NOTES AND NEWS

AN UNUSUAL OCCURRENCE OF ASBESTOS

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Asbestos associated with copper-bearing pyrite, galena, sphalerite, calcite, feldspar, quartz, and pyroxene was found in a banded fissure-vein deposit in the Snowy Range mine at Camp Albion, Boulder County, Colorado. The asbestos occurs in fibrous, sheet-like masses and in small, irregular aggregates with the minerals enumerated. The sheets are generally found in the middle of the vein and parallel to the banded structure. The irregular masses occur between the grains of the other minerals in the vein.

The banded appearance of the vein is due to successive depositions of pyroxene, sulphides, and asbestos in passing from the walls of the vein to the middle. Quartz has been deposited in only a few places and where present it occupies the middle of the vein instead of the asbestos. The vein varies from an inch to about a foot in width and occupies a fault zone in a coarse-grained monzonite. The vein is probably genetically associated with the monzonite.

The asbestos is light gray in color with a fusibility of three and colors the flame a brilliant yellow, due to its high sodium content. Some of the fibers are two inches in length. The extreme fineness of the fibers made its optical study difficult. The following data were obtained by using the immersion method. The highest extinction angle, measured from the long direction of the fibers to the x vibration direction, is about 39°. The mean index of refraction is about 1.630.

The asbestos was also examined in thin section. The section was ground at right angles to the long direction of the fibers. This permitted the examination of the cleavage. The cross-sections of the very fine fibers, when examined with a high power objective, showed in the majority of cases flatly oval shapes. A few angular cross-sections appeared to have the characteristic amphibole cleavage.

An analysis of the asbestos gave the following composition:

ANALYSIS OF ASBESTOS

	Per cent	*Molecular Ratios*
SiO_2	56.48	0.952
Al_2O_3	1.22	0.012
Fe_2O_3	8.38	0.053
FeO	2.67	0.037
CaO	2.70	0.048
MgO	17.40	0.437
Na_2O	8.09	0.132
K_2O	1.82	0.019
H_2O (above 110°)	0.87	
TiO_2	0.30	
	99.93	

The formula of the asbestos calculated from the analysis is approximately: $3(Na, K)_2O \cdot CaO \cdot 10(Mg, Fe)O \cdot (Fe, Al)_2O_3 \cdot 20SiO_2$.

From the above data the asbestos is believed to be an alkali amphibole. In the analysis all the results were checked by parallel analyses except the determinations for the alkalies. Some difficulty was experienced in obtaining a proper fusion and extraction. The results of the best fusion are given.

The asbestos appears to have been deposited from solution. A careful examination of several specimens indicates that it is not an alteration product from any of the vein minerals. The common occurrence of the asbestos in the middle of the vein precludes the possibility of its being an alteration product from minerals in the wall rock. The occurrence of the asbestos in distinct sheets and sharply defined masses supports the idea of deposition from solution. The pyroxene was examined both in hand specimen and thin section for any gradation or alteration to the asbestos. Small patches of asbestos were found filling cavities between pyroxene grains, but the contact between the asbestos and pyroxene is sharp.

The other minerals occurring in the vein with the asbestos show several interesting features. The galena has both octahedral and cubical cleavages. The octahedral cleavage is much better developed than the cubical. The feldspar is a light gray soda-bearing orthoclase. It is biaxial positive. The maximum extinction angle measured from the trace of the basal cleavage is eight degrees.

The associated pyroxene, as determined from chemical and optical tests, is diopsidic aegirite and has the following optical properties: high relief; biaxial positive in character; X makes an angle of 17 degrees with *c* axis in the acute angle beta; pleochroism, X = green, Z = yellowish green. The pyroxene as it occurs in the vein varies in color from medium gray to dull greenish gray. It had good cleavage and has a splintery fracture.

The pyrite, calcite, and quartz show no unusual features. The pyrite is massive, as is the quartz. The calcite occurs as separate masses or intimately mixed with the asbestos.

MOTTRAMITE OR PSITTACINITE—A QUESTION OF NOMENCLATURE[1]

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In the recent paper on psittacinite from Arizona,[2] I considered psittacinite the proper name for this mineral. Bannister, in his more recent paper on this mineral[3] did not accept my conclusion and stated that mottramite was more suitable. This disagreement led to correspondence with Bannister which has finally settled the question of priority.

I wrote him, in part, as follows:

> I have been trying to check your conclusions regarding the nomenclature of mottramite and psittacinite, as expressed in your recent paper on The identity of mottramite and psittacinite with cupriferous decloizite. On page 385, you state: "Mottramite is the most suitable choice on all grounds. The use of the name psittacinite should be discontinued." So far as I can interpret the situation, it seems that psittacinite should be the name chosen.
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> It all depends on the question of priority. I was in error in stating on page 578 of our paper on Psittacinite from the Higgins mine, Bisbee, Arizona, that psittacinite was described by Genth in 1874. It should have been given as 1876, as you correctly do under VII on page 377 of your paper. The reference given on page 791 of Dana's *System of Mineralogy* is misleading.
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> "However, it seems to me that Genth's name still has priority. The question of priority, I think we will all agree, depends on the date of issuance of publication and not on the date of orally reading a paper. Genth's paper in the *American Journal of Science* was issued, as all numbers of that Journal are, on the first of the month, that is July 1, 1876. Our library copy of the Proceedings of the Royal Society (London), Vol. 25, has printed on the bottom of the title page, MDCCCLXXVII, that is, 1877. Both your footnote No. 1 on page 376, and Dana's reference to mottramite, give 1876. Moreover, as volume 25 of the Royal Society takes in part of 1877, it could not have been printed in 1876. Even if the complete volume (No. 25) were issued in parts, Roscoe did not read or present his paper until the meeting of June 15, 1876, and in order to have priority, the report of that meeting must have been printed and issued in less than two weeks, that is between June 15 and June 30. If I am in error on this subject, I hope you will correct me.

[1] Published by permission of the Director, U. S. Geological Survey.

[2] Taber, Stephen, and Schaller, W. T., Psittacinite from the Higgins mine, Bisbee, Arizona: *Am. Mineral.* Vol., **15,** pp. 575–579, 1930.

[3] Bannister, F. A., The identity of mottramite and psittacinite with cupriferous descloizite: *Mineralog. Mag.*, Vol. **23,** pp. 376–386, 1933.