

A GREAT COAL DOCK ON LAKE SUPERIOR.

At Rice's Point, opposite the entrance of the harbor at Duluth, Minn., is a coal dock of great size, of the Ohio Coal Company, which has recently been newly equipped throughout with the most improved appliances for handling coal. The dock is 1,560 feet long and 300 feet wide, a double railway track extending through its center. It has a shed 950 by 150 feet, with watertight roof, for housing all the anthracite coal received, and the daily unloading capacity is 4,000 tons, the coal being handled by the Newell & Ladd self-filling or clam shell buckets, made specially heavy for digging soft lump coal, while the carriages by which the loaded buckets are conveyed from the dock front to the pockets in the center—150 feet—or dumped at any intermediate point, were made by W. S. Boyle & Company, of Chicago. One of our illustrations represents the entire dock from the side on which is the storage shed, the other view, looking the other way, showing the steel trestle and trusses. The steel work was designed by E. H. Hilgard, engineer of bridges of the Northern Pacific Railroad, and is a rebuilding in steel of the facilities with which the dockyard was equipped in 1882, which are claimed to be more economical in practice than newer designs whose introduction has been advocated.

There are ten 60 horse power Mundy engines, and five 100 horse power boilers, anthracite dust being used as fuel and steam being furnished to the movable towers along each side of the dock by an 8 inch pipe, 3,500 feet long, provided with 125 openings, permitting the making of connection with the main pipe at almost any point where it is necessary to place the hoisting rig. The whole equipment is deemed especially advantageous for the handling of big lump coal, which has heretofore been done by hand labor only.

The Ohio Coal Company also has extensive docks at West Superior and Ashland, Wis., and handles nearly 500,000 tons of coal annually. It is the exclusive representative on Lake Superior of the Pennsylvania Coal Company, handling their Pittston coal, and is also the exclusive representative of the Delaware & Hudson Canal Company in the handling and sale of the Lackawanna coal, being also interested in soft coal mines in Pennsylvania and Ohio, from which it receives coal for consumption in the Northwest.

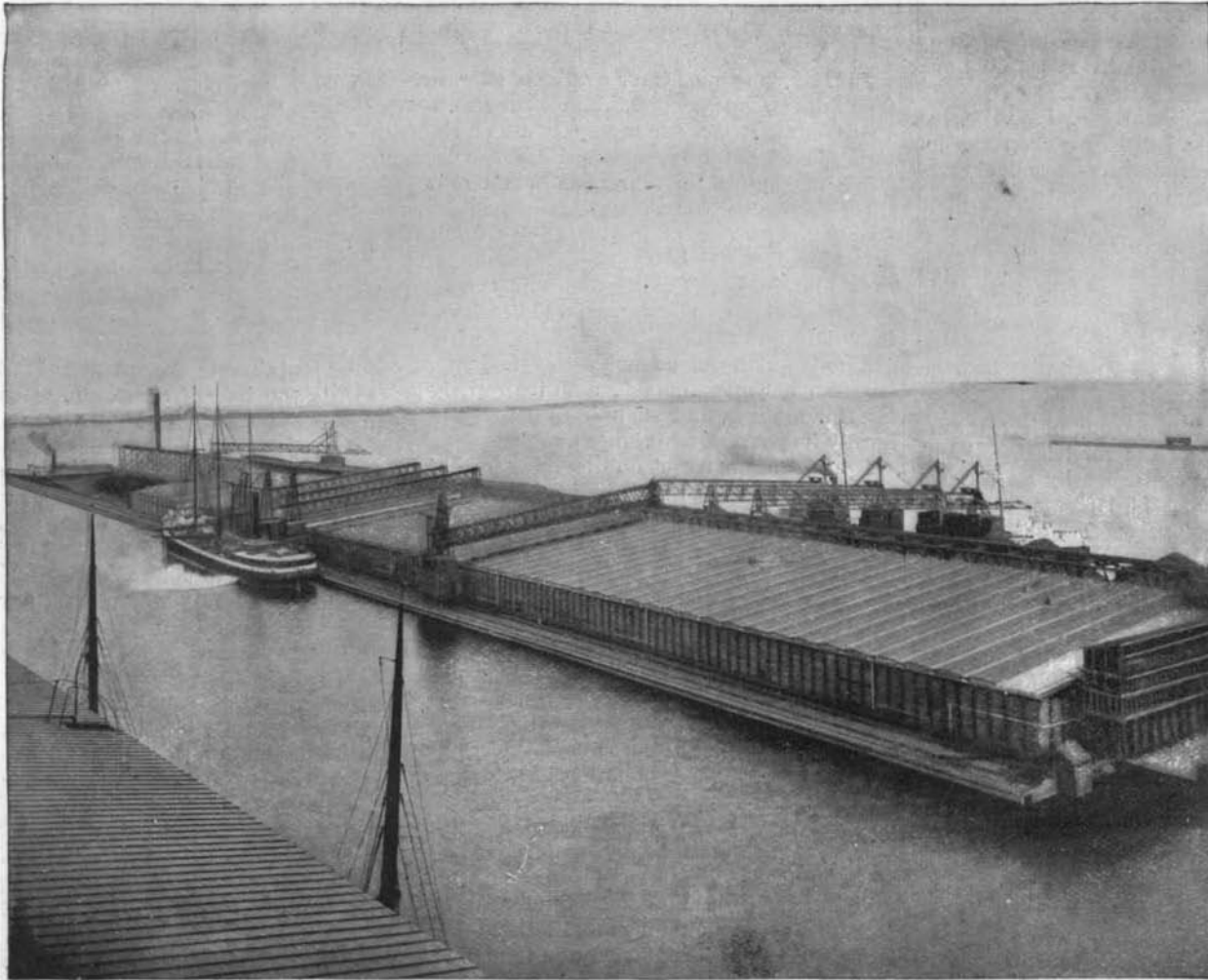
As fresh flowers and window plants are expensive and difficult to raise, a substitute may be obtained by the following process: Squeeze an old sponge out of warm water and drop into the holes a variety of such seeds as will germinate easily—"mixed bird seed" is very suitable for the purpose—and hang up in the warmest and best lighted situation. Sprinkle with water daily, and soon the sponge will be completely hidden by drooping vegetation.

The Solar Corona Photographed in Daylight—Chief Characteristic of the Corona.

From innumerable experiments made during the last six months it has been found that metallic plates, foils and films are relatively transparent to solar radiation of high refrangibility, and that photographic plates screened by such media during exposure to direct sunlight are affected in proportion to the thinness and celestial conductivity of the interposed screen.

being tin and lead foil and sheet copper. Prominent equatorial extensions over the regions of active sunspot groups are the chief features of these pictures.

An immense advance was made by the introduction of a small clear aperture (pin hole) in place of the camera lens. As was expected, a far greater mass of detail, more sharply definite and exhibiting a considerably greater extension of corona, was obtained by this method. Generally three or four exposures by both



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This important discovery has been successfully employed in photographing the solar corona. The results obtained are so remarkable and the recorded changes so great and rapid that great caution had to be exercised till a sufficient mass of confirmatory evidence could be obtained to justify this announcement. The photographs secured range from 1895, July 3 to December 15, on which latter date comet Perrine is also shown very close to its calculated place.

The earlier photographs were principally taken with a camera of 4 in. aperture, the metallic screens employed

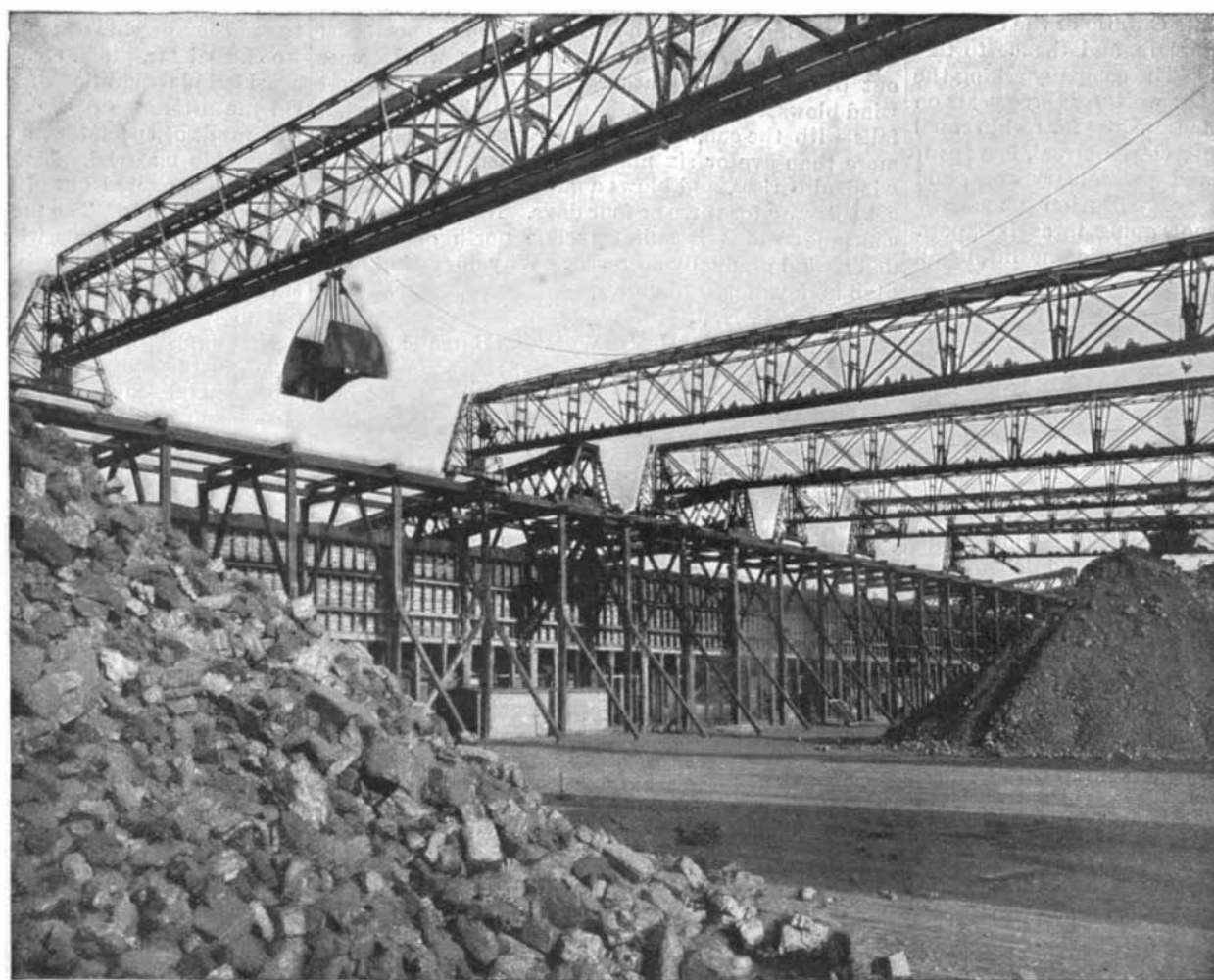
3. That many of the most prominent radiations exhibit a decided helical structure, two or three convolutions, in some instances, being distinctly traceable—a surprising and unexpected feature.

4. The great photographic strength of the coronal rays as compared with the feeble image of the solar disk in the photograph.

5. That the corona is an electrical phenomenon. The association between sunspots and coronal radiations is, perhaps, the most important feature of the search. If, as appears, we are able to associate particular sunspots with their coronal rays, and

study the variation of both at the same time, an immense advantage will have been gained. The research is one that appeals to every student of solar physics, and as it can be pursued by simple and inexpensive means, we may safely predict a rapid increase in our knowledge of the sun's immediate surroundings in the near future. —D. E. Packer, South Birmingham, England, From Popular Astronomy.

ORIGIN OF THE STEEL PEN. — We do not vouch for the truth of it, but a contemporary says: Sixty years ago Joseph Gillott was a working jeweler in Birmingham, England. One day he accidentally split one of his fine steel tools, and being suddenly required to sign a receipt, and not finding a pen handy, he used the split tool as a substitute. This happy incident led to the idea of making pens of metal.



STEEL TRUSS CONVEYORS OF A GREAT COAL DOCK—NO HAND LABOR REQUIRED.