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## President's Address.

W. H. JENNINGS.

READ AT LOGAN MEETING.

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*Members of the Ohio Institute of Mining Engineers :*

It gives me great pleasure to welcome you to the Hocking Valley Region. The summer meetings of the Institute have hitherto been our most interesting ones; and I do not think that this one will be an exception to the rule.

Our surroundings are certainly crowded with objects and matters of peculiar interest to men of our pursuits, and I am satisfied that the completion of our program will find us all repaid for our coming here.

We are at the threshold of the "Lower Coal Measures." The geologists (and to none of them are we more indebted for a knowledge of the Economical Geology of the State of Ohio than to our own Dr. Edward Orton) have written the story of these

“ Lower Coal Measures ” and by years of study and skillful observation have built up a symmetrical section; that “ he who runs may read. ” They have established what may be called “ beacon lights. ”

These beacons are the Limestones. Five of them stretch through the whole field and furnish the means of establishing the stratigraphical order of every portion of it.

They are named as follows, being numbered in ascending order:

5. Black, or Cambridge Limestone.
4. Buff, or Shawnee “
3. Gray, or Hanging Rock “
2. Blue, or Zoar “
1. White, or Maxville “

These limestone horizons are separated from each other by intervals of about one hundred feet.

The lowermost stratum—the White, given by Prof. Andrews the name of the Maxville Limestone, by reason of its great exposure near the village of that name,—is of a light drab color, very fine grained and homogenous, and looking very like lithographic stone. It yields at its best over ninety per cent. of carbonate of lime, and is much esteemed for furnace flux, for which purpose it is now being used at Winona Furnace, and was formerly quarried a few miles below Logan for use at the Logan Furnace.

Ascending to the next horizon with a step of one hundred feet,—and what so appropriate in this Centennial year as to move by hundreds,—we reach the Blue, or Zoar Limestone which takes its name from the village of Zoar in Tuscarawas county. It is the best marked stratum in the Lower Coal Measures of the State and the most available guide in establishing the order of the varied series of deposits. Its color is a dark blue and it is almost universally known as the “ blue limestone. ” It has no value as a building stone or furnace flux.

The Gray or Hanging Rock Limestone is the next one of the main series to be met with as we ascend. It is the limestone termed “ Ferriferous ” by Prof. Andrews. It is generally of a light gray color. It furnishes an excellent flux, for which it is largely used, being mined in connection with the limestone ore which lies immediately above it.

Another step of an hundred feet brings us to the “ Buff ” or Shawnee limestone, which derives the latter title from the village of Shawnee, in Perry county, where it is extensively worked for furnace flux. Its color is described by the name by which it is generally known, viz : the Buff limestone.

The fifth member of this orderly series of limestones is the Black, to which Prof. Andrews has given the name of the town of Cambridge, in Guernsey county, where it is said to be well developed. The prevailing color is a grayish-brown ; in the Hocking Valley, however, the stone is often black for considerable areas, and

gets a local name from this fact. It lies above the Upper Freeport coal, the upper seam of the Lower Coal Measures, and furnishes an invaluable guide in the determination of the Lower and Barren Coal Measures.

These limestones have strongly marked characteristics, and by the geologist are readily recognized wherever seen.

While the geologists have studied the position of these limestones and the valuable deposits of coal, ore and clay lying between, and have written much as to their characteristics and how they *got* there, we, as a society and as individuals, are chiefly interested in the problems of *getting them out*—how to win from Nature's store-house the maximum amount of earth's treasures at the minimum expense.

While I will not attempt to enter into all the details, I desire to call your attention to some of the general resources and industries of the Hocking Valley.

This great coal field has for its foundation the "Waverly group," capped by the Logan sandstone, so named from its development in this locality. This stone is used principally for bridge construction, canal locks and general building purposes. Its sound condition, after years of exposure to the action of frost and water, prove its great value.

At your feet you find it used extensively as a curb-stone in this village, and doing excellent service. The material for the superstructure of St. Joseph's Cathedral at Columbus was obtained from the Sugar Grove quarries. The new front of the Broad Street Congregational Church, in the same city, comes from the Millville quarries, where it is of a reddish color, and is fast coming into the market as an exceptionally beautiful building stone.

Surely this material is a good foundation—protecting the pavement upon which you walk, upholding the bridges over which you ride, and enclosing you safely within its walls, towering toward Heaven, while you worship.

The quarries are located near the railroad, and are capable of supplying any demand made upon them, and the demand should come from every direction for this valuable material.

#### CLAYS.

The "Maxville," the lowest clay in the Coal Measures, underlies the Maxville limestone. It is a grayish-drab in color, and is of remarkable purity and excellence. It is very hard and flinty, and is classed as a No. 1 fire-clay. A good fire-brick is manufactured from it in this village.

Between the Blue and the Gray limestones there is a fine deposit of silicious clay which is being very extensively worked at Haydenville, a large establishment having been erected at that place for the manufacture of sewer-pipe and a great number of

specialties, among which is the Hayden block for paving, which is giving good satisfaction where used.

Brick pavements are fast coming to the front in our cities, and the red brick, fire-brick and Hayden block have their respective advocates. The Hocking Valley can furnish the material for all of them, and should be pushing this matter to the utmost.

Through the courtesy of the officials of the Haydenville Mining and Manufacturing Co. and the Nelsonville Sewer Pipe Co. (which has lately erected a large establishment for working this clay at Nelsonville), we are invited to visit and inspect their works on Friday.

Mr. Joseph Barthlow, of this city, has a small establishment for working the Potters' clay. There may be other localities in the Hocking Valley where clay is worked, but if so I am not informed of it.

At Union Furnace extensive brick works are located, the Superintendent of which, Mr. Ellis Lovejoy, a member of this Institute, will, I have no doubt, in his paper on "The Fire-clays of Five-mile Creek," treat more fully this subject, to which I have merely alluded.

#### ORES.

The ores now being mined in the Hocking Valley come from three well-marked horizons :

**BLACKBAND ORE.**—Between the Buff and Black limestones and accompanying the upper Freeport coal.

**BAIRD ORE.**—Overlying the Gray limestone.

**BLOCK ORE** —Underlying the Blue limestone.

There are eight furnaces in the Hocking Valley, of which number only four are now in blast.

#### COALS.

Of the twelve seams of coal in the Lower Coal Measures, only two—the "Middle Kittanning" and the "Upper Freeport"—are being extensively worked. The former is from five to twelve feet and the latter from four to six feet in thickness.

It is coal which forms the blood which fills the arteries of commerce in the Hocking Valley, and when the pulse of trade quickens under the impulse of a stiff demand, the citizens of the valley, the railroad employes, and the army of mine-workers find their greatest prosperity and happiness.

The C., H. V. & T. R'y has forwarded from the mines in this district (and it is to the district tributary to the Hocking Valley Division of the C., H. V. & T. R'y all my remarks are applicable), since the opening of the road, the following amounts of coal in the years named :

1870.....	Unknown.
1871.....	302,766 tons.
1872.....	604,881 "

1873.....	806,872 tons.
1874.....	485,076 "
1875.....	752,970 "
1876.....	782,283 "
1877.....	800,795 "
1878.....	913,864 "
1879.....	1,108,792 "
1880.....	1,230,337 "
1881.....	1,453,197 "
1882.....	1,801,686 "
1883.....	1,901,726 "
1884.....	1,056,202 "
1885.....	1,728,883 "
1886.....	1,695,513 "
1887.....	1,739,128 "

The output has been steadily increasing. Improved machinery has been introduced, and the outlook is for a still greater business this year.

To the courtesy of the Ellsworth & Morris Coal Company and the Consolidated Coal & Mining Company, we are indebted for an invitation to visit their mines on Friday. They have the most improved machinery for mining, hauling and loading coal that has yet been introduced into the valley. They are, I venture to say, mining as much if not more coal proportionately, than any other mines in the State.

I have culled from the Geological report much of the matter here presented to you. I have only mentioned a few of the most important of the many seams of coal, clay and ores which abound in this region in order to call your attention in a general way to the fertility and diversity of this remarkable field.

And now, if I may without seeming to make a poor return for courtesies frequently and cordially extended, I should like to say a few words to the citizens of Logan, not in a spirit of captious criticism, but "more in sorrow than in anger," and in the hope that some possible good might result.

You are encamped like the Children of Israel at Kadish-barnea, the gate of the Promised Land. The Geologist spies have reported the existence all around you of a goodly land, a land flowing with milk and honey (coal and iron); but you have stayed without the gate for now over one-half of forty years, while others have been busily gathering the grapes of Eschol. You have deemed those twin giants, Labor and Capital, beyond your strength to control, and have sat idly by while others have invaded your own rich territory and wrested from Nature the treasures guarded by her for so many centuries.

Is it necessary that all this generation should pass away before you will enter into this land of fulfilled promise? Will you seize

the blessings within your grasp, or slothfully content yourself with the meager droppings from the overloaded trains that are daily bearing past your doors the treasures which you should claim? The column of fire which escapes from your unused gas-well and wastes its precious force upon the air seems beckoning for the man of even ordinary enterprise.

Oh, for a Moses to strike with the divining rod of enterprise the rocks of your energies from which would gush forth such streams of ambition and industry as would make your beautiful village shine the gem of the valley in the sun of prosperity, rescue your sons from the enervation of inactivity and your homes from the dreariness of stagnation.

Logan has been the scene of some of my happiest moments, and many of the tenderest memories of my heart are associated with this place. It is, therefore, in a feeling of genuine affection for the beautiful old village that I have made this plea.

I should like to see her noted for progressive enterprise as well as for a hospitality as generous as the hand of Providence, an intelligent and peace loving community without the factional feuds so common in other localities, and the beauty of her daughters, which last and most noticeable characteristic has, I know, been observed and appreciated by the members of the Institute.

And now in conclusion, I wish to avail myself of the first opportunity to thank the members of the Institute who have honored me by their confidence, of which I take my election to the office I now hold to be an indication. I shall endeavor to show my appreciation by a faithful discharge of the duties that may devolve upon me.