NOTES ON RICKARDITE, A NEW OCCURRENCE

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Rickardite was first discovered in the Good Hope mine, Vulcan, Colorado, by Dr. Loui Weiss in 1902. The mineral was associated with native tellurium and gold and silver tellurides. Qualitative tests made by A. B. Sanford proved it to be a telluride of copper and the mineral was analyzed and described by W. E. Ford[1] in 1903.

Rickardite has been mentioned from two other localities besides the type locality, the Good Hope mine. H. B. Patton[2] named rickardite as one of the minerals of the Empress Josephine mine, Bonanza, Colorado. Native tellurium, sylvanite, hessite, petzite, and empressite were also found in this mine. Patton gave no description of the occurrence, only listing it in the table of minerals. C. Erb Wuensch[3] noted the occasional presence of rickardite in small amounts in the San Sebastion mine, Salvador. According to Mr. Wuensch[4] the rickardite occurred very sparingly and was in small and irregular grains associated with pyrite. Calaverite occurred in minor quantities.

A number of years ago tellurium was detected in certain ores of the Calumet and Arizona Mining Company, Warren, Arizona, by W. W. Brostrom. The tellurium was present only in small amounts and the occurrence was limited and very erratic. No telluride minerals could be identified. The presence of tellurium was easily detected by the permanganate method of copper analysis which was used. Tellurium is precipitated upon the addition of sodium sulphite to the HCl acid solution and darkens the cuprous thiocyanate precipitate. A small amount of the black precipitate was obtained and this gave a confirmatory test for tellurium. The gold and silver content of the ore was low.

Practically all of the samples in which tellurium was present were of oxidized ore from the Briggs' mine. A pulp sample of sulphide ore from a stope on the 1400 ft. level of the Junction mine gave an unusually heavy, black precipitate and this sample was given to the writer by Mr. Brostrom.

The pulp was taken into solution by HNO_3 acid and $KClO_3$, evaporated to moistness and taken up with HCl acid. Sulphur dioxide was passed though the HCl acid solution and the resulting black precipitate was allowed to settle and filtered. Treatment with concentrated sulphuric acid gave the characteristic reddish color of tellurium sulphate.

About twenty grams of the pulp were panned, obtaining a sulphide concentrate of pyrite and chalcopyrite nearly free from limestone. On examination under a microscope (90 x) the concentrate showed a number of small fragments of a purple mineral. These were compared with rickardite from the original find in the Good Hope mine and appeared identically the same. The crushed material was purple and it gave a definite reaction for tellurium with sulphuric acid. No quantitative

[1] Ford, W. E., Rickardite, a new mineral: *Amer. Jour. Sci., Ser. 4, vol.* **15,** pp. 69–70, 1903.

[2] Patton, H. B., Geology and ore deposits of the Bonanza district, Saguache County, Colo., *Colo. Geol. Survey Bulletin* **9,** p. 108, 1916.

[3] Wuensch, C. E., Geology of the San Sebastion mine, Salvador: *Min. and Sci. Press, vol.* **115,** No. 10, p. 348, Sept. 8, 1917.

[4] Wuensch, C. E., *personal communication.*

analysis was possible because of the scarcity of the material. The stope from which this sample came was inaccessible at the time of the examination and no other samples were obtainable. Ores containing a detectable amount of tellurium have not been found in the last two years.

The qualitative tests and the physical characteristics of this mineral are the same as those of the type mineral and it is probably rickardite. This makes the fourth recorded occurrence of this mineral and the third occurrence in the United States.

I wish to acknowledge the assistance of Mr. W. W. Brostrom in testing this material and the use of his notes on the detection of tellurium in these ores and for the pulp sample containing the rickardite.

Dr. A. R. Crook, since 1907 curator of the Illinois Museum of Natural History, died May 30, at the age of 66 years. Dr. Crook graduated from Ohio Wesleyan University and in 1892 received his Ph.D. degree at the University of Munich. From 1893 to 1906 he served on the instructional staff of Northwestern University.

Cenosite: A Correction

In behalf of Ward's Natural Science Establishment, Inc., and personally I wish to apologize for an incorrect statement in our offering of Cenosite in the June *American Mineralogist.* This was written very hurriedly owing to my hasty removal to a hospital for an operation and reference was not made to any literature except *Dana's System.* The occurrence at Nordmark was therefore overlooked.

George L. English

PROCEEDINGS OF SOCIETIES

NEW YORK MINERALOGICAL CLUB

Minutes of the April Meeting.

A regular monthly meeting of the New York Mineralogical Club, with 66 members present, was held at the American Museum of Natural History on the evening of April 16, 1930, with President Herbert P. Whitlock in the chair.

Mr. Martin L. Ehrman of New York City and Mr. Miro Bianchi of Paterson, N. J., were elected to membership.

This being the annual meeting, the following officers were unanimously elected: President, Frederick I. Allen; First Vice-President, George E. Ashby; Second Vice-President, Horace R. Blank; Secretary, James F. Morton; Treasurer, Gilman S. Stanton.

The address of the evening was delivered by the retiring president, Herbert P. Whitlock, his subject being "*The Minerals in the Earth's Crust.*" The speaker discussed the general subject of the elements from the different viewpoints, and stressed the method approach by the geologist and the mineralogist.

In a series of colored diagrams, the speaker gave a vivid presentation of the eleven most common minerals in the earth's crust and their proportionate abun-