THE CARPENTER MINERAL COLLECTION

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SOME time ago Mr. Horace F. Carpenter, of the firm of H. F. Carpenter and Son, gold and silver refiners, offered his collection, the work of fifty years, to the city of Providence. The collection comprises a large number of minerals, 250 chemical salts, 3,000 species of shells, a fine microscope, and a scientific library of 60 volumes. The gift was formally accepted, and the collection is now arranged in the museum at Roger Williams Park. The gift bears no conditions except that the collection shall be kept intact and properly displayed, and that it shall be known as "The Horace F. Carpenter Collection."

The mineral collection, commencing with a series of mahogany crystal models, and followed by the chemical salts, occupies four double desk-top cases. Trays are used, and the arrangement is according to Dana (6th edition). A good showing is made of native gold, representing nine localities, including a good-sized nugget from Nevada. Gold is further shown as produced by different methods of treatment, reduced by iron, copper, etc., in different degrees of fineness, up to and including 1000/1000 fine or chemically pure. A similar exhibit is made of other metals. There is a fine specimen of cubo-octahedral galena on crystallized siderite, from Greenland. The cube groups of this mineral from Rossie, N. Y., and Galena, Ill., are also good. Other notable sulfide specimens are "black-jack" on a light-colored matrix, from Alston Moor, England; a large cube of pyrite from Idaho; cobaltite crystal in pyrite matrix from Tunaberg, Sweden; and tetrahedrite groups coated with chalcopyrite, from Kapnik, Hungary.

Twenty-five of the South African diamond crystals are shown. In connection with many of the gem stones the artificial product is exhibited beside the natural, as in the case of ruby, sapphire, emerald, aquamarine, opal, etc. Then there is an attractive polished specimen of Madagascar rutilated quartz; a fine polished Lake Superior agate; a handsome plate of selenite from Oklahoma; fine tabular crystals of blue celestite, the largest of which is about 7 x 8 inches, from Strontian Island; babingtonite from Somerville, Mass.; cyanite, Buncombe Co., N. C.; etc.

There is also a goodly number of the "old-time" minerals, notably a crystal of amethyst about 1½ x 5 inches from Chester Co., Pa., a reminder of the late Charles H. Pennypacker. Among the old English specimens is to be seen a group of reddish-purple fluorite cubes of remarkable clearness, from Derbyshire.

Mr. Carpenter's interest in local minerals is indicated by a good representation of excellent specimens found in this state, among which I would mention: a splendid example of the Bristol amethyst; amethyst crystals from Cumberland; fine transparent smoky quartz crystals, up to 1 x 2½ inches in size, from Graniteville; a remarkable polished section of agate, or, as it might more properly be termed, jasper-agate, about 8 inches across, mostly brownish red, banded and mottled with yellow and gray, unlike the dull gray of the usual Rhode Island agates, from Diamond Hill, Cumberland; attractive chalcopyrite with crystallized quartz, from Cumberland Hill; hornblende in a light-colored matrix from Pawtucket; cyanite from Woonsocket; and pyrite nodules and crystallized groups from Block Island.

GEL MINERALS (COLLOID MINERALS)

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F. CORNU[11] proposed a very interesting theory to explain at least some of the gel minerals. He took, for example, aluminium hydroxide and passed into it dilute phosphoric acid. The resulting mass was a jelly consisting of aluminium hydroxide and adsorbed phosphoric acid. From a consideration of this reaction he proposed that, by a succession of adsorptions, various gel minerals may be produced in nature. These he designated as primary, secondary, tertiary and quaternary gel minerals. A series of this kind he believed to be represented in nature by:

1. $2Fe_2O_3+3H_2O$ (stilpnosiderite).
2. $2Fe_2O_3+P_2O_5+Aq.$ (delvauxite).
3. $2Fe_2O_3+P_2O_5+2SO_3+Aq.$ (diadochite).

[11] *Z. Chem. Ind. Kolloide*, 4, 89, 1909.