# MEMOIRS
# 1964


Wilcock, J.D., 1964
"Report of the Northern Region National Meeting
of the Cave Research Group of Great Britain, 1964"
Memoirs No.3, NCMRS, pp.22-24

Published by the

THE NORTHERN CAVERN & MINE RESEARCH SOCIETY
SKIPTON U.K.



**NB**
**This publication was originally issued in the 10 by 8 inch format then used by the society. It has now been digitised and reformatted at A5. This has changed the original pagination of articles, which is given in square brackets.**

# REPORT OF THE NORTHERN REGION NATIONAL MEETING OF THE CAVE RESEARCH GROUP OF GREAT BRITAIN; 1964.

by

J.D. Wilcock, B.A., B.Sc., Grade I.E.E.

The northern region national meeting of the Cave Research Group of Great Britain for 1964 took place on Saturday and Sunday, 4th and 5th July at Bakewell, Derbyshire. The Peak District Mines Historical Society kindly acted as hosts. The formal part of the meeting, the reading of two papers, took place in the Assembly Room at Bakewell Town Hall, beginning at 5.0 p.m.

Dr. T.D. Ford gave a most interesting description of the Caves of Portland, accompanied by his excellent slides and the exhibition of many specimens, the transport of which must have proved quite cumbersome. Early indications that there might be caves in the Portland limestone area came from the discovery of flowstone and calcite flowers in ornamental gardens and quarries; these specimens came from fissures destroyed during quarrying operations. The Isle of Portland has since been explored more thoroughly for caves. Its area is roughly three and a half miles long by one and a half miles broad, and the predominant dip of the strata is about 1.75°.

The lithography is predominantly one of limestone. The upper rocks of the peninsula contain the Portland Stone, and the Purbeck Beds form a veneer on the top, while the Kimmeridge Clay beneath holds water up to the level of the upper beds. Many joints were found in the limestone, some with flowstone. Aragonite occurs in shell fossils, and this has been preferentially dissolved, leaving 'pock-marks', probably the key to the formation of all solution caves in Portland. Solution fissures have been recorded containing a fill of fractured rock, clay and bones. The more plastic beds often are found to be still intact over these fissures, which occur along large joints, and the collapse of the roof beds may lead to the formation of caverns.

Only two solution caves of any size were found in Portland by Dr. Ford's party, Sawmill Cavern and Thrutch Cavern. A few fissures resulting from mechanical movement of the rocks were also found and descended. Some fissure walls are found in cliffs, where landslip has removed the opposing walls. Marine caves also occur, and it is evident that the fissure caves offer weaknesses to the sea for the general removal of the rocks of the peninsula.

Some points worthy of note arose during discussion of the paper. There are no risings in Portland as the term is normally applied; seepages occur, however, along the junction of the 'Portland Clay and Stone. The caves occur about 380 feet above sea level, and must have been developed at a time of high water table; dating is complicated. Jurassic

limestones in other parts of Britain also have evidence of fissures, but no large caves have been found in them so far.

Mr. R.R. Glover read the second paper, entitled 'Communications Underground'. The main paper, which contains many historical details not suitable for a short treatment of the subject, was tabled, and Mr. Glover gave a summary of the development of communication experiments in caves and mines, illustrated by working models.

The ideal specification for a caving communicator was tabulated:

1) Small and light (helmet fitting if possible).

2) Strong and proof against everything (water, dropping down pitch, etc.)

3) Power supply of reasonable endurance (of the order of 18 hours), either readily purchased or easily charged by car batteries.

4) Range 1 - 2 miles.

5) Mobile.

6) Simple to operate, with as few controls as possible, e.g. on/off, volume, and a manual over-ride to cut out the voice operated transmit facility.

7) Alarm feature.

8) Directional facility for survey use.

9) Frequency setting.

The various systems of communications used at present were examined in the light of this ideal specification, and their advantages and drawbacks highlighted. There are three types of communications in general use: mechanical, electrical and electronic. Mechanical systems include such methods as voice, whistle, hammer and pulls on a rope, which have obvious limitations. Electrical systems, notably the telephone are not mobile, and one or two wires of good quality are required between the transmitter and receiver. Radio has the disadvantages that short waves are absorbed by the rock, While long waves require large aerials.

The method of communication offering the best prospects towards the satisfaction of the ideal specification is the inductive effect. Dr. H. Lord and some American workers have carried out extensive experiments in this field, and large coils with heavy power supplies are necessary. However, it has been found in mines that metallic conductors

have the effect of 'channelling' radio waves. Mr. Glover has had very successful results in Deep Ecton Level using the ATE Inductorfone, available from ATE (Wigan) Ltd., Pioneer Works, Wigan, Lancs. at about £100. An earthed wire is necessary throughout the length of the cave; this [23] need not, however, be of good quality. Both ends are earthed, and the induction loop is completed through the rock. A Post Office transmitting licence is necessary, and only covers underground work.

Demonstrations of the method were given using miniaturised equipment using a simple loop aerial as well as an augmented (ferrite core) aerial.

Discussion of the method raised the point that the signal may jump a corroded joint in the single wire, which is usually mounted in the roof of the cave, but not a gap. The inductive effect promises to give important future developments in cave communication.

Dr. Ford provided an interesting mineralogical footnote to the meeting by a discussion of the occurrence of 'Stalactitic' Barytes. The manuscripts of White Watson refer to the mining of stalactitic barytes in June 1832 south-east of Arbor Low, and by a remarkable piece of detective work the site of the original workings has now been located. No other minerals have been found in the same waste heap. As a result of the examination of the specimens, the barytes is no longer thought to be stalactitic, but simply a hydrothermal vein deposit on a partial clay fill. It would originally be found by the miners as loose blocks in the mineral earth of the fissure. The apparently stalactitic cross-sections are simply well-chosen slices, and pseudo-stalactitic barytes is a better term for the mineral. (A more detailed account of the discovery may be found in C.R.G. Newsletter No. 90/91, June 1964).

Mr. J.D. Wilcock proposed a vote of thanks to the speakers and the P.D.M.H.S. The informal dinner after the official part of the meeting took place at the Wheat sheaf Hotel, and was a most congenial extension of the social occasion. On Sunday 5th July several trips were arranged, notably to Ashford Marble Mines and a hydrological (surface) excursion in the Stoney Middleton, Foolow and Eyam area. The Peak District Mines Historical Society are to be congratulated on the organisation of so successful a meeting.