

Note on the occurrence of Strüverite in Perak.

By J. B. SCRIVENOR, M.A., F.G.S.

Geologist to the Federated Malay States Government.

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IN a recent number of the *Mineralogical Magazine* an analysis of strüverite found in Perak was published.¹ This mineral was submitted to me by Mr. R. L. Corbett for examination in August, 1909, and as I failed to detect its relation to the Piedmont strüverite described shortly before,² the material was forwarded to the Imperial Institute in accordance with an arrangement between the Institute and the Federated Malay States Government. While waiting for the results of the analysis, the locality from which the mineral came was traced and some prospecting work carried out to ascertain the amount of material available. This work afforded information that is of interest concerning the origin of the mineral.

The locality, as already described,³ is in the narrow valley of the river Sebantun, near Salak North. This stream flows over granite in the higher part of its course, but before the alluvium with strüverite is reached there is evidence that the granite margin has been passed and that the stream flows over hardened black shales. The old mining lot, now cancelled, wherein the strüverite occurs, could not be worked for tin-ore on account of the difficulty of separating the strüverite. Upstream, however, mining for tin-ore has been carried on extensively. This, coupled with the fact that no strüverite was found over the granite or immediately beyond the granite margin, points to a source close to or in the old mining lot. The ground was prospected by means of pits and a small opencast mine in the shallow alluvium. Below part of the alluvium a mass of kaolin was found that agreed in constitution

¹ T. Crook and S. J. Johnstone, 'On strüverite from the Federated Malay States.' *Mineralogical Magazine*, 1912, vol. xvi, pp. 224-231.

² G. T. Prior and F. Zambonini, 'On strüverite. . . .' *Mineralogical Magazine*, 1908, vol. xv, p. 78.

³ *Loc. cit.*, p. 224.

with certain veins of kaolin known to be connected with granite and to cut older beds, in Kinta, not very far away. A large quantity of this kaolin was washed and yielded a few pieces of strüverite.

Although, therefore, the covering of alluvium makes it impossible to speak with certainty, the evidence obtained points to the strüverite occurring as an original mineral in a vein of kaolin intrusive into hardened black shales, and to its having been concentrated in the alluvium by the river Sebantun. The relation of the Kinta kaolin veins to the granite and the occurrence of kaolin under the alluvium of the river Sebantun not very far from the granite margin suggests that, as in the cases of the Piedmont and South Dakota¹ strüverite, the mineral came from an acid magma.

¹ Amer. Journ. Sci., 1911, ser. 4, vol. xxxi, p. 432.
