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REPORT ON THE BRITISH SPELEOLOGICAL ASSOCIATION CONFERENCE, 1964.

by

John D. Wilcock, B.A., B.Sc., Grad. I.E.E.

The 1964 Speleological Conference arranged by the British Speleological Association took place during the weekend 5th - 7th September at the High School, Settle.

The conference got off to a slow start, as the first speaker was unfortunately delayed by fog, as were many other delegates.

Mr. M.E. Smith, of the Peak District Mines Historical Society gave a summary of his work in the Stoney Middleton area of Derbyshire, in which he has attempted to examine all the available facts and to evolve

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a hypothesis of the origin and development of the cave systems in the Eyam and Middleton Dale Region. The development of caves in the area can be divided into four main phases:-

- 1) Remnant features, e.g. Cucklet Church Cave.
- 2) The '700 ft. series', governed by a band of hard porcellanous limestone, and all of phreatic origin.
- 3) The transitional period, corresponding approximately to the time of cavern collapse, giving rise to Eyam and Cucklet Dales and Hobbit Hole, probably a former resurgence.
- 4) The Waterfall Swallet - Carleswark system. Carleswark Cavern shows phreatic features modified by vadose conditions.

The whole of the drainage pattern has been modified in modern times by mining activity, notably by Moorwood Sough.

Professor E.K. Tratman lectured on the Mendip Cave Dwellers of the Early Iron Age. There are many caves in the Mendip Hills which have been used by man during the Early Iron Age before the Roman conquest. A purely native Iron Age occupation has been shown by excavation in only three caves: Wookey Hole, Rowberrow Cavern and Read's Cavern. Many remains have been found at Wookey Hole, which have

been dated from about 200 B.C. to late Roman times. The stratum has only been partly excavated. Rowberrow Cavern was used as an iron smelting site for a limited period during the Early Iron Age. A large bloom of iron, slags and other traces of smelting were found. Finally, Read's Cavern was inhabited about 100 B.C., and much pottery was found together with bronzes and ironwork. The inhabitation was brought to a sudden end by heavy rock falls which sealed the cave until its rediscovery in 1919. The inhabitants were herdsmen.

After lunch the meeting continued with a paper giving some notes on recent fauna studies in Yorkshire Caves, by Mr. P.C.S. Schofield, of the N.C.M.R.S. The study of cave fauna in British caves has been concentrated almost entirely in the south-west of England and in South Wales. Mr. Schofield has made a particular study of White Scar Caverns, on the western flank of Ingleborough, which receive the water of thirty streams. Temperatures have only been recorded in the commercial section, and these have been remarkably constant. The artificial lighting seems to be an inhibiting factor for most species. Flooding seems to make the cave sterile, but during periods of prolonged drought there seems to be 'population explosions'. Fish are found sometimes in Yorkshire caves, e.g. trout in Upper Long Churn, Great Douk, Ingleborough Cave, etc. A punched-card classification system for all British cave fauna is to be set up by the N.C.M.R.S. and N.S.G. in collaboration with the C.R.G. and the Nature Conservancy, and with the kind assistance of Dr. Perring, Director of the Distribution Maps Scheme for the Botanical Society of the British Isles. This work has only been made possible by the [19] immense work of enquiry and liaison undertaken by Mr. Schofield, and he is to be congratulated and thanked for bringing the society's name into the forefront of the speleological world.

The second lecture of the afternoon was a description of the metalliferous mining area of Shropshire, by Mr. R.M. Haszard. Mining has been carried on in Shropshire since Roman times. Drainage of these mines has been carried out by adits and winding, and latterly by pumping engines. The larger mines had beam engines, and these were described individually by Mr. Haszard. Most mines had windlasses for the raising of the ore, and all the larger mines seem to have had compressors by 1880. Many other facets of the mining industry in Shropshire were discussed, e.g. accidents; lighting equipment; the working of ore; bad air and gases; explosives; and adits. Some possible future developments were also mentioned. Although the speakers covered a wealth of detail, all of it interesting to the mining enthusiast, they should in future pay more attention to the presentation of their work before a large audience of non-specialists.

The evening symposium on cave rescue attracted the largest audience of the day, as might have been expected. Representatives of most of the regional cave rescue organisations gave short addresses, and Mr. R.R. Glover demonstrated a working model of a communication system which he is hoping to develop for use in caves, and particularly in cave rescue operations. A short film on the conduct of a cave

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rescue in a Yorkshire cave, by members of the Upper Wharfedale Fell Rescue Association, followed. The commentary on this film, recorded by the Leeds University Recording Group, left something to be desired, but this is only a small point in criticism of a generally excellent film. The symposium was concluded with a lively discussion, which was no doubt continued during the informal meeting held afterwards in the Craven Room at the Ashfield Hotel, Settle.

The meeting was continued on Sunday with a paper by Dr. J.W. Jackson on the biological, and archaeological aspects of Victoria Cave and other caves in the Settle area. The discovery of animal remains, which imply different geographical and climatic conditions in the past, was described. The lower cave earth at Victoria Cave contained remains of a typical early Pleistocene fauna, including hippopotamus. Above this stratum were laminated glacial clays, derived from a melting ice-sheet which formerly covered the area and blocked the cave entrance. In the base of the upper cave earth were found a fine lance-point of reindeer antler, and other human artefacts of the Upper Palaeolithic. A later human occupation in the Mesolithic has contributed a bone harpoon barbed on both sides. In Roman times Victoria Cave and other local caves were much used by refugees who were compelled to take shelter in them because of the unsettled state of the country,

The second Eli Simpson Memorial Lecture consisted of a paper on the [20] solution of limestone by Dr. D.G. Mead. A number of observations on limestone waters were quoted, which show that the solubility of limestone in water depends on the origin of the water. In vadose caves, such as the example studied, Cullaun I in Co. Clare, which are fed by surface streams from non-limestone rocks, the ultimate solubility appears to be about 70 p.p.m. calcium carbonate. On the other hand, rain which falls on soils lying on limestone is able to dissolve up to 380 p.p.m. calcium carbonate. The explanation of this is that the water picks up carbon dioxide in the soil, and percolates into the joints of the limestone bedrock without losing carbon dioxide to the atmosphere, as will happen for a vadose stream. The observations therefore seem to confirm the theory of Adams and Swinnerton of the importance of soil carbon dioxide.

In the first paper of Sunday afternoon, Dr. T.D. Ford described vestiges of fossil Karst landscape to be seen in Derbyshire. The main point of the paper was that the formation of Karst landscape could have taken place at any time since the deposition of the Mountain Limestone 300 million years ago, while our present caves are generally products of the Pleistocene Ice Age. A fossil sink hole occurs in Windy Knoll Quarry, and a fossil boulder choke in Treak Cliff Cavern as examples of the 'pre-Millstone Grit' erosion cycle. Some evidence of the late Palaeozoic folding and Permo-Triassic erosion of the limestone was also quoted. Mineralisation had little effect in producing a Karst landscape on the surface, but had widespread subterranean effects. Large solution pits of pre-glacial age are also found, filled with sand which

has now been quarried out in many cases. Dr. Ford concluded his excellent paper with the observation that cavers are noted for arguing, but unfortunately too many argue with or about other cavers, and too few about the caves themselves. Only the latter will lead to enduring truth.

Next, Mr. W.J. Crompton described the Geomorphology of the Picos de Europa, which he has studied as geomorphologist of the Oxford University Expedition to Northern Spain 1961, and in succeeding years. The lecture was illustrated with many excellent and impressive slides of the region. The Mountain Limestone of Carboniferous ago has been subjected to large scale folding, so that the beds are vertical over a considerable part of the highest ground. The marks of ice erosion are still apparent, although Karst processes have since modified the landscape in detail. A description of lake-formation in the area was given, and a hypothetical cycle of runnel formation and erosion propounded.

The formal papers were concluded with a description of the life and works of Antoine Grimoald Monnet, a French chemist, Mineralogist and mining engineer, 1734-1817, by Mr. R.T. Clough of the N.C.M.R.S. Mr. Clough has carried out research on this little-known mining engineer, and intends to publish a book of his findings in the future. While in no way underestimating Mr. Clough's researches, the subject was perhaps a little too specialised for a general speleological conference.

The British Speleological Association has set a high standard in the content of its first two annual conferences, and it is hoped that this will be maintained in future years.