THE PROBABLE NON-EXISTENCE OF ALASKAITE

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Alaskaite of Koenig (*Am. Phil. Soc.*, **19**, 472, 881) is an ill-defined sulphide of Pb, Ag, and Cu, which was classed as a silver-bearing variety of galenobismutite in Dana (1892) but was revived as a distinct species with the uncertain composition $PbS \cdot (Ag,Cu)_2S \cdot 2Bi_2S_3$ in Dana (1944). The mineral is described as massive, compact or foliated, with cleavage in one (or two) directions; brittle; H = 2 (or $3\frac{1}{2}$); G = 6.8 (or 6.2); metallic, gray (with bronzy tarnish?); white in polished section, distinctly anisotropic. Further details are given in Dana (1944). To test the individuality of this substance the following five specimens, including three from the type locality, were examined with the aid of polished sections; the identities of all the minerals noted below were confirmed by *x*-ray powder photographs.

1. Alaskaite, Alaska vein, Poughkeepsie Gulch, San Juan Co., Colorado (UT E2942).
2. Alaskaite, Poughkeepsie Gulch, San Juan Co., Colorado (R. E. MacKay, No. 387).
3. Alaskaite, Alaska Mine, Silverton, Colorado (HMM 80239).
4. Alaskaite, 75 km SSW. of Esmoraca, Bolivia (HMM, Ahlfeld).
5. Alaskaite, Cerro Bonete, Bolivia (ROM M21003).

Materials 1 and 5 were kindly loaned by Dr. V. B. Meen of the Royal Ontario Museum; 3, 4, from the Harvard Mineralogical Museum, were obtained from Dr. Frondel through the courtesy of Dr. M. A. Peacock; Mr. R. E. MacKay of Seattle kindly supplied no. 2.

Material 1 is a small hand specimen showing pyrite and a gray metallic mineral embedded in a gangue of dark quartz and pink feldspar. A polished section shows large areas of a grayish-white anisotropic mineral (matildite) intergrown in part with a creamy-white strongly anisotropic mineral (aikinite). These areas are traversed by small stringers of sphalerite and chalcopyrite. Subhedral crystals of pyrite corroded by chalcopyrite occur free from the intergrowth.

Material 2 is a single specimen, 4×3 in., of massive dark quartz coated with limonite and containing appreciable sulphides. A broken surface shows masses of a gray-black lustrous mineral and disseminated pyrite. An *x*-ray powder photograph of the dark mineral proved it to be a mixture of tetrahedrite and galena. Several polished sections were made which showed the above minerals in intimate association together with an occasional lath of a white anisotropic mineral which gave an *x*-ray powder pattern identical with that of aikinite from the type locality.

Material 3 is a piece of white vuggy quartz, $1 \times \frac{1}{2}$ in., with disseminated

patches and streaks of a mineral resembling tetrahedrite, and minor amounts of chalcopyrite. A polished section shows large irregular areas of tetrahedrite with inclusions of chalcopyrite. Larger areas of chalcopyrite contain corroded crystals of pyrite. Tetrahedrite appears to be contemporaneous with chalcopyrite.

In polished section, the Ahlfeld specimen, material 4, shows abundant coarse laths of bismuthinite, contacting and intergrown with bent, twisted, and shredded laths of franckeite. Sphalerite, with small lath-like inclusions of a weakly anisotropic tan coloured mineral, possibly stannite, and finely disseminated chalcopyrite are accessory. Apparently this specimen is not typical of the Bolivian occurrence.

The specimen from Cerro Bonete, Bolivia, material 5, is a compact mass of silvery-gray ore, $2\times1\times1$ in., lacking visible cleavage and coated with a partial film of limonite. Polished sections show a homogeneous white mineral with distinct twinning, weak pleochroism in cream to gray, and strong anisotropism in yellowing-white, blue, green, and brown. The microscopic properties and an *x*-ray powder photograph of this material are identical with those of benjaminite from the type locality, Round Mountain, Nye County, Nevada.

These observations suggest that previous workers were dealing with non-homogeneous material which consisted of such minerals as matildite, aikinite, benajminite, tetrahedrite, with chalcopyrite, sphalerite, pyrite, and galena. An intergrowth of matildite ($Ag_2S \cdot Bi_2S_3$) and aikinite ($2PbS \cdot Cu_2S \cdot Bi_2S_3$) roughly accounts for the composition and physical properties of the original material from Colorado, while the properties of benjaminite $Pb(Cu,Ag)Bi_2S_4$(?), which gives a distinctive *x*-ray powder pattern, agree reasonably with those of the reported alaskaite from Bolivia. Unless others can support the individuality of typical alaskaite from Colorado by microscopic and *x*-ray observations, the above notes must lead to the disqualification of this supposed species.

HYDROCARBON WITH CINNABAR IN BRITISH COLUMBIA

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Hydrocarbons, although occurring as minor constituents in many mercury deposits in various parts of the world (Halse, *Imp. Inst.*, Monog. Min. Res., 40–90, 1923; Ross, *Econ. Geol.*, **37,** 453, 1942), have been recorded from only one deposit in British Columbia (Cairnes, *Geol. Surv. Canada,* pap. **43–15,** 37, 1943) and have not been described. This note describes an occurrence of hydrocarbon with cinnabar ob-