

soon probably sinking into that most unfortunate condition for a young man, of accepting a low standard of performance, is found among the brightest, most apprehensive, most enthusiastic, and most successful students of a scientific and technical school.

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*THE PENNSYLVANIA MINES AND
MINING EXHIBIT AT THE
WORLD'S FAIR.*

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Because of her central position in the thin strip of land facing the Atlantic and constituting the original thirteen States, Pennsylvania, long before her vast mineral wealth was even suspected, and long before the industrial application of such products as petroleum and anthracite, was denominated the "Keystone State." Prophetic simile! To day the output of her mines and quarries is so much greater than that of any equal area upon the globe as to be of almost fabulous extent. Indeed, Aladdin never beheld such wealth. The aggregate value of Pennsylvania's mineral product in a score of years would be sufficient to buy all the diamonds and build all the palaces of the Arabian Nights. Her yearly production of coal, iron, and petroleum alone is worth nearly \$100,000,000, or more than one half the total value of the mine products of the United States, including gold and silver.

To show within small space something of her mine and quarry products which would do justice to the resources of Pennsylvania was the task placed before Prof. Reber, and Prof. Hitchcock. Two courses were open.

It was a Pennsylvanian, it was Bayard Taylor who said,—“From the same foundation you may build either a Chinese pagoda, or a Grecian temple.” So here, there was the opportunity for a mere throwing together of exhibit after exhibit in a sort of barbaric splendor accompanied by baring figures, or, to harmonize the various parts, and by showing facts in their relation to one another, build a lasting temple in honor of the material su-

premacy of our commonwealth. Fortunately for the State the latter, in able hands, has been the course pursued, and visitors at Chicago will have an opportunity such as has been never afforded before to study the wealth of Pennsylvania in natural resources, and their applications.

The aim has been to make the display show completely the crude material found in the State, and then as far as practicable to follow it from the mine or the quarry through all the stages of manufacture to the finished product. The main classes into which the exhibit is divided may only be enumerated here :—

Collections of minerals (systematic); Ores and and assorted Minerals, — Aluminium, Copper, Chromium, Iron, Manganese, Nickel, Zinc; Coal and Pressed Coal; Asphalt, Petroleum, and Illuminating and Lubricating oils; Building Stones and Slate, Clays, Kaolin, Silica, and articles for the manufacture of glass; Fire Brick, Tiles, Terra Cotta etc., etc.; Glass and Porcelain; Refractory Sand and Stone (for furnace construction); Graphite, crude and prepared; Lime, Cement, Hydraulic Cement, and Concrete; Pigments; Metallurgy of Iron and Steel, ore mixtures, fluxes, fuels, furnace charges, slag, pig-iron, etc., etc.; Metallurgy and uses of Aluminium, of Nickel, of Zinc; Special accompanying exhibit by the State Geological Survey, including statistics, charts and relief maps, and giving a full description of the State and its minerals geologically considered.

Of the more striking exhibits and features an obelisk of anthracite coal stands easily first. It has not been placed within the Pennsylvania enclosure, but by the special request of the Director General of the Exposition occupies the center of the Mines and Mining Building. Fifty-four feet high, it shows the exact depth and geological structure of the so-called "mammoth" vein as worked in the middle anthracite field on the Girard estate, and is a fitting center piece for the mining display of the United States.

The mining and preparation of anthracite is illustrated by a miniature mine, and the working