

MINERALOGIE DE BELGIQUE MINERALOGIE VAN BELGIE

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ELYITE - $Pb_4Cu(SO_4)(OH)_8$

OCCURRENCE.

This rare mineral is recently found at Plombières, approximately 1 km south-east of the church. It occurs, at the surface, in small fissures and in voids of scrap material from the metallurgical industry after the melting of Pb- and Zn-ores. The block containing elyite was not collected on the refuse heap itself making impossible any precision on the depth of formation of the mineral. Elyite is a species new for Belgium.

CHARACTERISTICS.

Violet elongated crystals, with silky luster, cover the brownish refractory material. Locally radiating aggregates are observed. The scanning electron microscope shows that the acicular crystallizations are composed of several single crystals with prismatic habit, strongly resembling elyite from Nevada (WILLIAMS, 1972). The length of the single crystals reaches 400 μm and their thickness never exceeds 10 μm . Identification is based on X-ray diffraction using a Gandolfi camera. The powder pattern is similar to that given by WILLIAMS (JCPDS-file, n° 25-293). Electron microscopic examination, using a wavelength dispersive X-ray detector, qualitatively confirmed the presence of Pb, Cu and S, no other elements being detected.

PARAGENESIS.

The brown scrap material, on which elyite occurs as a thin crystalline cover, contains galenite and spharelite according to XRD, while qualitative X-ray fluorescence spectrometry, using LiF (200) and gypsum crystals, showed strong lines of Pb, Cu, Zn, Fe and S and smaller peaks of Ni, Mn and As. Elyite occurs in association with other secondary sulphates from which linarite is already observed (VAN TASSEL, 1979). It apparently results from meteoric weathering of the sulphides in the scrap material producing sulphate-rich solutions.

REFERENCES.

- VAN TASSEL, R. (1979) - *Bull. Belg. Ver. Geol.*, 88, 273-279.
WILLIAMS, S. A. (1972) - *Amer. Mineral.*, 57, 364-367.

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