



**JOURNAL**  
**OF THE**  
**WASHINGTON ACADEMY OF SCIENCES**

VOL. 12

APRIL 19, 1922

No. 8

MINERALOGY.—*Sincosite, a new mineral.* (Preliminary note.)<sup>1</sup>

WALDEMAR T. SCHALLER, Geological Survey.

The name sincosite is given to a green hydrous calcium vanadyl phosphate,  $\text{CaO} \cdot \text{V}_2\text{O}_4 \cdot \text{P}_2\text{O}_5 \cdot 5\text{H}_2\text{O}$ , occurring in a black carbonaceous shale near Sincos, Peru. The mineral forms rectangular plates and is uniaxial negative. Some of the crystals are biaxial. Sincosite belongs to the uranite group of minerals (autunite, torbernite, carnotite, etc.) and illustrates the unexpected "equivalent valency" of quadrivalent vanadyl-vanadium with hexivalent uranic-uranium. Analysis of sincosite: CaO, 12.1 (calc. 12.33);  $\text{V}_2\text{O}_4$ , 36.3 (calc. 36.57);  $\text{P}_2\text{O}_5$ , 31.7 (calc. 31.28);  $\text{H}_2\text{O}$ , 19.9 (calc. 19.82); Insoluble, 0.3; total, 100.3. The full description of the mineral and a discussion of the relationships of all the minerals of the uranite group, will be published soon.

MINERALOGY.—*Cristobalite from the Columbia River Basalt of Spokane, Wash.*<sup>2</sup> EARL V. SHANNON, United States National Museum.

Recently while engaged in studying the minerals contained in gas cavities in the Columbia River Basalt from Spokane, Washington, the writer has identified the rare mineral cristobalite in a number of specimens. Although all of the minerals of these specimens will be described in detail in the final paper, to be published in the *Proceedings* of the U. S. National Museum, it is desired here to call attention to this new occurrence of this rare mineral and to outline, briefly, the mineralogic features of the locality as indicated by the work thus far completed. The specimens were donated as a carefully selected series to the Museum by Mr. Henry Fair of Spokane, to whom grateful acknowledgment is here tendered.

The rock containing the minerals is the ordinary monotonous basalt of the vast Columbia River lava plateau and came from various street and railway excavations in the City of Spokane. The rock

<sup>1</sup> Received January 20, 1922.

<sup>2</sup> Published by permission of the Secretary of the Smithsonian Institution.

contains scattered cavities varying up to several inches in diameter, the first lining of which consists of small blade-like crystals of a plagioclase identified by its optical properties as oligoclase-andesine. Upon this crust rest the disseminated white crystals of cristobalite and minute octahedrons of magnetite following which was deposited siderite ("sphaerosiderite") in small spherical masses. Later successive deposits include, in the order named, pyrite, iron opal, second generation sphaerosiderite, calcite, white opal, and hyalite. Weathering has converted some of the nodules of siderite to secondary pseudomorphs of limonite and goethite.

The cristobalite forms sub-translucent white crystals 0.5 mm. or less in diameter irregularly scattered over the interior of the cavities. These have a feeble luster and a white porcelain-like appearance. It was possible to detach several of the cristobalites from the matrix and to measure them on the 2-circle goniometer with sufficient accuracy to identify the forms and to indicate isometric symmetry. Most of the crystals are cuboctahedrons with the faces of the cube and octahedron equally developed. The faces are commonly concave or divided by sutures so as to give several signals while the cube faces often show a confusion of slightly re-entrant angles suggesting complex twinning and grading toward the spherulitic forms characteristic of the mineral. Rarely a crystal is observed which shows no indication of this twinning and which has the exterior form of a simple isometric crystal. The best of these measured was a cuboctahedron with its edges beveled by narrow faces of the trapezohedron. The latter form has not previously been observed on crystals of this mineral.

Under the microscope the material has a feeble birefringence and has a refractive index of  $1.485 \pm .003$ . The crystals are unchanged by boiling in hydrochloric acid and are volatilized without leaving any residue by evaporation with hydrofluoric and sulphuric acids. Although cristobalite has recently been described from several localities in the United States this is the first locality in this country to furnish measurable crystals of this mineral.

CRYSTALLOGRAPHY.—*Review of the optical-crystallographic properties of calcium oxalate monohydrate.*<sup>1</sup> EDGAR T. WHERRY, Bureau of Chemistry.

The mineral whewellite, calcium oxalate monohydrate, was discovered in 1840, and has subsequently been the subject of considerable

<sup>1</sup> Received Dec. 3, 1921.