identity of eakleite with xonotlite, but a remarkable uniformity in the optical properties of specimens from various localities.

Optical Properties of Xonotlite

	1	2	3
α	1.583	1.579	1.581
β	1.583	———	———
γ	1.593	1.590	1.591
2V	very small	small	small
Opt. char.	+	+	+
Elongation	Z	Z	Z

1. "Eakleite," California, Larsen.
2. "Eakleite," Isle Royal, Mich., Larsen.
3. Xonotlite, Tetela de Zonotla, Mex. New data by Larsen.

The name xonotlite has priority and should be retained for the species. From all the localities the xonotlite is in matted fibers of white, gray, or pale pink color, and great toughness. Xonotlite has a specific gravity of about 2.70. It is decomposed in acid with separation of pulverulent silica. It fuses at about 2.5.

Xonotlite appears to be a relatively common mineral as, in addition to the localities described above, I have found it in specimens submitted for identification from Mine Center, Minn.

BARRANDITE FROM MANHATTAN, NEVADA[1]

Earl V. Shannon, *U. S. National Museum*

A shipment of specimens recently received at the National Museum from Mr. H. G. Clinton of Manhattan, Nevada, contained a mineral labeled "yellow turquoise" which appeared unusual in character and, since a large number of aluminium phosphates are under examination in this laboratory, it was subjected to an analysis. The results of this investigation, as presented below, identify the mineral as barrandite, a hydrated phosphate of iron, probably the ferric iron analogue of variscite and which has, hitherto, been known only from the original locality which is Przibram, Bohemia. The locality is Manhattan and the label gives the additional information that the mineral occurs "in lime-rhyolite contact with vashegyite and utahlite."

The mineral forms a filled seam occupying an irregular crack averaging 5 mm. in width with small side branches and spurs. The matrix is an indeterminate rock of dark gray color having shaly

[1] Published by permission of the Secretary of the Smithsonian Institution.

partings coated with a whitish clayey substance. Small flakes of the matrix occur as inclusions in the phosphate.

In the specimen examined the barrandite appears amorphous and opaque with a faint waxy luster. In general the appearance is quite similar to that of a brown jasp-opal with smooth, imperfectly conchoidal, flinty fracture. It is very brittle and tends to disintegrate with the formation of contraction cracks. The body color is between olive ocher and Isabella color (Ridgway), although the color deepens toward the borders, and in the smaller seams trends toward a rich golden brown and the mineral becomes more translucent. Fragments without visible gangue are found by microscopic examination to be essentially pure and, like the utahlite variety of variscite, very finely holocrystalline, the grains being entirely too small to permit of determination of the optical properties other than mean index of refraction, 1.640, and birefringence, 0.020, which are in agreement with the values found by Larsen for the original barrandite which had a mean index of 1.650 and a birefringence of 0.030.

The mineral has a hardness slightly above 2.0. It is completely soluble in hot hydrochloric acid but is insoluble in nitric acid. The analysis yielded the following composition:

ANALYSIS AND RATIOS OF BARRANDITE FROM NEVADA

CONSTITUENT	PER CENT		RATIOS	
SiO_2	1.12			
Al_2O_3	8.15	.080		
Fe_2O_3	30.00	.188	.268×1	.96×1
P_2O_5	36.29	.256	.256×1	.91×1
CaO	1.20	.021		
FeO	.90	.013		
MgO	1.36	.034	.291×4	1.03×4
$H_2O+110°C.$	19.72	1.095		
$H_2O-110°C.$	1.88	.104		
	100.62			

The ratios are thus in fair agreement with the formula originally given for barrandite, namely, $(Fe,Al)_2O_3.P_2O_5.4H_2O$. The water below 110° is considered hygroscopic since it is present in amounts less than half a molecule and seems to be separated by a considerable temperature interval from the main bulk of the water. If it be included the ratios give nearly $5H_2O$. The bivalent bases are here included with the water ratios rather than with the trivalent

oxides, it being assumed that the composition of the mineral can be expressed as $H_2FePO_5.H_2O$, the bivalent bases occurring in replacement of the basic hydrogen. These bases may in part exist as extraneous or adsorbed constituents in such a fine grained material of evidently metacolloidal character, or may possibly be in part combined with the silica. That the mineral is to be referred to barrandite is shown by its optical properties which are quite distinct from those of strengite (mean index above 1.70) and koninckite (isotropic).

PROCEEDINGS OF SOCIETIES

PHILADELPHIA MINERALOGICAL SOCIETY

Academy of Natural Sciences, June 14, 1923.

A stated meeting of the Philadelphia Mineralogical Society was held on the above date, Mr. Harry W. Trudell presiding in the absence of Mr. Geo. Vaux. In the absence of the Secretary, Mr. J. C. Boyle assumed the Secretary's place *pro tem.* Fifteen members were present.

The minutes of the previous meeting were read and approved. Mr. Jos. L. Darlington, of West Chester, Pa. was proposed for membership by Mr. Biernbaum, and seconded by Mr. Horace Hallowell. Several excursions were proposed by Mr. Oldach, as follows: Perkiomenville, Wood's Chrome Mine, and Feeney's Quarry, at Holland, Pa.

Mr. Hoadley reported the digging of a water tunnel by the Newark Water Co. near Great Notch, N. J. which passes under the floor of the old Francesco Quarry. The minerals from the new boring are the same as formerly found at the Quarry; gmelinite, calcite, heulandite, stilbite, amethyst, smoky quartz, prehnite. Mr. Hoadley also reported that the New York Club had found autunite, hyalite and yellow beryl at the second Kunkle Quarry, Bedford, N. Y. on May 30th last. Mr. Vanardsdalen stated that Feeney's Quarry seemed a good prospect at present and that while the Jarrett Quarry was being worked nothing was found worthy of comment. Mr. Hoadley stated that brucite of superb quality, crystallized, had been found several winters ago in the excavation for the New York Stock Exchange Annex. Mr. Blank exhibited hornblende from Rock Hill Quarry near Quakertown, Pa., which was accompanied by an undetermined microscopic mineral. Mr. Millson reported being at Perkiomenville on May 30th but found little of interest as the recent blast had covered what minerals were usually found near the bottom of the Quarry. Mr. Keeley exhibited fine specimens of blue tourmaline from Andover, Maine, purchased for the Vaux Collection, as well as kunzite crystals for the same collection. He stated he had received a letter from the Pennsylvania State Geological Survey, requesting specimens of cut stones of Pennsylvania minerals, and asked for whatever good material the members cared to furnish.

The trip to French Creek on May 27th and 28th was reported upon by various members; Mr. Oldach reported having secured an octahedron of pyrite of good size, considerable chalcopyrite crystals in blocks of byssolite, and apophyllite.