

Review: I. Nichol et al. (Institute of Geological Sciences),
1970. Regional geochemical reconnaissance of the
Derbyshire area. 37 pp and maps. HMSO. £2.10 (2.50)

by

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The survey was made over an area bounded roughly by Stockport, Longton, Allestree, and Sheffield, thus entirely covering the area of especial interest to Peak District mining historians. It is from this aspect that this review is written.

The technique used depends broadly on the assumption that a stream sediment can be considered an approximate composite sample of the rocks and soil upstream of the sampling point. Duplicate samples of sediment were taken at convenient points, usually road intersections, from each tributary, and subjected to multi-element analysis. Two principal uses were envisaged: The detection of leakage dispersions from mineral deposits, especially lead, copper, and zinc, and as a guide to molybdenum-induced copper deficiency in cattle. The main problem involved was the often intense contamination due to former mining and smelting activity, which, though easily detected, could mask a mineral deposit.

Success was limited. An agricultural problem area was delineated and blood copper deficiency was found afterwards in animals at a sub-clinical level. Because of contamination, the only definite palaeo-geochemical anomaly found was an origin-obscure metal enrichment in the Trias, and the chances of finding an economic mineral deposit are considered remote.

For the lead-mining historian the report contains a great deal of information, mainly concerning contamination resulting from former smelting (rather than mining) activity. It confirms the high density of smelting sites to the east of the limestone, though due to the lack of tributaries on the limestone itself, any conclusions as to the relative densities of boiling sites are still not possible. It confirms also the writer's opinion that practically every tributary in the area has had a smelter close by, though the number of sites likely to the south of Wirksworth and Ashbourne is somewhat of a surprise. In all the survey should save thousands of man-hours in locating sites. Four follow-up surveys of contamination anomalies (Mansell Park, Ramsley Moor, Ashover, and Stonedge,) are archeological techniques of the first order, and it is hoped that some progressive university geological departments will repeat such surveys for other anomalies.

In return, one could ask what the historian could have offered the research team. Page (7) of the report has a map showing the distribution of known smelting sites, of which forty eight are shown for lead. At about the same time as the survey was made, Mott (1967), using readily available sources, was able to list about eighty, and since then the total has soared. In hindsight, it would appear that had proper historical advice been sought, then, however regrettable in other respects, much of the economic motivation, i.e. the prospect of new mineral resources, would have disappeared, given the likely high level of contamination over much of the area. This is at least the second post war mineral exploration to be deficient in this respect. (See Greenough, p.3).

As an extremely expensive publication, the report is deficient in two other major respects. The main maps were compiled by a sophisticated automatic plotting system, requiring no less than nine colour plates for reproduction. During printing, poor superimposition of the plates has resulted in inaccuracies in location of data, making detailed examination and transference of results difficult. Where one symbol runs into another it is sometimes difficult to discern the original colour. Secondly it seems a pity that the mass of statistical data collected should not have been published, so that the student could have it available for other purposes. One is tempted to suggest that conventional monochrome maps, perhaps with a transparent overlay of basic geological and topographical data, tied in with a table of statistics, would have been as successful, and possibly cheaper.

Despite the above criticisms, the report remains of high value to Peak District mining historians, and should be a basic starting point for field work and research for years to come.

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References:

- G.B. Greenough, 1967. The Riber Mine 1950-1959. Published by Derbyshire Stone Ltd., Matlock. 11 pp.
- R.A. Mott, 1967. Lead Smelting in Derbyshire. Bul. Hist. Metal. Group, Vol.1, No.8, pp.6-11.

Sum 7257
260 Pump water wheel, B.W. engine
264 sawmill (whining)
320 Electric pump