

Enough has been said to show that too few data are at hand to give an adequate explanation of isomorphous mixing, even in the relatively simple example of albite and anorthite.

The writer wishes to express his gratitude to H. E. Merwin and to H. S. Washington for discussions of this subject.

### RECENTLY DESCRIBED "BISBEEITE" FROM THE GRAND CANYON IS CYANOTRICHITE

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In a recent paper in this journal<sup>1</sup> entitled "The Optical Properties and Morphology of Bisbeeite," Professor Austin F. Rogers described a blue mineral, occurring as minute fibrous spherulites in the Grandview mine, Grand Canyon, Arizona. His identification of the material as representing this species was based on the agreement of his optical data with that for bisbeeite, as determined by W. T. Schaller and recorded in Dana, Appendix 3, p. 14; however, Dr. Schaller informs the writer that the value of 1.65 there given for  $\gamma$  represents an intermediate value between  $\beta$  and  $\gamma$ . Although E. S. Larsen<sup>2</sup> definitely states that he used the original material for a more precise determination of the properties given, Rogers considers it "doubtful whether he worked with the original material." Dr. Larsen informs the writer that not only is his published statement correct, but that he has recently redetermined the values, completely confirming his previous data.

Two very beautiful specimens of this mineral, consisting of methyl-blue capillary crystals, are in the collection of Mr. George Vaux, Jr., Bryn Mawr, Pa., and these were identified optically by the writer as the orthorhombic copper aluminum sulfate, cyanotrichite. They give a copious reaction for sulfur by the usual tests. A comparison of Rogers' data with that of cyanotrichite indicates his material to be that mineral, and not bisbeeite, as may be seen by inspection of the accompanying table.

This conclusion is further substantiated by Rogers' statement: "Although a silicate, it is noteworthy that fragments of the mineral are soluble in a molten sodium metaphosphate bead." As the mineral is a sulfate and not a silicate, this chemical behavior is to be expected.

<sup>1</sup> *Am. Min.*, 7, 153-154, 1922.

<sup>2</sup> Microscopic Determination of Non-opaque Minerals, *U. S. Geol. Survey, Bull.* 679, p. 48.

OPTICAL PROPERTIES OF CYANOTRICHITE AND BISBEEITE

	Cyanotrichite, <sup>1</sup> Tintic, Utah (Larsen)	Grand Canyon <sup>2</sup> mineral (Rogers)	Bisbeeite <sup>3</sup> (original material Larsen)
Color	Bright blue	Methyl blue	Nearly white
Form	Needles	Fibrous spherulites	Cotton-like
Orientation	Z = c	Z = c	Z    elongation
Sign	+	+	+
Pleochroism: X	Colorless	Neutral	Nearly colorless
Y	Pale blue	Pale bluish-green	Nearly colorless
Z	Bright blue	Deep blue	Pale greenish
Indices:			
a	1.588 ± .003	1.589 ± .001	1.615 ± .01
β	1.617 ± .003	1.620 ± .001	1.625 ± .01
γ	1.655 ± .003	1.649 ± .001	1.71 ± .01

<sup>1</sup> Larsen: *U. S. G. S. Bull.*, 679, 65, 1921.

<sup>2</sup> Rogers: *Am. Min.*, 7, 153, 1922.

<sup>3</sup> Larsen: *U. S. G. S. Bull.*, 679, 48, 1922.

PROCEEDINGS OF SOCIETIES

THE MINERALOGICAL SOCIETY OF WASHINGTON, D. C.

For a number of years there has existed in Washington an informal organization known as the Petrologists' Club, before which numerous papers on petrology and allied sciences have been presented and critically discussed, to the advantage of all concerned. Early in 1923 several mineralogists talked over the desirability of organizing a similar society at which papers of more directly mineralogical nature might be similarly presented and informally discussed. W. F. Foshag agreed to act as Secretary, and sent out a number of invitations for a meeting at the residence of W. T. Schaller, 1637 R. St. N. W., on the evening of Friday, February 23rd, 1923. Braving the coldest weather of the winter, the following 13 mineralogists were present, thus expressing their approval of the formation of this society: W. S. Burbank, W. F. Foshag, H. Insley, E. S. Larsen, H. E. Merwin, C. S. Ross, E. B. Sampson, W. T. Schaller, F. C. Schrader, G. Steiger, E. T. Wherry, R. W. G. Wyckoff, and T. D. Shipton of Hanover, Ill., a member of the Mineralogical Society of America, visiting in Washington.

The first paper presented was by W. T. Schaller: **Ptilolite and related zeolites.** Several of these high-silica, acid-insoluble zeolites have been described, but conflicting statements as to their relationships appear in the literature. Recently Bøggild has urged the identity of "flokite" with ptilolite, and T. L. Walker the identity of ptilolite with mordenite. By correlating published data as to composition, crystallography, and optical properties, supplemented by new determinations (by Schaller, Ross, and Shannon), it is clearly shown that three distinct species are represented: