THE AMERICAN MINERALOGIST

VOL. 3 FEBRUARY, 1918 No. 2

A PECULIAR FIBROUS FORM OF OPAL[1]

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THE material described below was received at the National Museum from Mr. G. U. Snapp of Metolius, Oregon, who stated in the letter accompanying it that "in making a cut thru a gray rock in road work, we found what appeared like a petrifaction of wood. . . . Around the glassy center of the supposed petrifaction is the woody fiber." Samples of the latter he enclosed under the impression that they might be asbestus, which indeed they somewhat resemble.

The gray rock mentioned proves to be a mixture of opal and chalcedony, but resembles some of the more highly colored pitchstones, for which it was at first mistaken. Imbedded within it are bunches of a light gray fibrous material, which abuts as sharply against the massive portions as do the fibrous veins of Canadian chrysotile against the massive serpentine. Indeed, the resemblance to some of the occurrences of the well-known serpentine asbestus is striking, the fibers being in some cases 50 mm. in length. Between the fingers the material has, however, a slightly harsh feeling, is brittle, and breaks down into loose, fluffy, pellet-like forms resembling nothing more closely than the "slag"- or "mineral-wool" formed by driving steam thru a molten slag and used in fireproof packing. Under the microscope the massive material, as noted above, is seen to be a mixture of chalcedonic and opalescent silica in forms sufficiently well-known and characteristic of deposits from solution to need no description. The asbestiform material shows long wavy or slightly undulating colorless and isotropic fibers tapering gradually to a not very acute point, breaking easily and abruptly into short sections; in some cases these are quite structureless,

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or again possess an interior, indistinct granulation, or rows of blunt saw-tooth-like processes along their margins. Other and larger fibers, some 0.1 mm. in diameter, equally isotropic, show faint interior spiral marking and have at times the appearance of a small fiber wound spirally around a larger one. These I am told by Dr. F. H. Knowlton are unmistakably of vegetable origin.

A rough analysis of the fibers, without assorting, yielded me: Ignition 5.62 per cent.; $Al_2O_3 + Fe_2O_3$ 4.72 per cent.; SiO_2 89.56 per cent., the silica being determined by evaporation in hydrofluoric and sulfuric acids, the iron oxide and alumina forming the residue.

THE PROBABLE IDENTITY OF MAZAPILITE WITH ARSENIOSIDERITE[1]

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A MICROSCOPIC examination of mazapilite and of arseniosiderite, both of typical material and from the original localities, shows that the two minerals are very similar, altho the published chemical analyses indicate a greater difference than would be expected from good analyses of pure material. It is probable that the analysis of mazapilite is more accurate, since it is more recent and was made on good crystalline material; a little admixed hematite in the arseniosiderite from Romanché would account for the difference in the two analyses.

The properties of the two are summarized in table 1. Only a single small crystal of mazapilite was available and the material examined was scraped from one edge, as deep as a quarter of the way to the center of the crystal. It was sensibly homogeneous, but some fragments indicated a crystalline aggregate rather than a single crystal and it is possible that they represent a pseudomorph of arseniosiderite after a crystal of a preëxisting mineral. Altho both specimens appear to be sensibly uniaxial, the mineral is probably biaxial with a very small axial angle since that from Mazapila is in good orthorhombic crystals, and that from Romanché has the optic axis normal to the fibers.

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