

Also in small crystals with the phenacite resulting from decomposition of danalite.

*Siderite.* Pale-brown anhedral crystals as decomposition product of danalite.

*Sphalerite.* Associated with galenite in intergrown masses, and as stringers with chlorite penetrating feldspar along fractures. Also in the quarry between Rockport and Gloucester as a decomposition product of danalite.

*Tantalite.* There is in the Harvard collection a prismatic crystal of tantalite 25 mm. long imbedded in feldspar of the graphic-granite zone. Front and side pinacoids are well-developed and it is terminated with domes and basal pinacoid.

*Thorite.* Var. Orangite in orange-yellow grains is associated with cyrtolite.

*Ytrocercite.* Reported by Sears as occurring on massive quartz at Rockport.

## NOTES AND NEWS

SUPPLEMENTARY NOTE ON CRISTOBALITE. AUSTIN F. ROGERS. *Stanford University.*—Since the manuscript of the writer's note on Cristobalite from Yellowstone National Park<sup>1</sup> was sent in for publication in the AMERICAN MINERALOGIST, this mineral has been recognized in a new locality in California. The statements made in that paper as to the probable frequent occurrence of cristobalite in medio-silicic rocks can therefore be emphasized by the addition, on page 6, of one each to the number of occurrences in California, in America, and in rhyolitic obsidian.

The following additional notes may be of interest. Iddings in the paper cited (p. 264, and Pl. 12, fig. 3) referred to certain minute pellets in the rock of Obsidian Cliff, which may well have been cristobalite. The thin sections of the specimens studied by the writer show in spots an intimate intergrowth of orthoclase and cristobalite. In addition to the mosaic structure and polysynthetic twinning of this mineral, it exhibits in section a peculiar curved fracture which seems to be characteristic of it, thus giving a further means for its recognition.

A METHOD OF OBSERVING AIRY'S SPIRALS. FRANK J. KEELEY. *Academy of Natural Sciences of Philadelphia.*—It may not be generally known that Airy's spirals may be exhibited with a *single* plate of quartz cut normal to the axis, by employing a vertical illuminator and a plane mirror just beneath the quartz plate. The objective used should have sufficient working distance to focus on the reflecting surface of the mirror and the vertical illuminator must be of the disc type. Under these conditions the optical figure may be seen in the back focal plane of the objective by merely looking down the tube through a Nicol prism, or it may be magnified by a secondary microscope in the tube. No polarizer is necessary, for the light reflected by the disc of the illuminator, even at the usual angle of 45°, is sufficiently polarized to show the figure fairly well; and, by tilting the disc more obliquely until it approaches the angle of maximum polarization, and raising the source of illumination correspondingly, the effect is quite as perfect as when a polarizer is interposed in front of the light.

<sup>1</sup> Published in *Am. Min.*, 6 (1), 4-6, 1921.

SAPPHIRES, ASTERIATED, FROM PLACEMAN'S CREEK, CENTRAL QUEENSLAND, AUSTRALIA. GEORGE F. KUNZ. *New York City*. Sapphires of a novel type have recently been found on the Excelsior Claim, 5 kilometers ( $3\frac{1}{2}$  miles) south of Ruby Valve, near Placeman's Creek, in central Queensland, Australia, near the Central Queensland Railroad. They are of blue color, not transparent, but show a well-defined (not movable) star-cross, due to crystallization. The star is bronze colored, in a field of deep blue. The star has frequently the exactness of a cross of Saint Andrew; and the ends of the cross terminate in the center of the hexagonal pyramids and not at the corners. They occur in alluvial soil, in a second layer of an old river channel. They are found in an alluvial deposit with rounded boulders called "Billybolas" from a few cm. up to 3 meters in length, but all rounded. The discovery dates from October, 1920. There is also reported, from some 40 km. (25 miles) above this region, the occurrence of a green, rolled, corundum crystal weighing over 50 grams; this, also, is not transparent.

SPHALERITE IN COAL PYRITE. LEONARD P. DOVE. *University of North Dakota*. An occurrence of sphalerite in coal pyrite (in part marcasite) in the Pan Handle mine at Bicknell, Indiana, has never been reported, so far as the writer knows. Mention has been made<sup>1</sup> of zinc in small amounts being shown by analyses of pyrite from this mine, but no details are given, hence it may be of interest to furnish a brief description of this rather unusual association.

The sphalerite is found in the knobby portions on the upper side of lenses or nodules of finely granular pyrite-marcasite. These nodules are fairly abundant in the lower few centimeters of the shale above the coal, and between the shale and the coal. While bands and lenses are fairly common in the coal itself, these do not seem to contain sphalerite. The coal bed is number VI of the Indiana Geological Survey.

The sphalerite occurs as grains from 1 mm. to 1 cm. in diameter as a filling between the larger granules of pyrite-marcasite. It occasionally includes grains of pyrite-marcasite. No sphalerite crystals with well defined faces were noted. The sphalerite is honey colored to rosin colored. The perfect cleavage faces of the sphalerite make a strong contrast with the dull faces of the pyrite-marcasite in reflected light.

Only about 10% of the non-selected nodules or lenses from the roof shales contain visible sphalerite, but selected specimens may contain as much as 20%. A rather careful estimate based upon about 6 kg. of pyrite-marcasite furnished by the Pan Handle Coal Company shows approximately 0.27% sphalerite, which would correspond to a zinc content of about 0.18%.

The *Engineering and Mining Journal* has recently published a discussion of the correct pronunciation of the term bauxite. Many Americans pronounce this bawksite, and some boxite; but there are also those who insist that, since the name is of French origin, the correct pronunciation is hozite. For a time

<sup>1</sup> Dove, *43d. Ann. Rept. Dept. Geol. and Nat. Res. Indiana, Year Book, 1918*, p. 232.

those taking part in the discussion did not seem to get anywhere, but ultimately the well-known French-Canadian economic geologist, Dr. Th. C. Denis, pointed out that the French themselves pronounce it *bokseet*, which would appear to settle the matter. The English equivalent of this is *boksite*. (*Eng. Mining J.*, 110 (24), 1115, 1920.)

## PROCEEDINGS OF SOCIETIES

### PHILADELPHIA MINERALOGICAL SOCIETY

*Wagner Free Institute of Science, January 13, 1921*

A stated meeting of the Philadelphia Mineralogical Society was held on the above date with the president, Dr. Hawkins, in the chair. Fourteen members and eight visitors were present.

Dr. Henry Leffmann addressed the society on "Some methods of photomicrography for petrographic work," illustrated with numerous lantern slides. Mr. Robert J. Hagey exhibited and described a chart showing the classification and composition of the igneous rocks. A communication was read from Mr. Frank J. Keeley describing a method of exhibiting Airy's spirals with a single plate of quartz [see Notes and News.] Mr. Charles W. Hoadley exhibited arsenopyrite and rutile from Franklin Furnace, N. J.

SAMUEL G. GORDON, *Secretary*.

### NEW YORK MINERALOGICAL CLUB

The regular monthly meeting of the N. Y. Mineralogical Club was held at the American Museum of Natural History on Wednesday, January 19th, 17 members being present.

Mr. Paul Walther, of Elizabeth, N. J., was proposed for membership by W. H. Broadwell. Mr. Broadwell exhibited a specimen of native bismuth from New South Wales and also a specimen of molybdenite. Dr. Kunz exhibited some interesting star sapphires (see Notes and News). Mr. Walther exhibited two specimens from West Paterson, N. J. Mr. Grenzig reported having found a few years ago a specimen of calamine and a fossiliferous boulder near the site of the Brooklyn Museum building. Mr. F. I. Allen spoke entertainingly of the geology at the site of the new Cunard Building in lower Broadway. He described the glacial deposits of sand, silt, etc., and also the bed rock, exhibiting a specimen of same containing many small garnets.

Dr. Kunz spoke, as announced, on "Some reminiscences of the older mineral localities of New York and its vicinity." He stated that the first mineralogist he had met was the late B. B. Chamberlin, a wood engraver, and a fossil collector, from Cincinnati. Mr. W. E. Hidden, a bank note engraver, was also associated with the mineralogists of this period. Dr. Martin and Jas. B. McIntosh and S. C. H. Bailey were others active at this time. Dr. Kunz exhibited some of the older mineralogical books and pamphlets. A copy of the *Annals of the Lyceum of Natural History* was among these. It contained two early articles on local geology. One article was entitled "On the Mineralogy of New York Island," by S. C. H. Bailey, and the other, "Geology of York Island" by R. P. Stevens. These articles bear the date of 1865.