NEW MINERAL NAMES

Duttonite


Analysis (by R. M.) gave $V_2O_5$ 2.6, $V_2O_4$ 75.3, FeO 0.4, $H_2O$ 18.1, insol. 4.2; sum 100.6%. Duttonite is light brown, luster vitreous, hardness about 2.4. X-ray study shows it to be monoclinic, strongly pseudo-orthorhombic, space group $I2/c$ ($C_{2h}$); the unit cell (measured by M. E. Mrose) has $a_0$ 8.80 ± 0.02, $b_0$ 3.95 ± 0.01, $c_0$ 5.96 ± 0.02 Å, $\beta$ 90°40' ± 5', $Z$ = 4. G. calcd. = 3.24.

Duttonite is optically biaxial, pos., $\alpha$ = 1.810 ± 0.003, $\beta$ = 1.900 ± 0.003, $\gamma$ = 2.01, 2V about 60°, $r < v$, moderate; $X = a$ (pale pinkish brown), $Y = c$ (pale yellow brown), $Z = b$ (pale brown).

Duttonite occurs as crusts and coatings on an undescribed V oxide along fractures in ore-bearing sandstone. The crystals are six-sided platy crystals up to 0.5 mm. in the longest dimension. Associated minerals are melanovanadite and hexagonal native Se. The principal ore minerals of the mine include montroseite, paramontroseite, uraninite, coffinite, and vanadiferous silicates.

The name is for Clarence Edward Dutton, 1841-1912, geologist.

Michael Fleischer

Paradamite


Paradamite is a triclinic dimorph of adamite. Analysis gave ZnO 56.22, FeO 0.45, FeO 0.12, As$_2$O$_4$ 40.17, $H_2O$ 3.44; sum 70.04%. D. Cleavage {010} perfect. Optically biaxial, neg., $\alpha$ = 1.726, $\beta$ = 1.771, $\gamma$ = 1.780 (all ± 0.002), 2V 50°. X-ray powder data are compared with those for the triclinic phosphate analogue tarbuttite and for adamite. For paradamite, the strongest lines and intensities are in Å: 6.33 10, 3.71 10, 2.99 9, 2.84 9, 2.49 8.

Paradamite was found on specimens from the Ojuela Mine, Mapimi, Durango, Mexico, as sheaflike aggregates of crystals and as somewhat rounded and striated equant crystals up to 5 mm. in size. It was found with mimetite and adamite on a matrix of limonite. Legrandite, plattnerite, and morduchite occur at the same locality.

M. F.

Nekoite


Re-examination of material from Crestmore, Cal., described as okenite by Eakle, Bull. Dept. Geol. Univ. Calif., 10, 327 (1919), showed that it differed from type okenite. Weissenberg and x-ray powder data are given; the unit cell has $a$ = 7.60, $b$ = 7.32, $c$ = 9.86 Å, $\alpha$ = 111°48', $\beta$ = 86°12', $\gamma$ = 103°54', and contains 3(CaO, 2SiO$_2$, 2H$_2$O). The crystals are needles showing repeated twinning with lamellae parallel to the good cleavage, (100). Mean index (Na) 1.535 ± 0.002. Material heated to 900° C. gave the pattern of a slightly disordered wollastonite (or parawollastonite). Indexed x-ray powder data are given; the strongest lines in Å are 9.25, 3.36 (b), 2.82. Comparison of these data with those measured on okenite show the minerals to be distinct and apparently dimorphous.

The name is an anagram of okenite.

M. F.
NEW MINERAL NAMES

NEW DATA

Bøggildite


Preliminary data on this mineral were abstracted in Am. Mineral., 39, 848-849 (1954). The following new data are given: Optically biaxial, pos., 2V=78-80°, ns (all ±0.002) a=1.462, β=1.466, γ=1.469, γ=β, α=36°. Monoclinic, pseudo-orthorhombic, space group P21/c, a=5.24, b=10.48, c=18.52, β 107.35°; the unit cell contains 4[Na2Sr2Al6(PO4)F8].

Tuhualite


Tuhualite was originally described (Marshall, 1932) as a variety of amphibole, but later (1936) Marshall thought it to be a distinct mineral. However, no analysis had been made. Hutton now re-defined the mineral. Analysis gave SiO2 62.93, Al2O3 0.63, Fe2O3 14.09, FeO 9.58, MgO 0.42, CaO tr?, MnO 0.81, Na2O 7.11, K2O 1.74, H2O+0.38, H2O+1.61, TiO2 0.42, P2O5 none; sum 99.72%. This corresponds to the formula H2(Na, K)12Fe5Fe6 (SiO8)15.

Tuhualite is orthorhombic, space group either Cmca—D4h8 or C2ca—C2y7. The unit cell has a=14.31, b=17.28, c=10.11 Å, Z=1; a:b:c (x-ray) =0.828:1:0.585, (goniometric) =0.8243:1:0.5658. Cleavages (100), (010), (001) good, G.=2.89, hardness 3-4, very brittle. Optically biaxial, positive, α=1.608±0.003, β 1.612, γ 1.621±0.003; beta=β, gamma =γ, X colorless to very pale pink, Y violet or lavender, Z intense purplish-blue, 2V variable, for analyzed material 70° at 4900Å, 61-62° at 6026 Å. Indexed x-ray powder data are given; the strongest lines are at 7.16, 2.766, and 3.18 Å.

Bayerite


Bayerite, a dimorph of gibbsite, long known as a synthetic product, is now reported as a naturally occurring mineral. Differential thermal analyses of gibbsite gave peaks at about 305° and at 510-530°, whereas synthetic bayerite gave two peaks at about 210° and 266-284°. Bauxite from Fejnöfó gave a single peak, measured at 296° to 36° on 3 different instruments. A similar curve with a single peak at 290° was obtained on material from Portole, Istria, which is a fibrous travertine-like substance deposited from sulfurous springs. Since the curves show no indication of the 510-530° peak (decomposition of boehmite), these are believed to be bayerite. The Fejnöfó material contained Al2O3 65.30, SiO2 0.36, Fe2O3 0.50, TiO2 none, CaO 0.28, MgO 0.19, SO3 trace, ignition loss 33.30; sum 99.93%. Differential thermal analyses of 14 analyzed Hungarian bauxites show slight peaks at 186° to 220°; they are calculated to contain 4.4 to 13.2% bayerite.

DISCUSSION: X-ray confirmation is needed.

M. F.
NEW MINERAL NAMES

DISCREDITED MINERALS

Waltherite (= Walpurgite)


X-ray study of 8 samples of waltherite (presumably a bismuth carbonate) from the type locality showed that it is identical with walpurgite (bismuth uranium arsenate). Microchemical tests showed Bi, U, As, and P, and CO₂ (admixed bismutite?) Other properties including physical properties and D₅ (5.42 waltherite, 5.49 walpurgite) are in good agreement. The name waltherite (1857) has priority over walpurgite (1877), but the description was so inadequate that the name waltherite should be dropped.

M. F.

Alushtite (= Dickite + hydrous mica)


Alushtite was described by Fersman in 1907 as a hydrous aluminum silicate from Alushta, Crimea. It is now shown by chemical, optical, x-ray, and D.T.A. study to be dickite with admixed hydrous mica.

M. F.