

OCCURRENCE OF EVANSITE IN TASMANIA.

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THE Sydney Technological Museum having come into possession of a small collection of minerals from the mines of Zeehan and district, in Tasmania, I found when investigating them for the purpose of classification, that this specimen gave different reactions than those expected. It came from the Mount Zeehan Company's Mine, and was stated to be known locally as "soda crystals."

The small globular excrescences covering the surface, somewhat botryoidal in appearance, are entirely amorphous and without a trace of crystallization, colourless, and these have a vitreous lustre resembling glass, or milky-white and slightly opalescent, often translucent, very brittle, streak white, hardness near 4, specific gravity 1.842 at 60° F.

Heated in a closed tube it decrepitates and gives off much water which has an alkaline reaction. When heated with nitrate of cobalt solution, gives an intense blue colour. Heated before the blowpipe, gives a greenish flame. Soluble in sulphuric, nitric, and hydrochloric acids. These properties only differ slightly in some respects from the original Evansite from Zsetcznik, Hungary; examined and described by David Forbes, F.R.S.*

The specific gravity of the Tasmanian specimen is a little lower than the original, given as 1.939, although two of Mr. Forbes' determinations gave 1.872 and 1.822. The water given off in the present specimen is alkaline, while that of the original specimen was neutral.

In all the determinations and analysis only the perfectly glassy beads were taken. No fluorine, silica, or iron were detected in these. The mineral is a basic aluminium phosphate.

* Phil. Mag., IV., XXVIII., p. 341, 1864.

The phosphoric acid determined by molybdate of ammonia gave 17.996 per cent. By citric acid and precipitating with sulphate of magnesia 18.232 per cent., mean 18.114 per cent. The amount of water present was 41.266 per cent., the greatest precaution being taken to prevent loss by decrepitation. The loss equalled .434 per cent., this may be considered principally as alkalis; all attempts to detect ammonia, as indicated by the alkaline water, failed. On evaporating the filtrate from which the phosphoric acid and the alumina had been removed, the minute quantity left gave a strong sodium flame. The white opaque cellular portions of the specimen are very siliceous. The rock appears to be a slaty one, and a few particles of galena are present.

The formula $\text{Al}_3\text{P}_2\text{O}_{14} + 18\text{H}_2\text{O}$ gives

Theoretically :—Alumina		... 39.8%,	Found:—40.186%.
„	Phosphoric acid	18.35%,	„ 18.114%.
„	Water...	... 41.85%,	„ 41.266%.
		—————	loss .434%.
		100.00	—————
		—————	100.000
			—————

Since the above paper was read, my attention has been directed to a "Catalogue of the Minerals of Tasmania" by Mr. W. F. Petterd, published during the present year. On page 27, under Evansite from Zeehan is the following :—"A rare species, occurring as botryoidal incrustations which are often almost colourless but sometimes milky-white, at all times having an attractive pearly lustre. It appears to differ from the typical form in having a proportion of silica chemically combined. The examples were obtained in a silver-lead lode, with galena and sphalerite."

From a courteous communication since received from Mr. Petterd, it appears that the above is all the information published in regard to the Tasmanian mineral, so that my analysis and observations will prove acceptable.



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