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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TABLE 1. COMPARISON OF ARSENIOSIDERITE AND MAZAPILITE

	ARSENIOSIDERITE	MAZAPILITE
Locality	Romanché, France (U. S. Nat Mus. 84358)	Jesus Maria Mine, Mazapila, Mexico (U. S. Nat. Mus. 85174)
Composition	$6CaO.4Fe_2O_3.3As_2O_5.9H_2O$(?)	$6CaO.4Fe_2O_3.4As_2O_5.12H_2O$
Color	Yellowish brown	Black. On fracture deep brownish red
Streak	Yellow brown, rather deeper than yellow ocher	Ocher yellow
Hardness	1 to 2 (?)	4.5
Sp. gr.	3.520	3.567–3.582
Habit	Fibrous	Prismatic crystals
Optical character	Uniaxial (?), —	Uniaxial (?), —
α	1.792 ± .005	1.815 ± .005
β	1.870 ± .005	1.898 ± .005
γ	1.870 ± .005	1.898 ± .005
Optical orientation	X normal to fibers and to a face or cleavage	
Pleochroism	X = very pale brownish red, nearly colorless Y and Z = brownish red	X = nearly colorless, very pale brownish Y and Z = dark reddish brown

The tabulated data show some differences between the two specimens, but these are more apparent than real. As regards color and hardness, it is commonly true, and to be expected, that a finely fibrous variety of a mineral has a color nearer that of its streak, and apparently a lower hardness. The streaks are essentially alike for both minerals, and this is more uniform in minerals than the color. Specific gravity is one of the important constants of minerals, but accurate measurements are so difficult and depend so much on inclusions of gas or other material that measurements on the same mineral in different states of aggregation commonly vary much more than do the two specimens here described. The indices of refraction, while not identical, agree as closely as is common for measurements on different specimens of the same species; a small difference in chemical composition would account for the difference in indices, especially for a mineral with high indices of refraction and most minerals are not by any means simple chemical compounds, as is NaCl, the formulas assigned to them being only approximations and moderate variations in composition being frequent. The essential properties of these two specimens are on the whole so similar as to leave no doubt in the author's mind as to their identity. The name arseniosiderite has priority, and should be retained for the species.