

THE SO-CALLED FISCHERITE FROM ROMAN  
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THE original "fischerite" from the Urals was described as occurring in small, six-sided prisms and scales belonging to the orthorhombic system and having the following optical properties: Opt. +,  $2H_{Na} = 66^\circ 4'$  (variable),  $\beta = 1.555$  (?),  $X = b$ ,  $Z = c$ .

Two specimens labeled "fischerite, Roman Gladna, Hungary," have been examined by the author microscopically and altho they fit the description given for the so-called fischerite from this locality, they do not agree at all with the description of the original fischerite.

A specimen kindly furnished the author by Mr. L. P. Gratacap and the Museum of Natural History of New York is made up of colloidal crusts, sensibly isotropic, and having a somewhat variable index of refraction with average  $n = 1.51 \pm 0.02$ . These data agree with those for planerite, which is reported to be amorphous, and to have an index of refraction of 1.517.

A second specimen from Roman Gladna, kindly furnished the author by Professor Ford from the collections of Yale University, is a white, opal-like enamel. It is made up of layers of minute fibers with positive elongation and sensibly parallel extinction. The different layers have somewhat different optical properties but the average index of refraction is about  $1.47 \pm 0.01$ , and the birefringence is moderate. The following data measured by the author on vashegyite from Vashegy, kindly furnished by Colonel Roebing, shows conclusively the identity of the two:

Minute fibers with + elongation;  $\beta = 1.48 \pm 0.01$ . Birefringence about 0.02.

On the other hand, vashegyite is also reported to be amorphous with an index of refraction of  $1.49 \pm$  and this type is possibly identical with evansite, which is in part amorphous with an index of refraction of 1.485.

In common with many other colloidal or metacolloidal minerals the hydrous aluminium phosphates need considerable revision and a readjustment of their nomenclature. Such minerals are commonly variable in their chemical composition and properties and,

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in addition, the careful microscopic study which is required to determine whether or not the materials described are homogeneous has not always, nor indeed often, been made. A number of such so-called minerals are no doubt mechanical mixtures.

The author would be glad to get a few tiny crystals of fischerite from the original locality for a determination of its optical constants. An equivalent exchange can be furnished, thru the National Museum.

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### THE PROBABLE IDENTITY OF FISCHERITE WITH WAVELLITE

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In the preceding note Mr. Larsen has shown that the so-called fischerite from Hungary is unquestionably different from the original fischerite. From a study of the literature the writer has come to the conclusion that the original fischerite itself is not a distinct species, but is probably only wavellite.

Crystallographically fischerite is supposed to possess a different prism angle from wavellite; the crystals are, however, very poor and not terminated by pyramids, and are therefore difficult to orient correctly;  $61^{\circ} 28'$ , the measurement given as made between two prism faces of fischerite may accordingly equally well have been made between one prism face and a side pinacoid face; the corresponding value for wavellite is close to  $61^{\circ}$ .

The optical properties assigned to the two are essentially identical. The orientation and character is the same; one of the indices of refraction of wavellite is 1.552, and one of fischerite is said to be practically the same, 1.555, the others not being known in the case of this mineral; the axial angle of wavellite is about  $75^{\circ}$ , while that of fischerite is given as " $66^{\circ} 4'$ , but variable," and it might readily vary as much as  $9^{\circ}$ .

The only analysis of fischerite extant was made on a minute quantity of impure material, and except in the water content, may readily be in error several per cent. The water, determined by loss or ignition, is likely to be approximately correct, and the 27.50% assigned to fischerite lies within the limits shown by different specimens of wavellite (26.5–28.3%).

Altho none of the original fischerite has been obtainable for redetermination of its properties, the published descriptions thus certainly indicate the probability of its identity with wavellite.