MINERALOGICAL MAGAZINE, DECEMBER 1985, VOL. 49, PP. 762

Strontianite from the northern Pennine orefield

STRONTIANITE has been reported from two localities in the northern Pennines; Settlingstones Mine, near Hexham (Trestrail, 1931) and Greenlaws Mine, Daddry Shield, Weardale (Wray in Sherlock and Hollingworth, 1938). Recent studies cast considerable doubt on its authenticity from the latter locality and confirm its presence at the former. A further occurrence of the mineral, at Stonecroft Mine, near Hexham, is recorded here.

Trestrail (1931, p. 61) noted strontianite as a minor constituent of the witherite vein at Settlingstones Mine, near Hexham [NY 843 683]. From that date until the mine's closure in 1969 specimens of yellow or pale green radiating fibrous strontianite continued to be obtained and are well known in several museum collections.

The reported occurrence at Greenlaws Mine, Daddry Shield, Weardale [NY 890 370] has proved rather more enigmatic. Wray in Sherlock and Hollingworth (1938, pp. 88–9) noted that the dump from the Low Greenlaws Level contained strontianite which was '... white, waxy and concretionary, and is fairly pure but contains some calcite ...'. The occurrence is quoted in at least one elementary mineralogical textbook (Read, 1948, p. 273), though this misquotes Wray by stating that at Greenlaws there occurs '... a vein of stontianite, 4 feet [1.2 m] wide ...'. Wray actually states that the Greenlaws vein is about 4 feet [1.2 m] wide with strontianite as one constituent. In view of the characteristic association of strontianite with baryte and calcite in other British hydrothermal deposits, e.g. Strontian, the North Yorkshire Pennines and Settlingstones, the occurrence here near the centre of the relatively higher temperature fluorite zone of the Northern Pennine field (Dunham, 1948) seems unusual. Despite a careful search the writer has been unable to find any trace of the mineral on any of the Greenlaws dumps and only one specimen labelled as being from this locality has been traced. This specimen is in the Geological Museum Collection (Registration number MI 16362) and apart from carrying a label stating it to be strontianite from Greenlaws Mine, Weardale, and its date of registration in the collection as 1924, it bears no other details. The collector is unknown though it could well be the material referred to by Wray. The specimen consists of a white columnar crystalline mineral with faint pale brown banding at right angles to the crystals. X-ray diffraction examination shows it to be calcite. The morphology suggests calcite inverted from aragonite, a form which is common in parts of the Northern Pennines. Thus the only known specimen labelled as strontianite from Greenlaws Mine has been discredited and although the occurrence of the mineral here cannot be discounted with certainty it should be viewed with some doubt.

A further occurrence of strontianite in the area has recently come to light at Stonecroft Mine [NY855 689] approximately 1 km east of Settlingstones and on the same vein system. The mineral occurs here as free-standing, slender radiating, very pale green to colourless prismatic crystals up to 15 mm long in vugs in pale buff calcite. The strontianite-bearing specimens occur on part of the dump in which witherite is particularly common. The exact provenance of the mineral in the mine is unknown.

Acknowledgements. X-ray examination of the Geological Museum specimen by Mr B. R. Young and determination of the Stonecroft Mine strontianite by Mr T. Bridges are gratefully acknowledged. This note is published by permission of the Director, British Geological Survey (NERC).

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[*Manuscript received 16 November 1984*]

KEYWORDS: strontianite, Pennine orefield.

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