NEW MINERAL NAMES

MICHAEL FLEISCHER

Tungsten-germanite, germanite-(W) (=tungstenian germanite), vanadium-germanite (=vanadian germanite)

B. H. GEIER AND J. OTTEMANN (1970) New secondary tin-germanium-(molybdenum-, vanadium-) germanium minerals from the Tsumeb ore-deposit. *Neues Jahrb. Mineral. Abhandl.* **114,** 89–107.

Microprobe analyses of 3 normal germanites gave the formula $Cu_{2.89}(Fe,Zn)_{0.57}$ $(Ge,As)_{0.57}(Ge,As)_{0.77}S_{3.77}$ (total 8 atoms). Four complete probe analyses of color variants showed the presence of W 7.4 to 10.3%; the last has the formula (total atoms = 8), $Cu_{3.22}Fe_{0.02}Zn_{0.14}W_{0.18}Ge_{0.61}As_{0.13}S_{3.70}$. Two other analyses show V 2.9, 2.0%; former is calculated to $Cu_{3.10}Fe_{0.22}V_{0.22}Ge_{0.38}As_{0.26}S_{3.82}$. The names are unnecessary ones for varieties.

Unnamed V_2O_5

L. F. BORISENKO, E. K. SERAFIMOVA, M. E. KAZAKOVA, AND N. G. SHUMYATSKAYA (1970) First find of crystalline V_2O_5 in the products of volcanic eruption in Kamchatka. *Dokl. Akad. Nauk SSSR* **193,** 683–686 [in Russian].

The walls of a fissure in the "new" cupola of Bezymyanni Volcano, Kamchatka, contain finely fibrous crystalline V_2O_5, deposited by fumarolic gases, largely H_2O and CO_2, but with HCl, HF, and SO_3. Analysis of impure material by M.E.K. on 32 mg. gave V_2O_5, 39, Na_2O 3.9, loss on ignition 12.5, insol. (SiO_2 24, Fe_2O_3 3.3, CaO 7, Mg,Al present) 42%, total 97.4%. Dissolved by dilute HCl or HNO_3.

X-ray powder data (N.G.S.) are given (13 lines); the strongest lines are: 4.339 (100) (001), 4.067 (28)(101), 3.411 (28)(110), 2.883 (50)(400), 2.176 (24)(002). These are indexed on an orthorhombic unit cell with a 4.35, b 11.53, c 3.57 Å, close to those for synthetic V_2O_5. Single crystal data could not be obtained.

Individual needles of the mineral are up to 1.5 mm. long, less than 0.1 mm. thick. Color yellowish-green, luster vitreous. ρ. 3.2 (suspension). n 2.42. Easily split parallel to elongation; brittle.

Crystalline V_2O_5 was reported without details from Izalco Volcano, El Salvador, by Stoiber and Dürr, *Econ. Geol.* **58,** 1186 (1963).

Takanelite

MATSUO NAMBU AND KATSUTOSHI TANIDA (1971) The new mineral takanelite. *J. Jap. Assoc. Mineral., Petrology, Econ. Geol.* **65,** 1–15 (Japanese with English summary).

Analysis gave MnO_2 70.39, MnO 13.06, MgO 0.22, CaO 2.66, BaO none, Na_2O 0.05, K_2O 0.05, Al_2O_3 1.70, Fe_2O_3 1.34, TiO_2 trace, SiO_2 3.61, H_2O^+ 4.92, H_2O^- 2.22, sum 100.22%, corresponding after deducting a little goethite, halloysite, and quartz to the formula $(Mn^{2+}_{0.89}Ca_{0.23}Mg_{0.03})Mn^{4+}_{3.94}O_{9.00}$. $1.3H_2O$; this is the manganous manganese analogue of rancieite. Electron microprobe analyses of 5 grains showed the absence of Si, Fe, and Al.

DTA and TGA was given. Large endothermal breaks were found at about 270° and 1000°, small ones at 120° and 600°. The mineral lost 2.22% H_2O at 100° and 4.3% additional up to 200°.

The X-ray powder pattern very similar to that of rancieite, shows strongest lines 7.57 (100)$(10\bar{1}0)$, 4.43 (18b)(0002, $11\bar{2}0$), 3.765 (25)$(20\bar{2}0)$, 2.462 (15)$(1\bar{1}23)$, 2.349 (20)

(20$\bar{2}$3), 1.420 (17)(50$\bar{5}$2, 42$\bar{6}$0, 1$\bar{1}$26), indexed on a hexagonal cell with a 8.68, c 9.00 Å, $Z=3$.

Color steel gray to black, luster submetallic to dull, streak brownish-black, ρ. 3.41 (measured on impure material), 3.78 calc. Cleavage not observed. Vickers hardness (100 g. load) 480 kg/sq. mm., av. In reflected light yellowish-gray, reflection pleochroism weak, yellowish-white to yellowish light gray; anisotropy moderate with polarization color yellowish gray to light brownish-gray. Etch reactions: concd. HCl, concd. HNO_3, and concd. H_2SO_4 tarnish slightly grayish brown; $H_2SO_4+H_2O_2$ (20%) and satd. $SnCl_2$ solution quickly stain black.

The mineral occurs in irregularly shaped nodules 1–15 cm. across, composed of microscopic intergrowths with braunite, halloysite, goethite, and quartz, in the oxidation zone of the braunite-rhodochrosite-caryopilite bedded deposit at the Nomura Mine, Ehime Prefecture, Japan, in low-grade metamorphosed Permian cherts.

The name is for Katsutoshi Takane (1899–1945), formerly Professor of Mineralogy, Tohoku University, Sendai, Japan. Type material is preserved at Tohoku University. The mineral and name were approved before publication by the Commission on New Minerals and Mineral Names, IMA.

Unnamed tin-germanium minerals

B. H. Geier and J. Ottemann (1970) New secondary tin-germanium and primary tungsten—(molybdenum, vanadium-) germanium minerals from the Tsumeb ore-deposit. *Neues Jahrb. Mineral. Abhandl.* **114,** 89–107.

These minerals occur with "Feuermineral", "Lu" (*Amer. Mineral.* **55,** 1812), tennantite, and chalcocite, evidently oxidation products of the primary germanium-bearing sulfides.

Mineral A, "zinc-stottite" (=zincian stottite)

Microprobe analysis gave Fe 13.4, Zn 12.6, Co 0.9, Ni 0.2, Ge 30.1, O (calc) 20.5, H_2O (diff) 22.3%. X-ray powder data are given; the strongest lines are 3.750 (10)(002), 2.643 (6)(202), 1.875 (3)(400), 1.677 (6)(402), 1.529 (4)(422), corresponding to a unit cell with a 7.512, c 7.438 Å. This is therefore a zincian stottite.

Mineral B

Microprobe analysis gave Mn 23.2, Fe 1.2, Sn 2.7, Ge 31.4, O (calc) 21.7, H_2O (diff) 19.8%, corresponding to $(Mn,Fe)(Ge,Sn)(OH)_6$, the Ge analogue of Wickmanite. X-ray data could not be obtained. Reflectance low, birefringence, anisotropy, and internal reflection not observed.

Mineral C (=germanian wickmanite)

Microprobe analyses gave Mn 21.5, Fe 3.5, Sn 39.6, Ge 4.0, O (calc) 19.7, H_2O (diff) 11.6%, corresponding to $(Mn,Fe)(Sn,Ge)(OH)_6$. X-ray data could not be obtained. Hardness similar to that of tennantite. Isotropic. Dark to brown-gray.

Mineral D

Microprobe analysis gave Fe 14.2, Mn 3.5, Sn 43.4, Ge 1.0, O (calc) 17.2, H_2O (diff) 20.8%, corresponding to $(Fe,Mn)(Sn,Ge)(OH)_6$, the tin analogue of Stottite. X-ray data could not be obtained. Dark violet. Hard.

An analysis is also given of a mineral, approximately $FeO\cdot 6SnO_2\cdot 6H_2O$, close to Varlamoffite (Hydrocassiterite).

Discussion—Material close to Mineral D has also been described by Grubb and Hannaford, *Miner. Deposita* **2,** 148–171 (1966).

Unnamed bismuth arsenate

DORA BEDLIVY, EDUARDO JORGE LLAMBIAS, AND JULIAN ASTARLOA (1969) Bismuth arsenates from San Francisco de Los Andes and Cerro Negro de la Aguadita, *San Juan Actas Jornadas Geol. Argentinas, 4th*, **1**, 67–73 (in Spanish).

Pseudomorphs after bismuthinite in the oxidation zones of these two Bi-Cu-As deposits were shown by X-ray study to contain rooseveltite, mixite, and an unidentified bismuth arsenate. Its X-ray pattern (13 lines) has strongest lines 4.81 (38), 4.30 (20), 3.32 (50), 3.15 (100), 3.02 (22), 2.96 (68), 2.70 (38), 2.49 (20). Electron probe analysis by B. Evans (Berkeley) showed it to contain more Bi and less As than rooseveltite.