

On the composition of some sarkinites

THE occurrence of very fine sarkinite crystals in the Sterling Hill Mine, Ogdensburg, Sussex County, New Jersey, prompted an analysis of their chemical composition. The crystals occur along fracture seams and slickensides in willemite-franklinite ore in a number of varied parageneses, which include baryte, manganese oxides, and kraisslite (Moore and Ito, 1978).

The study of the Sterling Hill sarkinite afforded an opportunity to re-analyse some of the yellow to orange sarkinites found in Sweden. Xantharsenite (Igelström, 1884), polyarsenite (Sjögren, 1885), and chondarsenite (Igelström, 1865) all occur as seams and irregular segregations at the Sjo Mine, Grythytte Parish, Sweden, and at the Harstig mine, near Pajsberg, Sweden. Type material for xantharsenite was unavailable, but samples nos. 143555 and 143556 are from Igelström's mineral collection and likely represent what he considered to be xantharsenite. The other samples have no claim to type status and are included here simply to provide additional data. The polyarsenite sample (R10794) is from the Sjo mine and not from the type locality in Pajsberg.

The samples were analysed using an ARL-SEM-Q electron microprobe utilizing an operating voltage of 15 kV and a beam current of 0.15 μ A.

The standards used were: synthetic olivenite for As; manganite for Mn; and hornblende for Fe, Mg, and Ca. The data were corrected using a modified version of the MAGIC-4 computer program. The resultant analyses are presented in Table I.

X-ray powder patterns of all the samples studied herein are in good agreement with the data for sarkinite published by Welin (1968). There are no discernible differences among the powder patterns.

The analytical data clearly show that all of the samples have very similar compositions and, together with the X-ray powder patterns, demonstrate that they are all sarkinite. It should be noted that none of the specimens examined herein are type material, and that the term 'xantharsenite' should stand until type material is found.

REFERENCES

- Igelström (J. L.), 1865. *Ovfers. Vet. Handl. Stockholm*, **22**, 3.
 — 1885. *Ovfers. Vet. Handl. Stockholm*, **42**, 257.
 Moore (P. B.) and Ito (J.), *Am. Mineral.* **63**, 938-40.
 Sjögren (A.), 1885. *Geol. Fören. Förh.* **7**, 724.
 Welin (E.), 1968. *Arkiv Mineral. Geol.* **4**, 499.

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TABLE I.

	143555	143556	R5394	R10794	B13704	143581	Theory
FeO	0.3	0.3	0.3	0.2	0.3	tr.	
MgO	1.2	1.3	0.3	2.3	1.0	0.1	
CaO	1.1	1.2	0.6	0.9	0.6	0.3	
MnO	50.7	50.0	50.9	48.8	50.1	52.5	53.38
As ₂ O ₅	42.5	42.3	43.1	42.3	42.8	41.9	43.23
H ₂ O*	3.4	3.4	3.4	3.4	3.4	3.4	3.39
Total	99.2	98.5	98.6	97.9	98.2	100.1†	100.00

143555 (Xantharsenite)—Sjo mine, Grythytte Parish, Örebro, Sweden.

143556 (Xantharsenite)—Sjo mine, Grythytte Parish, Örebro, Sweden.

R5394 (Xantharsenite)—Sjo mine, Grythytte Parish, Örebro, Sweden.

R10794 (Polyarsenite)—Sjo mine, Grythytte Parish, Örebro, Sweden.

B13704 Sarkinite—Harstig mine, near Pajsberg, Sweden.

143581 Sarkinite—Sterling Hill, Ogdensburg, Sussex Co., New Jersey.

Theory—For Mn₂(AsO₄)(OH).

Accuracy of data: $\pm 3\%$ of the amount present.

* Water from the theoretical composition.

† Includes 1.9% ZnO.

Specimen numbers are from the National Museum of Natural History, Smithsonian Institution, Washington, DC 20560.