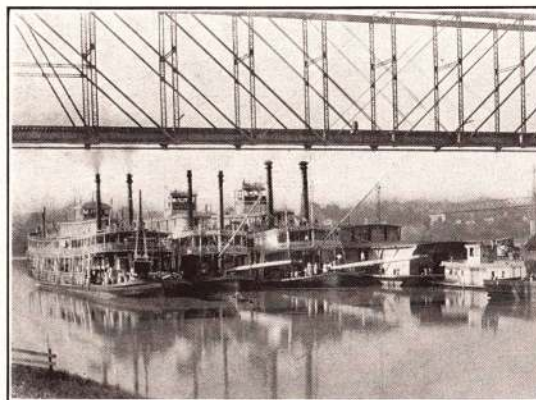
American industrial engineers are fast recognizing the economy of water transportation. They are, in fact, realizing the economies which West Virginia's waterways contribute to the marketing of goods. With the completion of projected canals from the Lakes to the Mississippi system, West Virginia is confidently expected to become one of the nation's leading iron centers because of its vast fuel possibilities and its accessibility to the markets of the entire world.

HIGHWAYS

WEST VIRGINIA is rapidly developing a network of modern highways. No fewer than seven Federal roads strike the State. In the Northern Panhandle is the Lincoln Highway (U. S. 30) from the northwest to Philadelphia, and the National Pike (U. S. 40) which runs from San Francisco to Delaware. Central West Virginia has the Northwestern Turnpike (U. S. 50), from Kansas City to Washington. Southern West Virginia is crossed by the Midland Trail (U. S. 60) leading from Missouri to Virginia Beach. In central West Virginia there is also U. S. 19 running from Lake Erie to the South. U. S. 21 is from Cleveland to the South. The Lee Highway (U. S. 11) serves eastern West Virginia.

At the present time, the State is perfecting a system of hard roads which will connect every county seat. This program embraces the expenditure of \$100,000,000 on nearly 4,000 miles of road. The rural roads, not included in this state system, total 30,000 miles.

The gasoline tax, accepted as the most satisfactory way to raise highway funds, is in effect in West Virginia. Outside of Federal funds received on U. S. routes, the entire cost of construction and maintenance of State highways comes from auto license fees and the gasoline tax. In 1914, there was expended \$2,483,747 on all highways as compared with an average of nearly \$20,000,000 for 1927 and 1928.



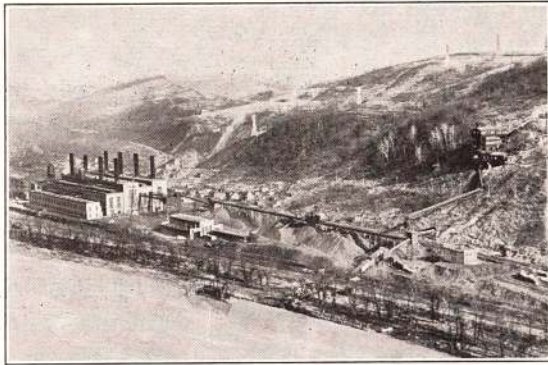
Ohio River packets unloading freight at a West Virginia wharf

TWO OF INDUSTRY'S GREATEST NEEDS

CHEAP FUEL AND POWER



WEST VIRGINIA is blessed with coal, in variety and quantity. In 1927 the State wrested the supremacy in bituminous coal production from Pennsylvania. Located in the heart of the Appalachian coal field, West Virginia has over 11,000,000 acres of coal or a thirteenth of the coal area of the United States. In 44 of 55 counties in the State, coal is found in commercial quantities.



Coal direct from the mine, railways, water and power lines meet at this plant

Coal—an indispensable commodity in modern industrial life—is West Virginia's greatest single asset. It is here in abundance, offering industry a rare opportunity to lower production costs through reduction of fuel bills.

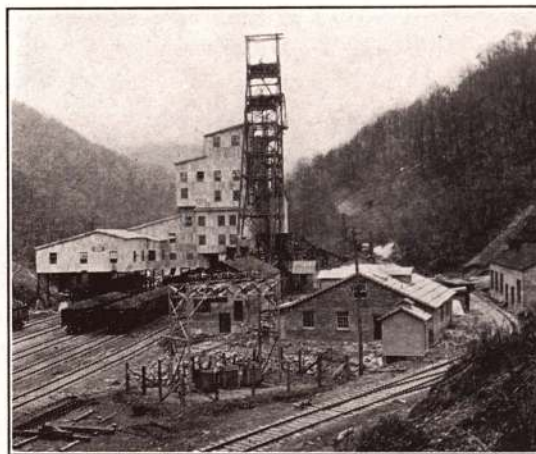
There are approximately a hundred and fifty billion tons of coal beneath the West Virginia hills. The immensity of this reserve of power and energy may be better realized when it is recalled that the entire nation annually consumes only a half billion tons of coal. No other state in the Appalachian coal field, the greatest on the American continent, has such a rich fuel reserve as West Virginia.

These coals are the purest mined on the American continent. They contain from

13,000 to more than 15,000 heat units, and are of both low and high volatile character.

In 1928, West Virginia produced 133,866,000 tons of bituminous coal. Pennsylvania, with an output of 131,644,000 tons, stood second, as in 1927. The production of this State for the past two years has represented almost 28 per cent of the total soft coal production of the United States.

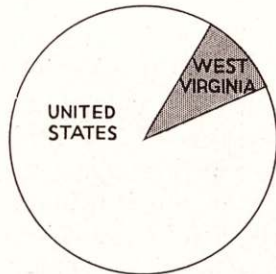
No other state can compete with West Virginia in supplying to industry high quality coal for every requirement. In recent years markets for West Virginia coal have been extended through the ability of producers to meet the demand of consumers for an adequate and continuous supply at reasonable prices. When coal mines elsewhere were suspended because of economic factors and labor disputes, an uninterrupted supply of coal for industrial and domestic use came from the mines of West Virginia. The State produces the standard coal used by the American navy, the adaptability of her coals for coking and by-product purposes is widely recognized, and for steam and domestic use they have no superior.



Modern mining equipment enables West Virginia to produce cheap coal

GAS and OIL

FOR 40 YEARS, until 1924, West Virginia led all states in natural gas production. Today the State retains fourth place among producing states, and supplies one-tenth of the nation's natural gas. Of the 55 counties, 32 have producing wells.

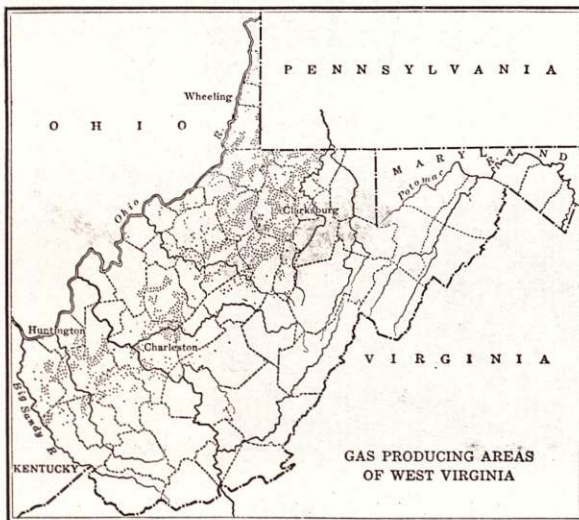
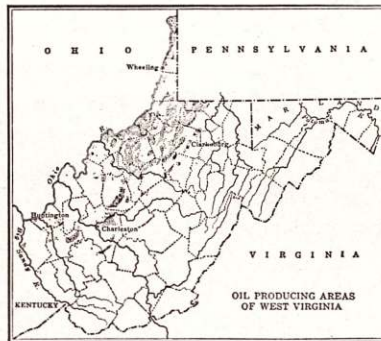


West Virginia produces a tenth of the Nation's natural gas

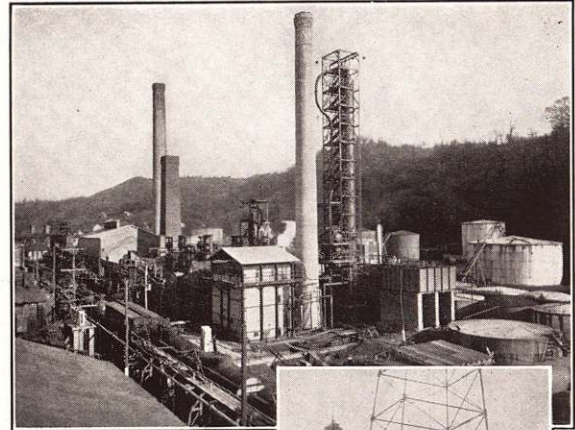
Although West Virginia's gas supply has declined, industry has found the near-by coal fields able to furnish low cost fuel to make producer gas. Today West Virginia, with natural or artificial gas in 43 counties, supplies more than 181,000 homes, represent-

ing two-thirds of the State's population. It also is giving industry perfect fuel at rates which are uniformly more attractive than those of any other state, as shown below:

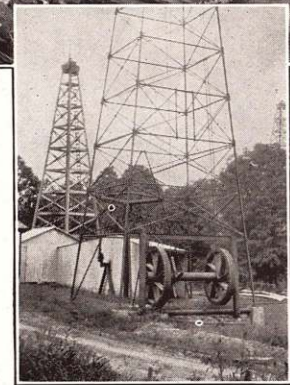
STATE	(Indus. Rate) YEAR	(Indus. Rate) YEAR
West Va.	21.6	22.0
New York	46.0	37.5
Ohio	42.8	42.2
Penn	32.7	32.9



MAPS COURTESY GINN & COMPANY



One of many large oil refineries



Steel replaces wood for oil and gas derricks

Naturally, hand in hand with West Virginia's gas facilities go the State's oil resources.

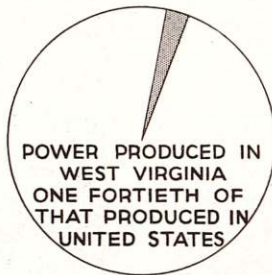
West Virginia ranks 13th among the states for oil production. Before the tremendous growth of the industry in the West, West Virginia was the second largest oil producing state. Over 350 million barrels of oil have been taken from West Virginia's wells and her wells may be expected to produce for many years to come. The oil is of the Pennsylvania grade, the world's best crude, which produces the best refined oils and gasoline.

The refining of oil and gas is one of the State's important industries. There is a large production of gasoline from oil, with refineries located in all of the important producing centers. In more recent years the production of gasoline from natural gas has been developed also.

HYDRO-ELECTRIC POWER and STEAM ELECTRIC PLANTS



THE electric power produced in West Virginia is one-fortieth of that produced in the entire United States and one-eighth of that produced in the southern group of states. The following tabulation shows the electrical power production of the public utilities of some of the states in the South and East for the year 1928:



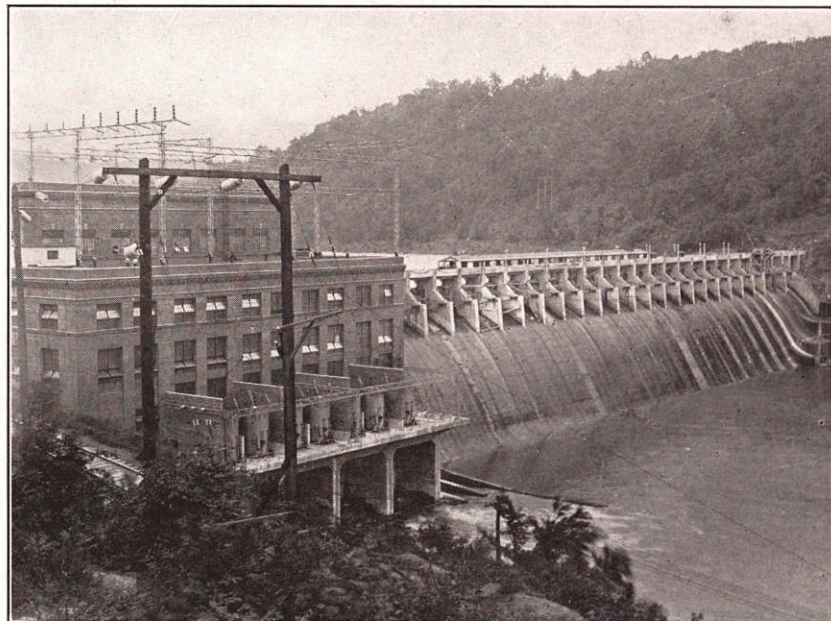
According to estimates by the United States Geological Survey, West Virginia has more than 355,000 horse power available from water power 90 per cent of the time under proper development, and 980,000 horse power available from water power 50 per cent of the time. This estimate of 980,000 potential horse power is greater than that of any of the southern states except Alabama and North Carolina. The water power act passed by the 1929 Legislature will further encourage water power development.

This new act makes a direct invitation for outside capital to invest in West Virginia by providing that corporations chartered under the laws of any state may be granted licenses to develop power projects in West Virginia.

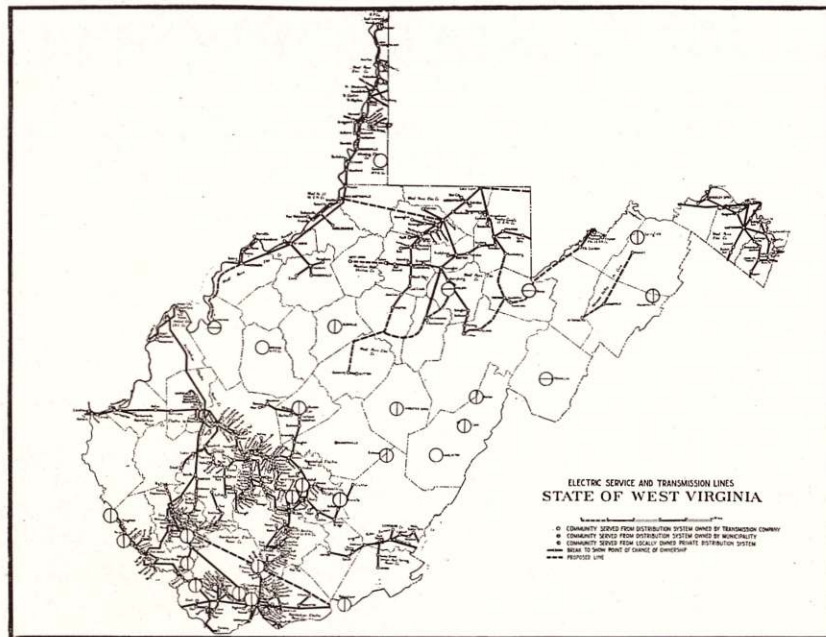
Still greater power possibilities are

KILOWATT-HOUR OUTPUT

	Total	By-Water Power
W. Virginia	2,044,000,000	172,000,000
N. Carolina	2,225,000,000	1,968,000,000
New Jersey	2,085,000,000	32,000,000
Maryland	1,477,000,000	877,000,000
Virginia	1,168,000,000	314,000,000
Kentucky	625,000,000	285,000,000
Tennessee	956,000,000	706,000,000



Nearly a million potential horse power is stored up in West Virginia's many streams



MAP COURTESY NATIONAL ELECTRIC LIGHT ASSOCIATION

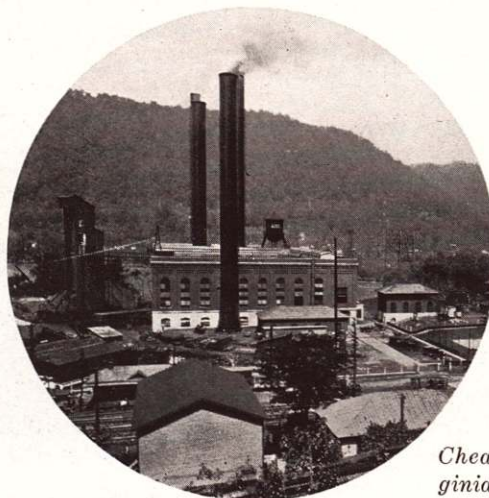
West Virginia service and transmission lines reach rural communities as well as urban industrial centers

available to industry in the combination of water power with steam electric plants. Remember that West Virginia leads the nation in coal production and that its reserves of coal are half as large as those of all Europe, Russia excepted, and, indeed, are so vast as to be virtually inexhaustible.

West Virginia, too, is in the very heart of the giant power system and can furnish 24-hour electric service to meet any requirement. Any industry in West Virginia's main industrial area can obtain up

to 500,000 kilowatt service on short notice.

Electric rates, in the State's major industrial areas, are as low and as dependable as those offered anywhere in the world, not excepting the plants favored by the great hydro-electric developments along the Niagara and St. Lawrence rivers. Electric service is available nearly everywhere in the State, as the accompanying map indicates, and even the rural communities are as uniformly supplied as any communities in the east.



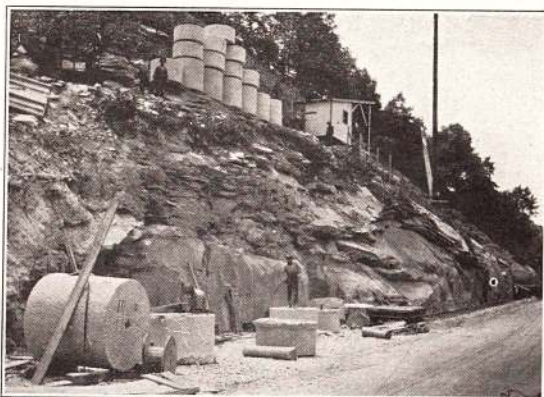
Cheap coal enables West Virginia to produce cheap electricity

RAW MATERIAL OPPORTUNITY

By-Product Coals—Iron Ore—Limestone and Dolomite—Glass Sand and Other Sands—Salt and Its By-Products—Clay and Shale—Hard and Soft Woods—Mineral Springs—Chemicals.



WEST VIRGINIA is blessed with raw material resources of limitless possibilities. The late Dr. I. C. White, State Geologist and President of the Geological Society of America, was enthusiastic over West Virginia's clays, shales and silica beds for use in the manufacture of brick of every description and glass of every quality; her limestones



Wood pulp grinding stones of high quality cut from this 65-foot ledge near Logan

of purest quality and exhaustless quantity; her building stones of every kind except marble; her salt brines and their valuable by-products—not to mention the items of natural gas, petroleum and coal.

BY-PRODUCT COALS

WEST VIRGINIA coals are recognized as being among the finest coking coals in the world, and experiments have further demonstrated the almost limitless possibilities of this coal for by-product use. Several of the largest manufacturing interests, dominating the by-product market, have extended their interests into the coal districts of West Virginia where coking and by-product coals are found in

unlimited quantities. Coal gas, coal tar, sulphate of ammonia and motor benzol are among the by-products being obtained.

IRON ORE

THE WEST VIRGINIA Geological Survey has estimated the State's vast reserve of red and brown iron ore at more than 800 million short tons.

Most of this deposit is on the eastern side of the Alleghenies and extends in a southwest direction from Hampshire County, through Hardy, Pendleton, Greenbrier and Monroe. Ore has also been found in Preston, Hancock and other counties.

The ores are found in the Oriskany and Clinton sands and analysis shows them to run from 9 per cent. to 54 per cent. of metallic iron ore.

The approaching exhaustion of the Great Lakes ore deposits is attracting attention to the West Virginia ore, and by reason of improved processes, now under consideration, it is more than likely that West Virginia's ore will go into the market before the Lake Superior ores are all gone.

Much of West Virginia's deposits, incidentally, hold forth great value for paints and pigments.



Great limestone quarry in Eastern Panhandle

LIMESTONE and DOLOMITE

LIMESTONES for lime, ballast, furnace flux, etc., are found in the eastern part of the State around Martinsburg, and east and south as well as north.

Good limestones are also found in a belt from the north of Rowlesburg southwest by Elkins and also west of Morgantown, and near Romney and Keyser.

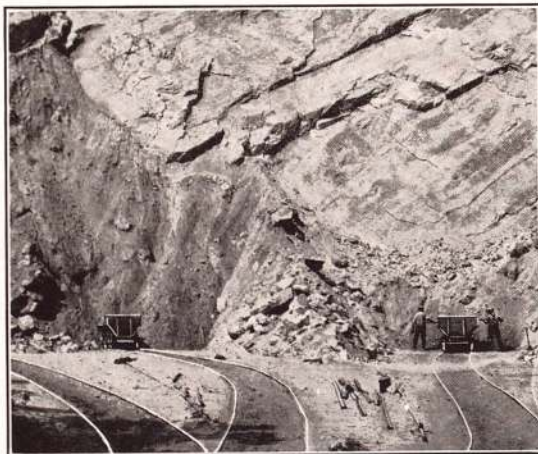
For the most part, West Virginia's limestone areas are undeveloped, although Monongalia, Preston and Berkeley counties have large plants. The opportunity for cement manufacturing is outstanding. There is also an excellent opportunity for the manufacture of chemical lime within the State.

GLASS SAND and OTHER SANDS

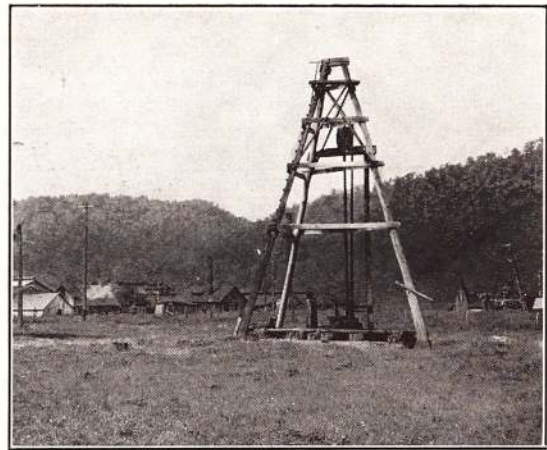
THE essentials for glass manufacture are sodium salts, lime or limestone and sand. The sand, for high grade glass, must be low in iron.

Such sand, of very pure composition from the Silurian series, is mined near Berkeley Springs, with large deposits south of this point not yet developed. In Fayette County some glass sand is mined from the middle Pottsville series.

Sand for the lower grades of glass, and window glass, is available east of Terra



West Virginia has some of the purest glass sand in the United States



Salt wells a hundred years old still produce brine in the Kanawha Valley

Alta, west of Grafton, south of Buckhannon, near Morgantown and at a number of places in the central part of the State.

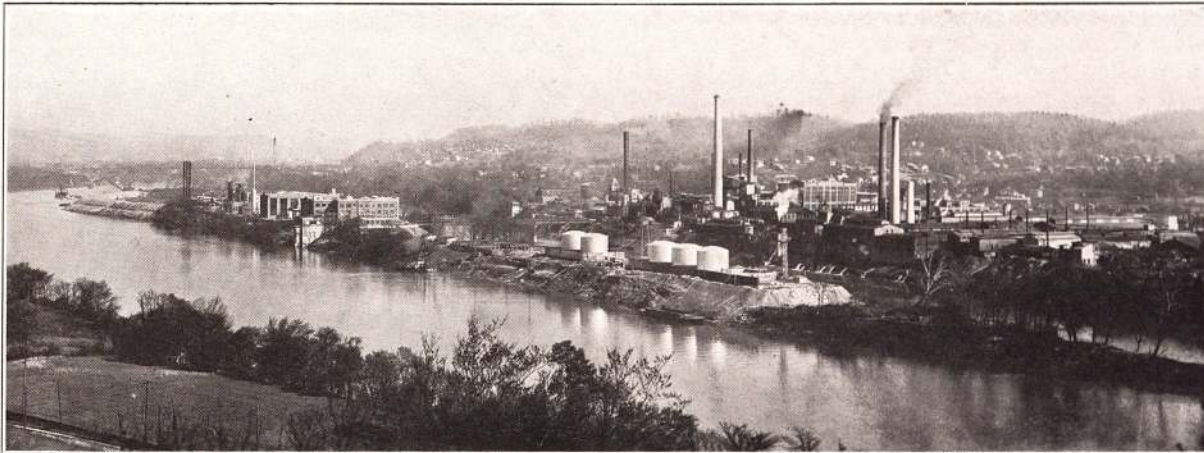
In southern West Virginia, Greenbrier, Fayette, Summers, Monroe and Mercer counties have deposits of glass sand that invite investigation.

Moulding sands are found on the flood plains of the Ohio River. Building sands are available on the rivers at a number of locations, especially along the Ohio River.

On Cacapon Mountain in Morgan County is a ganister silica rock which is very hard and valuable for silica fire brick which forms the basis of a thriving industry farther north in Pennsylvania.

SALT and BY-PRODUCTS

AT ONE TIME in the history of West Virginia, salt making from natural brines, was one of the major industries of the State. Since the discovery of brines in Michigan and northern Ohio, the West Virginia salt industry has declined, although West Virginia brines afford today important by-products, including bromine, iodine, calcium, chlorine, magnesium and potash salts. From the salt can be made the sodium compounds for glass plants and other uses, and the by-products may be recovered with profit.



Chemical industries are spending \$50,000,000 in West Virginia

THE CHEMICAL INDUSTRY

WEST VIRGINIA is fast becoming the chemical center of the nation, and industries are being built throughout the western section, particularly in the Kanawha Valley extending from New River northwest to the Ohio River, and on the Ohio northward toward Wheeling and southward toward Huntington.

Dr. H. C. Parmelee, Secretary of the American Institute of Chemical Engineers, says: "The Great Kanawha Valley has become a chemical stronghold, second only to Niagara Falls and, perhaps, surpassing it in diversity of product." Charles C. Concannon, of the U. S. Chamber of Commerce, predicts the next big advance in organic chemistry here since "there seems to be no other location where so many natural advantages are found in such close proximity and profusion." Similarly write C. H. Herty of the Chemical Foundation, New York, and Paul J. Kruesi, president of the American Electro-Chemical Society.

The largest chlorine production in the world is now being carried on at a plant in the Great Kanawha Valley, and chlorine is also used in producing tetrachloride and amyl alcohol. Another large plant started manufacturing ethylene, acetone, solvents for rubber, dyes, varnish products and new products such as ethylene glycol, glycol-

di-acetate and ethylene dichloride. Among the hydrocarbon gases produced are commercial propane and ethylene.

Experiments in the commercial manufacture of ethyl alcohol from a mixture of ethylene gas and sulphuric acid have been concluded at one of the plants in the State. The same plant made the methane gas used in the great dirigible, the Graf Zeppelin.

At Huntington, ultramarine blues, dyes and bases for printing inks are among varied chemical products.

CLAY and SHALE RESOURCES

IF THERE IS one outstanding industry which is under-developed in West Virginia in proportion to the opportunities which the State accords, it is the clay industry.

Clays and shales, in variety and quantity, are found in most parts of the State. Fire clays, for example, are worked at Piedmont, Thornton, Hammond, New Cumberland, Charleston and elsewhere. Other undeveloped deposits are available near Charleston, and east of Morgantown.

Some very fine clays in Teays Valley, east of Huntington and near Bloomery in the eastern part of the State, hold out rare opportunities for profitable development.

Roofing tile has been a product of some development at Parkersburg and Huntington, and has found an excellent market.

MINERAL SPRINGS

WEST VIRGINIA eclipses so many other communities in the United States in the matter of natural resources that it is difficult to keep a plain recitation of facts from sounding boastful.

West Virginia is, for example, one of the leading states in mineral springs. These springs include six classes or varieties—alum, iron, magnesia, salt, sulphur and lime. Many of them have been noted for their medicinal qualities since the days of the Indians and the earliest white settlers. George Washington and other early colo-



White Sulphur Springs is world famous as a health resort and recreation center

nials visited White Sulphur, Berkeley Springs and Old Sweet Springs nearly two centuries ago.

The possibilities for the further development of West Virginia's mineral springs as sanatoria or general summer and health resorts offer still another opportunity.

FORESTS

FOR YEARS West Virginia led all states in the production of hardwood lumber and it continues today as an important hardwood center. At the present time, in addition to the production of much softwood, West Virginia leads the nation in chestnut lumber production, with a third of the nation's cut; stands second in yellow poplar, with a fifth of the nation's production. It occupies fourth place in maple, hickory and oak; second place in cherry and butternut

and third place in buckeye and basswood.

Of the annual per capita cut of 300 board feet of hardwood lumber, approximately 100 board feet per capita is used at home.



Furniture making is a rapidly growing industry which offers great attractions to capital

The remaining hardwood lumber is exported all over the country. That wood-working industries, located in West Virginia, could utilize this enormous quantity of lumber, produced right at their doors, and utilize it with tremendous saving in freight, is further evidence of the economies which the State offers to industry.

Notwithstanding the fact that West Virginia is contributing in large quantities to the nation's requirements for lumber (the annual cut running 588 million board feet), there is ample reserve since over three-fifths of the total area of West Vir-



West Virginia hardwoods comprise the major portion of her forest area

ginia, or approximately 9,000,000 acres, remains in forest and will be able to produce timber indefinitely with reasonable care by land owners.

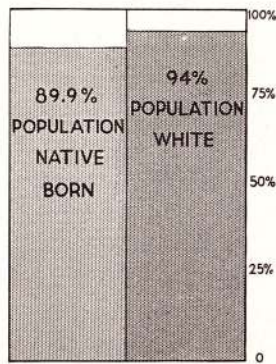
LABOR-CLIMATE-TAXATION

THERE HAS BEEN little industrial unrest in West Virginia from any cause; there is ample labor in the State to admit of great industrial expansion without bringing in any labor, and the population is widely enough distributed about the State so that any section may be expected to supply a reasonable amount of labor.

English, Scotch, Irish, Welsh and Germans are the nationalities largely represented among West Virginians. The population of the State is 89.9 per cent native born white and more than 94 per cent white. No better or more intelligent workmen can be found anywhere from the viewpoint of reliability, industry, loyalty and tractability.

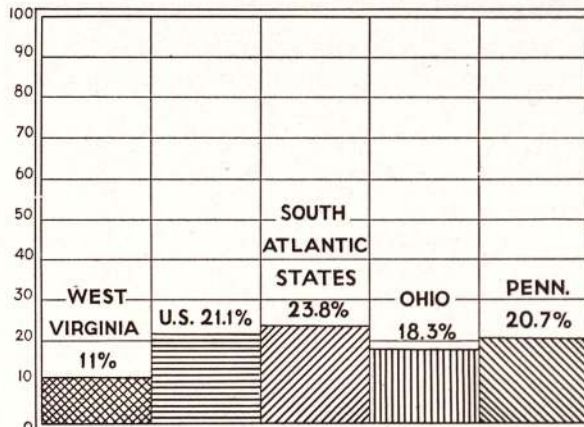
Only 25 per cent of the total population of the State dwell in cities, and of this number only 12 per cent are in cities of over 25,000 population. The remainder are in smaller towns and cities or on the farms where they will respond readily to a call for labor.

Manufacturing now employs 119,000 persons, of whom 18,000 are females, or approximately 15 per cent, compared with

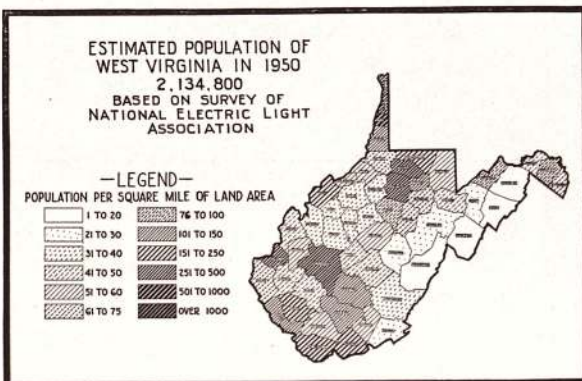


national figures of 20.5 per cent. The State Bureau of Labor estimates that only 5½ per cent of those engaged in manufacturing are unnaturalized foreigners. Of further importance is the fact that West Virginia has had unusual success in "holding her men." The Bureau of Labor investigated more than thirty industries and found that more than one among each company have been in the employ of the same company from 20 to 61 years.

One aspect of West Virginia's labor situation which deserves particular mention is the abundant available supply of female labor. Only 11.2 per cent of the females over 10 years of age are engaged in gainful occupation in West Virginia, compared with 21.1 for the United States as a whole; 23.8 in all the South Atlantic states; 18.3 in Ohio and 20.7 in the neighboring state of Pennsylvania.



Low percentage of females over 10 years of age engaged in gainful occupation in West Virginia



The percentage of child labor in West Virginia is less than one-half of one per cent, and the West Virginia child labor law is among the best. The State has in effect modern safety measures, and also has one of the most progressive workmen's compensation laws in effect in any of the states.

HIGHEST AVERAGE ALTITUDE EAST of the MISSISSIPPI

CLIMATE, of course, has a recognized, important part to play in the operation of any, or at least most, businesses.

West Virginia is a high altitude state. The average altitude is 1500 feet, the highest of any state east of the Mississippi and compares with other states as follows:

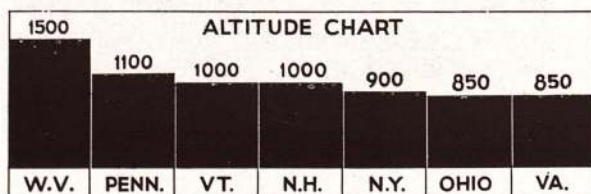
Pennsylvania	1100 feet
Vermont	1000 feet
New Hampshire	1000 feet
New York	900 feet
Ohio	850 feet
Virginia	850 feet

The lowest point in the State is 260 feet, the low water mark of the Potomac at Harpers Ferry, and the highest point is Spruce Knob, near Circleville, where the figure is 4860 feet. This range of 4600 feet equals the difference of more than 15 degrees of latitude and more than two weeks difference in growing seasons.

The average high altitude of the State, 6000 square miles having an average altitude of more than 2000 feet above sea level, accounts for West Virginia's delightful climate. The summers are cool and mild, and free from the obnoxious pests which frequent territories farther to the north. The sun shines 27 seconds out of every minute possible throughout the year.

Although West Virginia is quite a distance south of New York City, the average temperature is only one degree warmer. The year-round average is 52 degrees. The average rainfall is 45 inches.

From the climatic standpoint, month in and month out, West Virginia offers the same splendid setting for industry that it offers in so many other respects.



TAXATION

WHILE THE MATTER of taxation is not one of the seven major items with which this book was planned to deal, it is, nevertheless, one of the subjects which every business and industry knows it must investigate carefully. And again, while taxation follows so many different courses, business has learned that the subject must be analyzed from the viewpoint of the individual business, rather than from the broad viewpoint of general business.

As an indication, however, of the reasonable taxation situation which exists in West Virginia, the following excerpts are interesting. They are taken from a recent address by L. A. Carruthers, in charge of the division of statistics of states and cities, Bureau of Census, Washington:

"In 1927, the per capita of all revenues for the 48 states was \$14.09; for the South Atlantic division, of which West Virginia is one of the states, \$13.21, and for West Virginia \$12.33. Pennsylvania's per capita was \$13.55, Maryland \$15.34, Virginia \$15.40 and North Carolina \$12.45. * * *

"After a careful analysis, which I have made of the governmental activities of the State of West Virginia, when compared with all states, the South Atlantic division and with the neighboring states, I feel free to state that the comparison is most favorable to the State of West Virginia. Your taxes are lower than those of the average state or of the South Atlantic division, but this has not resulted in any neglect on the part of the State in important activities."

In considering local and state general property taxes combined, with the average of all states figured at 100, West Virginia makes a remarkable showing:

STATE AND LOCAL TAXES PER CAPITA

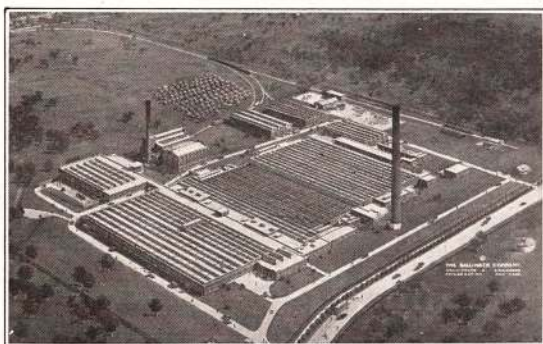
Oregon	154	Massachusetts	122
California	152	Ohio	116
New Jersey	137	Florida	98
Michigan	136	Maryland	84
New York	132	Pennsylvania	83
Wisconsin	125	Avg. Pct. All States	100
AVG. WEST VIRGINIA	79		

STAUNCH INDUSTRIES NOW INHABIT WEST VIRGINIA

A GUIDE to the FUTURE

IN 1928, the State of West Virginia had 3164 manufacturing plants, employing 119,000 people. This represented an increase of more than 35,000 persons employed in manufacturing in comparison with those so employed in 1919, or an increase of more than 40 per cent.

The capital investment in manufactures in the State increased from \$49,103,000 in 1900 to \$631,551,000, according to the State Bureau of Labor.



This Viscose plant is one of many large employers of labor in the State

The value of manufactured products showed a surprisingly rapid increase from \$67,006,000 in 1900 to \$600,154,000, according to State figures.

The total investment in West Virginia agriculture exceeds \$400,000,000. The annual crop production is approximately \$70,000,000, with livestock adding \$40,000,000 annually to State wealth.

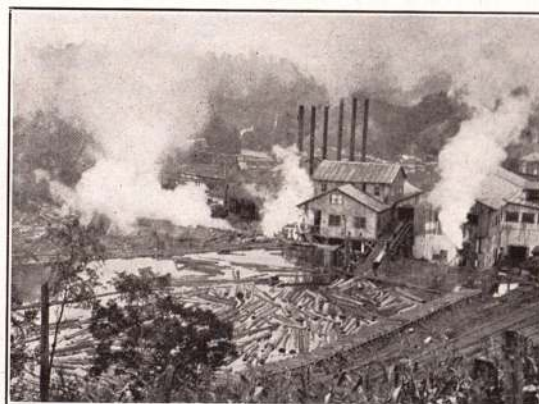
The annual wages paid out by West Virginia industries increased more than \$50,000,000 between 1921 and 1928. The industrial expenditures in new buildings and equipment for the past four years are approximately \$100,000,000. Proposed developments for the immediate future will

probably exceed this average annual expenditure of twenty-five million dollars.

The most recent figures of production in West Virginia are as follows:

Bread and other Bakery Products	\$ 12,816,000
Cars, Car Construction and Repairs	35,244,000
Chemicals	23,215,000
Brick and Tile	4,636,000
Chinaware and Porcelain	12,240,000
Clothing and Cloth	20,790,000
Coke	11,443,000
Flour and Grist Mills	10,843,000
Food and Food Products	10,469,000
Furniture	5,406,000
Glass	47,137,000
Iron and Steel Products	122,640,000
Leather and Tanning	12,586,000
Lumber and Lumber Products	32,310,000
Natural Gas and Products	35,485,000
Paper and Wood Pulp	8,707,000
Petroleum and Products	46,026,000
Tobacco and Cigars	12,874,000

Staunch industries have settled in West Virginia. Many of her industrial plants are the largest in their respective fields. The Interwoven Hosiery Mills, at Martinsburg, for example, employ over 1600 persons and the Libbey-Owens Sheet Glass Company, at Charleston, 1200 persons.



The lumber industry still ranks high in the State's business life

The International Nickel Company at Huntington has the world's only monel metal mill. The processed material for the Viscose plants at Parkersburg, at Roanoke, Va., and at Lewiston and Marcus Hook, Pa., is made at Nitro.

The giant iron furnaces of the Weirton Steel Company at Weirton, employ 7600 men. Parkersburg has the only vitrolite plant in the world. Fairmont has the largest bottle factory.

West Virginia also has the premier plants for the manufacture of hardwood, thermos bottles, toy marbles, iron nails, axes, shovels, chinaware, tannery, clothes pins, sanitary pottery, electrical porcelain and proprietary remedies. Morgantown has the only pressed prism glass plant to be found anywhere in the world.



Cannery and cider making plant in fruit belt

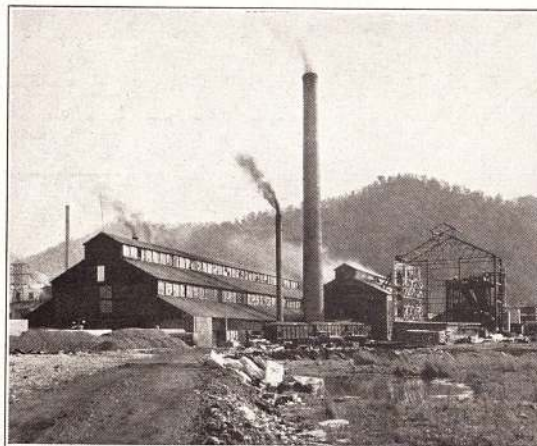
All of these industries, numbering many of the staunchest in the country, offer a safe guide to the future and point to the widely varied industrial interests of the State and to the State's future possibilities with respect to the enlargement of the industries now here and to those that are now looking for a location.

UTILIZATION of WASTE PRODUCTS

West Virginia has many unusual examples of close utilization of waste products.

Experiments have been made which prove that the drainage water from coal mines, long a problem of mining, can be so treated as to purify the water and also return a profit in by-products.

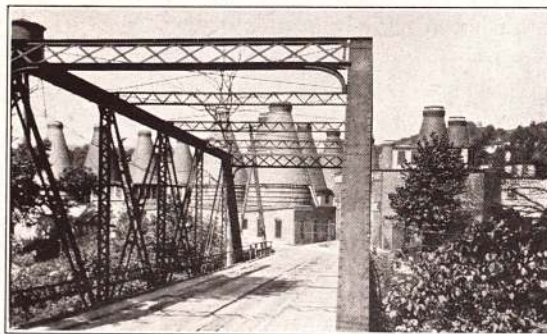
In the chemical industry, one plant



Plant producing alkaline products

makes liquid chlorine from a solution of salt, and has caustic soda and hydrogen gas as a by-product. It pipes the latter to a plant making ammonia. The latter plant has salt (sodium chloride) as a by-product. Since this is a basic raw material of the chlorine plant, the salt is pumped back to the first plant to make more chlorine and caustic soda.

In the lumber industry, saw mills, cutting hardwood and softwood, are located in the same town. Lath mills and a paper pulp mill nearby use up the larger scrap. The small scrap feeds the boilers which furnish power to make electric current for the mills and the town in which they are located. A tannery, a flooring mill, a plant making dowels and broom handles, a clothes pin factory, and a plant making butter trays and other woodenware are also grouped at the same center to use up the scraps of lumber which are waste in the operation of the other plants.



World's largest sanitary pottery plant

FIRST-HAND EXPERIENCE

WHY WE LOCATED IN WEST VIRGINIA

FOLLOWING are excerpts from letters received recently, telling why some of the large industries have located in West Virginia.

Air Reduction Sales Co., Wheeling:

"Location near market; faith of directors in this great State."

Akro Agate Co., Clarksburg:

"Supply of natural gas; trained labor."

Barium Reduction Corp., Charleston:

"Attractive gas contract; satisfactory labor."

Belle Alkali Co., Belle:

"High quality of labor, low priced coal, natural brines of Kanawha Valley."

Electro-Metallurgical Company, Glen Ferris:

"Attracted by water power, coal, oil, gas and mineral rock supply. Also by disposition shown by State and local officials to encourage and welcome industrial development of natural resources."



West Virginia-built airplanes in service

Fokker Aircraft Corp., Glendale:

"Raw material supply; intelligent labor, enjoying good living conditions."

International Nickel Co., Huntington:

"Dependable labor, mostly owning homes, and with little labor turnover; abundant and cheap fuel and power; river and rail

transportation; good water; equable climate; raw materials; satisfactory taxes and laws."

Interwoven Hosiery Mills, Martinsburg:

"Female labor supply; ample power; suitable climate; attractive general living conditions."

Homer Laughlin China Co., Newell:

"Proximity to similar plants and concentration of satisfactory labor."

Kelly Axe & Tool Co., Charleston:

"Nearness to gas and coal fields; transportation by rail and river; abundant labor; ideal climatic conditions, workmen rarely laying off from work on account of hot weather."

Lazote, Belle:

"Peculiar qualities of Kanawha Valley coal and its low price."

Libbey-Owens Sheet Glass Co., Charleston:

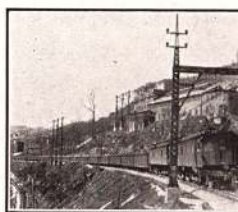
"Abundant supply of natural gas."

Sharples Solvent Corp., Belle:

"Nearness to casing head gasoline, coal and other materials."

United Zinc Smelting Corp., Moundsville:

"Coal supply; river and rail transportation; nearness to markets; good labor supply; satisfactory site."



Electricity draws heavy tonnage trains

Viscose Co., Parkersburg:

"Determining factors were adequate supply of suitable water, male and female labor, and proximity of plant to labor."

Vitrolite Co., Parkersburg:

"Nearness to raw materials; plentiful labor; satisfactory fuel supply at attractive price."

Weirton Steel Co., Weirton:

"Attracted by natural resources of State, with location in Pittsburgh district on Ohio River, permitting water movement to and from plant."

H. R. Wyllie China Co., Huntington:

"Closeness to markets, good rail and water transportation, high type of workmen, good living conditions."

There are practical, economical reasons back of the location of every plant in West Virginia today. Our letter files have many interesting expressions from the leaders of our industries. Throughout every letter there occur again and again the words **FUEL, POWER, LABOR, TRANSPORTATION, CLIMATE, RAW MATERIALS, MARKETS** — factors wherein West Virginia claims many right-ful and natural advantages.



Large mill producing pulp and paper

LIVING CONDITIONS

NOT ONLY does West Virginia offer opportunity to industry, from the standpoint of raw materials, transportation and other factors, but the State offers also an excellent opportunity to individuals and families for the full enjoyment of life.

West Virginia spends more than half of its tax money for educational purposes and does not regret a cent of the expenditure.



This church has been a place of worship since 1796

The State increased her annual expenditures for education more than 13 times during the period extending from 1900 to 1928. During the same period the United States increased its public school expenditures $9\frac{1}{2}$ times and the South 12 times. Close to twenty million dollars is invested in the various institutions of higher learning in the State.

In the public, elementary and secondary schools, West Virginia has a teacher for each 26 pupils compared with 35 in North Carolina, and 32 in Virginia.

The percentage of church memberships among the population is high. According to the last report of the Department of Commerce, Washington, West Virginia churches had a total membership of 532,106. There were in the State at that time 77 religious denominations and 4,962 organizations or churches.

Living conditions throughout the State are considerably above the average. There is no city congestion.

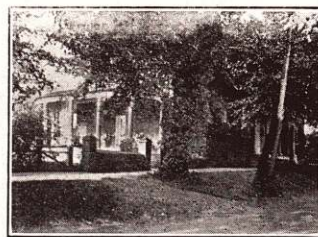
The average cost of living in West Virginia is 22 per cent lower than in New England, 11 per cent below the Cleveland, Detroit and Chicago areas, and 10 per cent below the average for the United States. The wages paid are above the average.

Home ownership in the State shows up well. The figure is 46.8 per cent owned in West Virginia as compared with 39.8 in New England, and 37.2 in the Middle Atlantic states. Of the homes owned in West Virginia, 80.6 per cent are out of debt as compared with a national figure of 61.7 per cent.

Parks throughout the State are increasing and constant attention is being paid to the conservation and expansion of the recreational features offered by the National Forests which lie within the eastern border of the State. Hunting and fishing, as well as the widely recognized natural beauty of West Virginia, are being preserved and improved for the use of inhabitants of the State. Some of the most attractive golf courses in the country lie in West Virginia, and tradition states that the first golf in America was played at White Sulphur Springs. Many points of national historic significance unite with scenic and industrial interest to lure the tourist.

West Virginia has taken national leadership in work among the farm boys and girls, and these same youngsters have won many national honors for their work.

Long life is common in West Virginia's health-giving climate. The State Department of Health shows that more than 23 per cent of the people who died in 1928 had passed the mark of three score and ten years. Of the 3,917 people who had passed the 70-year mark, 190 were more than 90 years old.



Typical West Virginia home with attractive surroundings

From the standpoint of education, culture, recreation and health, West Virginia ranks among the progressive states of the

Union, and strongly appeals to prospective residents.

OPPORTUNITIES

THE WEST VIRGINIA Geological Survey has studied in detail and reported on the various resources of the State which are only partially developed. These resources, due to quality, quantity and location, offer industry, intelligently managed, opportunity to bring vast wealth to the State.

West Virginia's mineral fuels, coal, oil and natural gas, give her undisputed leadership. Fuel alone can insure West Virginia's industrial future. The State's coal fields produce the highest grades of coal, especially adapted for steam and domestic fuel and by-product purposes. The increasing production of coal in West Virginia is largely attributed to the increasing efficiency of coal mines through the installation of mechanical appliances and improved machinery for sizing, preparing the coal for market and the removal of impurities.



Modern high school with fine campus of 30 acres

There are valuable Portland cement locations at various points in the State. Both shale and limestone can be located right at the cement plant in West Virginia, whereas at most mills one or the other of these materials must be hauled long distances.

Vast opportunities are offered industries using fire clay, ornamental brick clays and other types. The abundant fuel suitable to glass manufacturing, and the deposits of glass sands of good quality in Berkeley, Preston, Monongalia, Upshur, Randolph, Fayette and other counties invite further development of the glass industry in the State.

Varieties of chemicals are being made from the salt brines, found generally in

the oil and gas fields, especially in the district extending from Hartford to Huntington and bordering on the Ohio River, and at Charleston on the Great Kanawha River. Borings for oil and gas in the southern part of the State also show immense deposits of a very rich salt brine suitable for the manufacture of salt and other chemical products.



Counties build their own cottages at State 4-H Park

Of outstanding importance is the fact that manufacturing plants, in sections remote from a fuel supply, by locating in West Virginia, have found it possible to make decided savings in their production costs. For example, although there is no zinc ore produced in the State, the advantages of location, fuel and labor supply have resulted in large zinc smelting operations locating in Harrison and Marshall counties. It has proved decidedly profitable to transport the crude materials into the State for manufacture here because of the economies effected by the at-hand fuel supply and by nearness to markets.

Wood-working industries, and in fact all industries that are seeking a location based primarily on fundamentals of fuel, power, transportation, markets, labor and climate, plus the availability of the raw materials which West Virginia holds, will find in West Virginia an opportunity second to none throughout the entire United States.



Girl sponsors for cadet corps at West Virginia University

LET WEST VIRGINIA ASSEMBLE DETAILED and SPECIFIC DATA for you



IN THIS BOOK we have made a straightforward attempt to set forth the basic advantages which West Virginia has available for industry today. And in setting forth these facts we have tried to keep in mind that the actual purpose of the book was to explain these advantages from the viewpoint of the industries which might be looking for new or improved plant locations, rather than to set them forth with the idea purely of boosting West Virginia.

It is needless to say that any individual business or industry, in seeking a place to locate a plant, cannot be satisfied with generalities. This book, we realize, must be general, rather than specific, and it must lack, therefore, much of the information which would directly apply and interest the individual business.

As a consequence, the State of West Virginia stands ready to assemble further

information for any industry which is truly interested in the opportunities which the State may afford.

A blank form, which you may care to use as a convenience, for the purpose of specifying the information which you are most interested in securing, will be mailed you upon request.

There is no obligation connected with such service. The State of West Virginia naturally holds the belief that its advantages and opportunities, as set forth between these covers, are second to none, and it promises the most thorough, conscientious and helpful type of co-operation in the particular application of these advantages and opportunities to your specific business.

Address your inquiry to the State of West Virginia, Postoffice Box 848, Charleston, West Virginia.

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