

SHORT COMMUNICATIONS

The type-locality of witherite.

SOME confusion exists over the original locality from which witherite was described. Thus, Miers (1902, p. 410) states, 'The mineral discovered and analysed by Withering in 1783 was a fibrous variety from Anglezark in Lancashire'. He notes its presence in the lead mines of Alston Moor. On the other hand, Alston Moor is cited as the original locality in the 7th edition of Dana's *System* (Palache, Berman, and Frondel, 1951, p. 195). Dunham (Dunham and Dines, 1945, p. 29) cites Anglezark Moor Mine, on the east side of the Liverpool Waterworks, near Chorley, as the type-locality for witherite.

The mineral was first mentioned by Withering in 1783 in a footnote to his translation of Bergman's *Sciagraphia Regni Mineralis*, as follows: 'I have lately discovered a specimen of TERRA PONDEROSA aerata got out of a mine in this kingdom. It is very pure and in a large mass.' (Withering, 1783, p. 28.)

The following year he described the mineral in detail under the same name, stating 'This substance was got out of a lead mine at Alston Moor in Cumberland' (Withering, 1784, p. 293). This unequivocal statement is the primary source of the locality given in Dana. It was accepted by Werner, an account of whose *Mineralsystem* was given in 1789 in which the name witherite (as *Witherit*) was first published (Hoffmann, 1789, p. 379), followed (p. 394) by the remark: 'Ist die vom Herrn D. Whitering zu Alton (*sic*) Moor in der Grafschaft Cumberland, entdeckte luftsaure Schwererde' (*sic*).

The view that Withering's material derived from Anglezark is due to J. Watt, Jr., who termed it Aerated Barytes and wrote (Watt, 1790, p. 599), 'However he [Withering] was misinformed as to the place from whence his specimen came, which he supposed to be Alston Moore, where I have good authority for advancing, that none has been found. He has since informed me that he believes it came from the same mine of Anglezark, which forms the subject of the present paper.'

Watt's authority for denying the occurrence of witherite in Alston Moor was unreliable, its occurrence there being well known (Miers, 1902, p. 410; Dunham and Dines, 1945, pp. 24-26). Withering's change of mind about the provenance of his material appears to have been no more than one of belief. No final solution to the problem seems possible,

but the claims of Anglezark rest on a more shaky foundation than those of Alston Moor.

The reference to Werner in Dana's *System* reads, '*Bergm. J.*, 2, 225, 1790': it should be '2, 379, 1789'. Dunham and Dines (1945) date Watt's paper as 1789 on p. 29 and 1787 on p. 30: it is certainly of 1790, not having been read until 30 November 1789 and an 'Advertisement' to the volume states that it 'has been detained an unusual time in the press'. Recognition of the location of Anglezark and neighbouring mineral veins on the one-inch Geological Survey map (Sheet 75, Preston: Solid, 1958) is hampered by the omission of the customary gold lines. They are shown, however, on 6-in. Sheet Lancashire 78 (1869).

Dept. of Geology,
The University, Leeds.

J. SELWYN TURNER

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A simple rock-crusher.

IN order to speed the operation of crushing rock samples a standard engineer's 'Fly Press', normally employed in production work for stamping out thin metal blanks, has been adapted as a rock-crusher.

The press illustrated is a standard (British) no. 3, which may be purchased from any reputable tool merchant for less than £30, and was adapted for crushing rock samples to a coarse powder by fitting two steel plates in place of the stamping tools and a plastic washing bowl to collect the crushed material. The plates were machined from 5 in. \times 1½ in. forged blanks of tool steel (ZN32), and the crushing surfaces case hardened to maximum hardness. The specimen for crushing is placed between these surfaces, which are brought together by a swing of the