NORTHERN CAVERN & MINE RESEARCH SOCIETY

NEWSLETTER

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THE NORTHERN CAVERN and MINE RESEARCH SOCIETY

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Honorary Newsletter Editor: D.T.Richardson,A.R.I.C.; 5,Calton Terrace, Carleton Road,Skipton-in-Craven,Yorks.

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S O C I E T Y N E W S.

1. OBITUARY: Major Ernest Rokeby Collins. D.S.O. Late East Lancashire Regiment - Low Green,Pateley Bridge,Harrogate,Yorkshire.

Deceased 25th. February 1963. Aged: 92 .

One Time Chairman - Pre History Section,Yorkshire Archaeological Society.

Member - Pre History Society.

Major Collins was an authority on palaeolithic implements produced from chert. In the 1920's he discovered five sites of Upper Palaeolithic type (Cresswellian culture) at Gouthwaite Reservoir,Nidderdale,Yorkshire, and in 1932 presented a paper about his Nidderdale discoveries to the International Congress taking with him several specimens of artifacts. These artifacts were shown to several authorities including the late Abbe Breuil who positively identified them.

He was responsible,in 1956,for the sorting and restoration of reindeer bones found in the "New Section" of Stump Cross Caverns which had been opened in 1955. An account of this discovery was given by Major Collins in the Society Transactions Volume 1. Number 1. June 1961. He was also a vigorous opponent of a proposed limestone quarry near Goyden Pot in 1960.

Major Collins was elected an Honorary Member of the Society in September 1960.

It is with great sadness that we record the passing of such an eminent authority.

J.E.Freeman.

2. ANNUAL GENERAL MEETING 1963.: This will be held at the Devonshire Hotel,Newmarket Street,Skipton on Saturday 12th. October 1963 - PLEASE NOTE CHANGE OF DATE - Meet at 2.00 p.m. for prompt start at 2.30 p.m.

3. ANNUAL DINNER 1963: This will be held at the Devonshire Hotel, Newmarket Street,Skipton on Saturday 12th. October 1963 after the Annual General Meeting - PLEASE NOTE THE CHANGE OF DATE. Meet at 7.00 p.m. for prompt sit down at 7.30 p.m. The dinner is open to ladies.Members of other Clubs and friends of members of the Society are cordially invited. It would help if persons wishing to attend the dinner would notify the Honorary Treasurer,D.T.Richardson,A.R.I.C.,5,Calton Terrace, Carleton Road,Skipton-in-Craven,Yorkshire not later than the 7th. October 1963. Cost 15/0d per person.

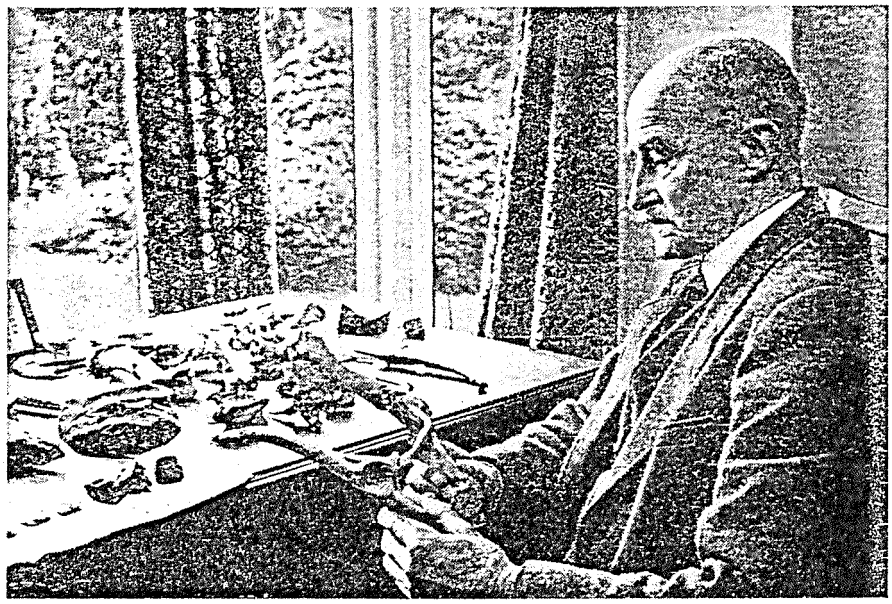
4. MEMBERSHIP LIST.

(i). Correction to List of Members published in Newsletter Vol.1. No.2.

RESIGNATIONS: Delete:P.S.Schofield. 3,Elswick Road,Leyland,Lancashire.

LIST OF MEMBERS AS ON THE 31st.MAY 1963 : Add : P.S.Schofield . 3,Elswick Road,Leyland,Lancashire.
We apologise to Mr.Schofield for this error.

The Late
Major E. R. Collins, D.S.O.



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4. MEMBERSHIP LIST (continued):

(ii) Change of Address: W.Walton. 20,Dragon View,Skipton Road,Harrogate.

5. SOCIETY FIELD CENTRE - PICKERING END,HEBDEN,SKIPTON,YORKS. The centre has now been closed down. Items of laboratory equipment,tackle,etc. have been withdrawn to the Tackle Store at the Black Horse Hotel, Grassington. The mineral collection has been rehoused at the home of R. S.Harker,Esq.,Lythe House,Grassington and all the library books have been taken into custody by our Honorary Librarian,Mrs.M.G.Wood,B.A.

6. SOCIETY LIBRARY - MISSING BOOKS: The Honorary Librarian reports that the undermentioned library books were not amongst the material transfered from Pickering End Field Centre.

A.(i). 4. Yorkshire Caves and Potholes. Volume 1. North Ribblesdale. Mitchell.

A.(i). 6. Caving in North Wales 1958 - 1960. Shepton Mallet Caving Club.

A.(i).10. The Caving Code.

B.(i). 3. Cave Research Group of Great Britain. Biological Records Part VI.

B.(i). 6. Cave Research Group of Great Britain : Publication Number 10: Ogof Agen Allwedd. David E.Leitch.

B.(xii).1. White Rose Pothole Club Journal Volume 1. 1961.

D.(i). 3. A Selective Bibliography of books and sources of information on mining,smelting and metallurgy,with special reference to Lead Mining and Lead Smelting in the North of England. R.T.Clough. 1960.

Mrs. Wood requests that any member who is in possession of any of the above books should return to her without delay. Mrs. Wood's address is 12,Westville Avenue,Ilkley,Yorkshire.

7. HONORARY RECORDER - REQUEST FOR MATERIAL: Members finding anything of interest in newspapers are asked to forward the articles to Mr.J.M. Dickinson,8,Cedar Avenue,Sutton-in-Craven,Keighley,Yorkshire.

8. WILLIAM PENGELLY CAVE-RESEARCH CENTRE : The Society has applied for an Institution Membership of the Association of the William Pengelly Cave-Research Centre.

Members of the Association of the P.C.R.C. are entitled to receive a Journal,Newsletters and secretarial notices;to vote at General Meetings of the Association;and (subject to its stage of development and the availability of Leaders) to make application to use the facilities of the Pengelly Cave Research Centre,Buckfastleigh,Devon.

9. DISCUSSION GROUP MEETING - FRIDAY 14th. JUNE 1963: Twelve members attended this meeting which was held at the Brick Hall Inn, Sheep Street,Skipton-in-Craven. Those who attended the meeting thoroughly enjoyed themselves especially as the room proved large enough to allow several groups to carry on their own individual discussions at the same time. Mr.Richardson provided a projector and screen which enabled some members to show their slides. The outcome of the meeting was a

9. DISCUSSION GROUP MEETING (continued):

unanimous request for future meetings along these lines. We hope therefore to arrange similar meetings during the winter months.

10. COPY DATE FOR THE NEXT NEWSLETTER - Volume 2. Number 1. Closing date for material for the next Newsletter is the 14th. December 1963.The Honorary Newsletter Editor,D.T.Richardson,A.R.I.C.,5,Calton Terrace, Carleton Road,Skipton-in-Craven,Yorkshire will be grateful if would-be contributors will bear this date in mind. You are are asked to illustrate your articles wherever possible. If possible please restrict your illustration,survey or map to 10" x 8" paper. If you find it necessary to use a larger format please contact the Newsletter Editor before commencing to draw out your illustration. Drawings should be done in indian ink on good quality white paper - NOT card. Photographs intended for reproduction should be good contrasty black and white photographs with a glossy finish and should be unmounted. Use soft pencil only for marking on the reverse side. They will be returned to you.

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SOCIETY MINERAL COLLECTION.

R.S.HARKER.

THE SOCIETY MINERAL COLLECTION IS NOW BEING KEPT BY R.S.HARKER, Esq. AT LYTHE HOUSE,GRASSINGTON, SKIPTON, YORKSHIRE.

The list includes minerals in the authors own collection which are available to Society members for inspection and study. In many cases several different forms of some of the minerals are available.

Minerals,other than those given in the list,as well as exceptionally good specimens of those already listed are solicited from Society members.

Ore suites are being collected by the author for laboratory study - i.e. a section of vein is taken from one wall to the other including the wall rock. A sketch is made of the vein and the specimens labelled according to their position. The author would be very grateful for any such suits that members may feel inclined to collect.

A large number of specimens of the more common Craven minerals and less common Lake District minerals are available for members private collections. At the moment we have good stocks of galena;calcite;barytes; witherite;pyromorphite;garnet and epidote and a small amount of selenite; coronadite;rosasite and aragonite.

SULPHATES	Gypsum	MANGANATE	Coronadite
	Selenite	NATIVE ELEMENTS	Graphite
	Barytes		Sulphur
	Chalcanthite		Silver.

SOCIETY MINERAL COLLECTION (continued)

SULPHIDES	Galena	SILICATES	Quartz
	Zinc Blende		Orthoclase
	Pyrite		Almandine garnet
	Arsenopyrite		Muscovite
	Bornite		Actinolite
	Covellite		Tourmaline
	Stibnite		Epidote
	Molybdenite		Chrysocolla
CARBONATES	Calcite		Hemimorphite
	Aragonite	OXIDES	Haematite
	Dolomite		Magnetite
	Siderite		Cassiterite
	Witherite		Pyrolusite
	Smithsonite	PHOSPHATES	Apatite
	Malachite		Pyromorphite
	Azurite	ARSENATES	Kampylite
	Rosasite		Carminite
	Aurichalcite		Bayldonite
FLUORIDES	Fluorspar	TUNGSTATES	Wolfram
SULPHIDES	Chalcopyrite.		

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REPORT ON THE ANNUAL CONFERENCE OF THE BRITISH SPELEOLOGICAL ASSOCIATION, SHEFFIELD, AUGUST 1963.

John D. Wilcock, B.A., B.Sc.

The speleological conference and exhibition of the B.S.A. for the year 1963 took place at the University of Sheffield from August 10th. to 12th. The following society members were present :- R.T.Clough & J.D. Wilcock. A full account of the papers presented is published in The Proceedings of the British Speleological Association,Number 1. All deal with original speleological work relating to caves,potholes,cave archaeology,technical speleolcgy and leadmines. A summary of the papers is given in French and German. The B.S.A. was formed in 1935 for the purpose of furthering all aspects of speleology and for providing an association of British individuals,clubs,museums and other bodies interested in caves,archaeology and leadmine history. Together with the

Cave Research Group of Great Britain and the newly-formed Association of the William Pengelly Cave-Research Centre it coordinates the work of British speleologists. As Dr.Sutcliffe said in his paper,however,it is a great pity that Britain now has three national caving organisations,and we may hope that it will not be long before they amalgamate into one,as in America.

The national conference of the B.S.A. is designed to bring together all British cave enthusiasts and cave organisations for several days during which lectures,discussions,films,caving trips,social gatherings and a salon of photographic art are to be held.

A short resume of each paper presented to the conference will now be given. A.L.Pill,F.R.G.S.,F.G.S. described some recent discoveries in Hartle Dale Caves,in the Castleton area of Derbyshire. Archaeological discoveries from the pleistocene up to the present day,and present day zoological discoveries in the caves were described. The finds were discussed in detail. Some observations on the chemical and physical characteristics of the cave deposits followed,together with a more specialised description of the archaeological stratigraphy of Fissure Cave.

R.S.W.Braithwaite,B.Sc.,Ph.D.,A.R.I.C., gave a summary of the Moneralogy of the Derbyshire Dome. The distribution of primary and gangue minerals were discussed,in particular with respect to their igneous origin The occurrence of secondary minerals,formed by alteration of primary minerals,also received attention,with reference to the region under discussion.

Dr.A.J.Sutcliffe,Ph.D.,of the British Museum (Natural History) outlined the aims of the William Pengelly Cave-Research Centre, Buckfastleigh,Devon. The centre is named after Pengelly,the nineteenth century excavator of Kent's Cavern,Torquay. It is situated at Higher Kiln Quarry,Buckfastleigh,and is the property of the Society for the Promotion of Nature Reserves,by whom it is leased to the Devon Naturalists Trust. It is managed by a Governing Body composed of representatives from these two Societies,the Devon Speleological Society and Exeter University, and is supported by the Association of the William Pengelly Cave-Research Centre,a national body with headquarters in London. The caves of Higher Kiln Quarry are in course of being developed as a teaching and research centre. In the first instance Joint Mintnor Cave is being set up as a museum-cavern and demonstration bone cave,with a standing section of the deposits showing their stratification and some of the bones lying where they were found.

D.A.Jenkins,B.A. gave some notes on Agen Allwedd and the Geology of the Mynnydd Llangattwg,South Wales. The cave system of Agen Allwedd is developed within the oolite group of the Avonian succession in the cliffs overlooking the Usk Valley at Crickhowell. It is one of the largest known systems in Britain, and because of its many unique features, it is also one of the most interesting systems. Mr.Jenkins gave a brief account of the general stratigraphy and structure as exposed in the cliff face and within the cave,and the petrology of the relevant beds. Next a series of notes on the various types of passage,and their deposits and

formations was given. Finally, the age, origin and development of the cave system were discussed.

A paper on the Halkyn and other mines in the Carboniferous limestone region of Flintshire, North Wales, was read by M. Bevan-Evans, M.A., F.S.A., the county archivist of Flintshire, in the absence of the author, P. Wild, Esq.. The paper gave a general description of the lead mines of Flintshire, and their history. The Tal-ylGoch and Halkyn mines received special attention, and there followed a description of the great drainage levels of the area.

H. Lord, B.Sc., Ph.D., of the Technical Speleology Unit, described a device for surveying and speech communication underground employing a magnetic field generator and detector. The device was developed in an attempt to improve the accuracy of cave and mine surveys, by relating them to surface points, and also to provide a reliable means of communication with the surface, particularly in bad weather and for rescue purposes. The merit of the instrument is that it overcomes the disadvantages of radio waves, does not require a Post Office license, and is quite accurate up to several hundred feet in depth below the surface. A description of early work, more recent developments and surveying technique were given. In the appendix given in the proceedings, there is also a full description of the apparatus (which can be carried in an ammunition box), circuit diagrams, and a theoretical discussion of the physical principles involved. This device could with advantage be adopted by the N.C. & M.R.S.

F. Atkinson, B.Sc., F.M.A., gave some notes on the formation of caverns in the Craven Area of North-West Yorkshire. The paper included many excellent diagrams, and will be of interest to all members of the N.C. & M.R.S.. The factors in Vadose cavern formation, the mechanism of cavern formation, simple joint passages, fracture joint passages, and the effect of joints upon passage formation were among the topics discussed. The conclusions of the paper were that cave systems in the Craven area have been and are being formed by the action of flowing water, assisted by joints and impervious beds in the Great Scar limestone. Secondly, two types of passages have been distinguished which, it is suggested, are the results of two types of jointing in the limestone.

The paper on Stump Cross Caverns, by G. Gill, Esq., and read in his absence by Dr. E. Travers, M.A., Ph.D., M.D., will be of interest to all members of the society, from our association with the caverns. Mining activity in the region of Greenhow since the days of the Romans was discussed. The discovery of the caves by the miners was also mentioned. The shaft dug by members of the society beyond the known Show Cave end received attention. An excavation of over 300 bones of Tundra Reindeer and the stratification in a shaft dug below them in the fill was described. Mr. Gill concluded by offering a welcome to anyone wishing to do serious work, and he received many tributes on his cooperation with researchers present at the meeting. At the end of the paoer, Dr. Travers read a report from Geoff Workman, the Secretary of the Derbyshire Caving Association, who at the time of writing has broken the record for underground stay set up by M. Marcel Siffre; Mr. Workman described his stay

underground in Stump Cross Caverns,and his work,concluding with his best wishes for the conference.

The highlight of the conference,from a N.C. & M.R.S. point of view was a paper on the Industrial Revolution in Swaledale Mining,given by an economic historian,B.Jennings,M.A.. This exccellent description began with a discussion on the main vein complex of Swaledale,and the history of mining in the region. The increasing difficulties in mining at depth led to a need for adequate capital for drainage devices. Water power was used extensively,and because the coal supply in the area was poor,steam engines were not very successful. There were no changes in driving techniques until black powder was replaced by dynamite. The cost of level driving made necessary adventurers able to put up the moneyand willing to wait some time for a return. Since the usual time for a lease was 21 years,the time taken in level driving was a serious drag on development, and a complex series of covenants were evolved,so that former adventurers stood to regain some of their investments. The rationalisation of the dressing and smelting layouts was an important development. The absence of limited liability in company law at the time was not a serious drawback in Swaledale mining,because the personalities involved were cautious.Mr. Jennings expressed the opinion that many Swaledale agents were 'backward-looking and thick-headed',and that many difficulties in the mining could be traced to this incompetence. The personalities of the agents influenced the whole course of the undertakings. In the paper Mr.Jennings discussed the differences in outlook and capabilities of two agents,John Davies and his successor Frederick Hall,of the Old Gang Mines.

The salon of photographic art contained many good transparencies. The prizewinners this year were of subjects in the Gouffre Berger and Carleswark Cavern,Derbyshire.

Copies of the Proceedings of the B.S.A. Number 1. may be obtained from P.W.Crabtree,B.A.,B.Sc., Department of Chemistry,The University, Sheffield,Yks, price 15/-.

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REPORT ON THE SOUTHERN GENERAL MEETING OF THE CAVE RESEARCH GROUP OF GREAT BRITAIN, Saturday 29th. June, 1963.

by

J.D.Wilcock,B.A., B.Sc.,

The meeting was held at the Church House,Lion Street,Brecon, beginning at 5.00 p.m. Three papers were read,and a fourth reserved for publication in the transactions. W.H.Little was in the chair. The papers read were as follows:

1. Intermittent Springs, by G.Stevens, of Oxford University.

Mr.Stevens presented a paper compiled mainly from literature on intermittent springs available in the Bodlein Library,Oxford. The most famous intermittent spring is the Ebbing and Flowing Well,Giggleswick

.Scar;others occur at Torbay,Masson Mine,Speedwell Mine,and in Dan-yr- Ogof. Some publications contain diagrams similar to that given in the chapter on Cave Physics by J.O.Myers in British Caving (C.R.G.),but,as Myers says, any discussion of the working of springs such as the Ebbing and Flowing Well is purely surmise.

2. The Development of Swildon's Hole,Priddy,Mendip, by D.C.Ford,Esq.

The paper forms part of the D.Phil. thesis of Mr.Ford,and is the result of several years' study underground.

The Old Red Sandstone of the Mendips forms the reservoir rock,from which streams flow across shale and sink at the limestone outcrop. The cave follows the dip of the limestone at 20° to 30° until it ends in a series of sumps and chokes.

The cave may be divided into three sections:i) the inlets,including the entrance passages and Swildon's I to the first sump, ii) the master cave,of very low gradient,containing several sumps;this is of mainly phreatic development,and contains several bell chambers,but also some stream potholes; iii) the fossil cave,which contains no active streams; the rocks are smashed in the neighbourhood of the Priddy fault,resulting from the Hercynian orogenesis;cave development is thought to have been in the Pleistocene.

The sequence of development was explained as follows:

I. The Fossil Cave develops in the fault zone,and includes a large fault chamber,tubes,and 'chipolata passages',of great importance in the later development of the cave.

II. The water table falls,and the fossil cave passages develop by successive captures.

III. Shatter Passage and the two inlet systems are developed via the chipolata passages. Both inlets are joined to the old system,almost symmetrically.

IV. The fossil cave is abandoned as the water table falls again. The master cave,a low-gradient drain,starts its development at the lowest point of the former passage,and the discharge from this passage is diverted. The master cave then develops in a northerly direction by additions to its head;finally the two inlet systems are captured by the master cave.

V. In modern times there have been three fill-and-cut cycles. The most northerly of the two inlet streams has now been captured on the surface by the other stream,which sinks at the present entrance to the cave.

3. Cold as a cause of death in caves,by Dr.Oliver Lloyd.

Dr.Lloyd related the circumstances of the two fatal accidents to cavers in the Mendip area caused by cold. The cause of death in both cases was acute heart failure,preceded by a fall of body temperature,loss of heat and torpor.

The best remedy in such cases is a hot bath without delay:in one case death occurred only one hour after the first symptoms were noticed. Rubbing the skin with towels is not sufficient,and dry clothes and hot water bottles produce slow warming only. It has been demonstrated that the body temperature continues to fall after removal of the external coolant,an effect called the 'afterdrop',and this may cause death if the subject is not quickly re-heated.

Dr.Lloyd compared the results of the post-mortems on the unfortunate cavers with experiments carried out at Dachau during the Nazi regime, and with figures on shipwrecked mariners. His conclusions were that loss of heat from the body while caving depends on the clothing worn, the general state of health,and the thickness of the subcutaneous fat layer. Psychological factors may also have an effect.Methods of re-heating the bodies of cavers suffering from cold in cases where a hot bath is not available within the short time (i.e. one hour) indicated by the above observations were left to the further ingenuity of members. Neoprene wet suits are perhaps the complete answer for the prevention of this form of accident.

The meeting then adjourned to the Castle Hotel,where a very enjoyable dinner took place.

On the following day the usual caving trips took place;the number of cavers who turned up was surprising considering the depressed state of the audience after Dr.Lloyd's paper! As a consolation,visitors to Ogof Ffynnon Ddu were under his observation and personal diagnosis.

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SPELEOLOGICAL YEAR BOOK and DIARY 1964.

We have received advance notification of this entirely new publication which is best described by the author's own circular:-

"With your support and encouragement,1964 will see the publication of the first ever - SPELEOLOGICAL YEARBOOK & DIARY .

A publication which we wish to publish because we believe that it will fill a gap which is not covered by any other publication in this country.It will provide you with up-to-date information on :-

Caving Clubs and Societies in Britain and throughout the world.

All the caving areas in Britain,with all Major systems listed and map referenced.Details of access and local accomadation will also be included.

All the important speleo events of 1964 will be scheduled,with dates, times and places.

There will be a complete list of all the Cave Rescue Headquarters in Britain,together with details of cave rescue proceedure.

Amongst these major items,we will include details of the Caving Code, A Glossary of Terms and some simple First Aid Tips.

The publication will be 8½" x 5" wide,it will contain over 100 pages - which will include a Day-by-Day DIARY which will have extra space for

the weekend days,in which you can record your trips.

The cover will probably be of a pleasant blue leatherette finish, and the spine will be blocked in gold with the words:-

SPELEOLOGICAL YEARBOOK & DIARY 1964.

WILL YOU AND YOUR CLUB SUPPORT THIS VENTURE? IT DEPENDS UPON YOU FOR ITS SUCCESS.

We have prepared this circular so that we may take the opportunity of assessing the demand for this publication.If the demand for it is not what we anticipate,it will be necessary for us to wait until it is. The cost will probably be 7/6d,but will definitely not exceed 10/0d.

Please be assured,that this is not a commercial venture,we feel that this sort of publication would be playing an important part by helping the speleological fraternity of Great Britain to establish itself more firmly,by providing it with a service which is not covered by the Cave Research Group,The British Speleological Association or any of the many clubs throughout our country. "

JOHN K.DRYDEN, 1,BEAUFORT EAST, LONDON ROAD, BATH, SOMERSET.

Members of the Society are asked to put their requests for copies of the Speleological Year Book & Diary,1964 through the Honorary Newsletter Editor,D.T.Richardson,A.R.I.C.,5,Calton Terrace,Carleton Road,Skipton-in-Craven,Yorkshire. PLEASE NOTE NO MONEY IS REQUIRED AT THIS STAGE.

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BULLOCKS and GEESE.

The following correspondence and notes have been received as a result of the article entitled " Bullocks and Geese " by R.G.Guthrie which appeared in the Society Newsletter Volume I Number 2. May 1963. p.20 - 21.

"Mr.William (Billy)Blakey of Grassington,Skipton,Yorkshire,is in possession of several bullock or heifer shoes even today,which is not really surprising,Dales farmers being very conservative. In the mistal near his house he also showed me a "besom engine" which is a tool rather like a large pair of tongs - one end was stuck in a block of wood the other being flattened to take pressure from the knee. The twigs were held between the tongs and bound with strips of ash obtained by soaking a log of ash in water for several weeks. A similar engine is to be seen in Castle Bolton Museum,Wensleydale,the curator having been recently informed by the writer as to the exact nature of the tool.

Mr.Blakey is also in possession of brake shoes for horse drawn carts which are flanged iron shoes inserted under the locked wheels of a cart to prevent the iron tyres of the cart wearing out.

The writer recently came into possession of a "stone mop",which is

a block of stone (grit or limestone) fitted with an iron socket to take a wooden handle. Sand was scattered on the wet flagged floor and the "mop" was used to scour the floor.

Mr.Richard Joy,of Hole Bottom,Hebden,is in possession of a similar stone mop along with various miners picks and boring bars and a "bucker" * initialled A,J, The initials probably refer to one Antony Joy,a mining ancestor of the said Richard Joy."

(* Bucker or Booker : A kind of hammer with a broad and flat face with which ore was knocked into a reasonable size on a "knockstone". Illustration: N.C.M.R.S.Transactions Volume 1. Number 1. figs. 8 & 9 Plate One ,) Ed.

R.S.Harker.

Lythe House,
Grassington.

" In the Art Gallery and Museum,Cliffe Castle,Keighley,Yorkshire are exhibited several examples of ox and cow shoes. Included in the collection are specimens of ox shoes which came from the blacksmith's at the bottom of the village at Grassington. Unfortunately the museum knows very little about these particular ox shoes except that they were definately made in Grassington.

I am indebted to Mr.Ogden,Curator of the Cliffe Castle Art Gallery and Museum and members of his staff for supplying me with the following references to ox shoes,the shoeing of geese,the loan of the photographs from which the accompanying illustration was prepared and for permission to reproduce the illustration.

OX - SHOEING,etc.:

"Browns Survey of the West Riding 1793 " - SKIPTON - " I understand that even within the last forty years,there was a considerable portion of land in tillage;the ploughing was then performed by four or six oxen,and one or two horses;and I am informed that mode of husbandry answered very well."

"Byways of British Archaeology" by Walter Johnson. Camb.Univ.Press 1912.

"Countryman" Spring,1943. p.99 Illustration.

"Countryman" Winter,1943. "We never shoe our oxen as their work lies mainly on turf and our roads are chiefly of soft limestone which is not injurious to their feet."

"The Home Owner",Summer 1949. (Halifax Building Society) publish a photograph of oxen still working in England on the estate of the Earl of Bathurst,Cirencester.

"Whitby Gazette 25th. January 1963" "Old time butchers used to tell me that there was no beef equal in flavour or texture to that of bullocks which had been used for ploughing and draught work until they were four or five,and then fattened off..... one never or rarely sees oxen yoked in North Yorkshire though it is still possible at Scaling .....The last in the North were on Lord

EXAMPLES OF OX
and COW SHOES.

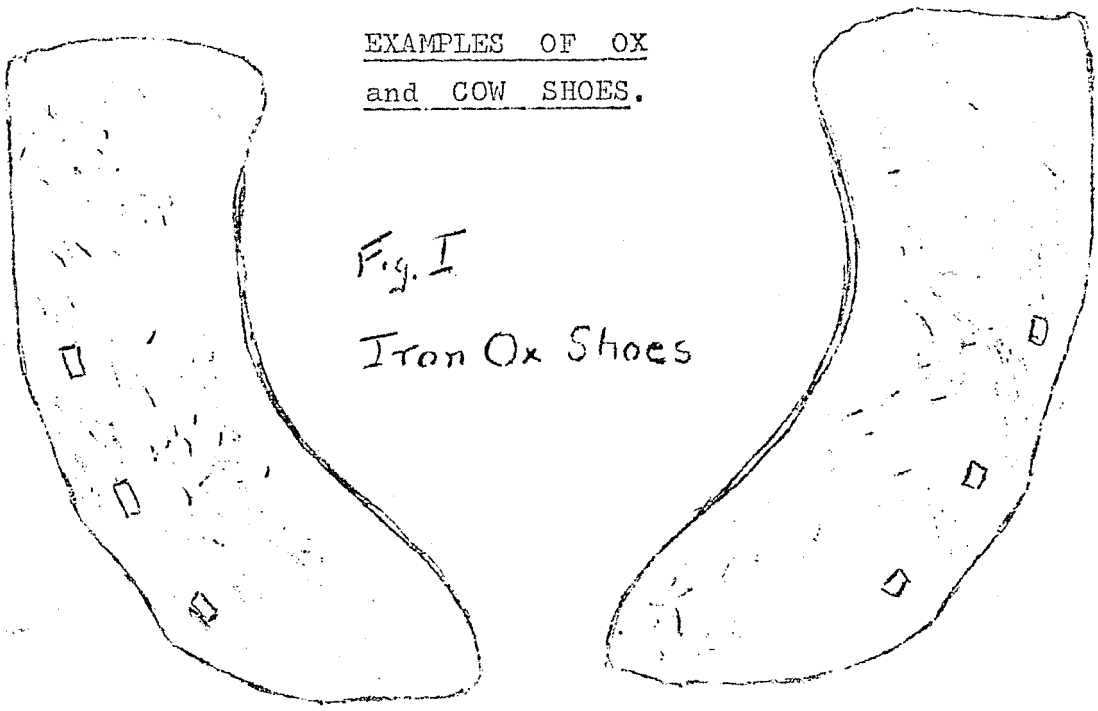


Fig. I
Iron Ox Shoes

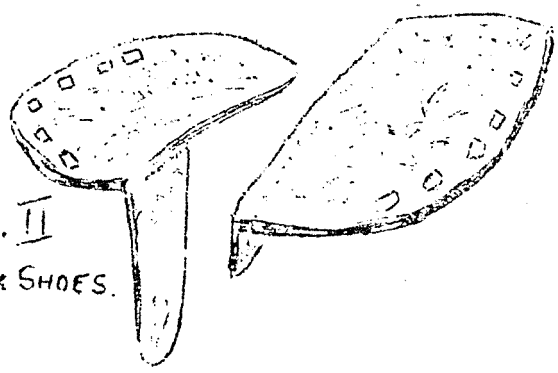


Fig. II
Ox Shoes.

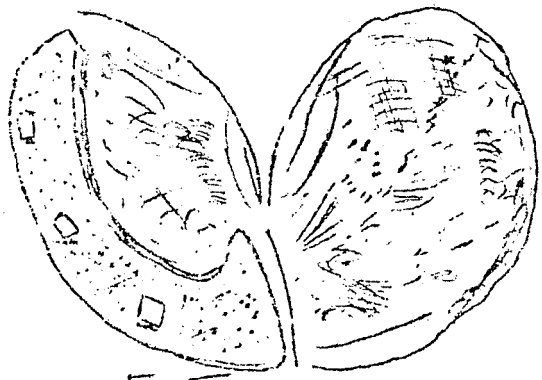


Fig III
Cow Shoe for left side of hoof

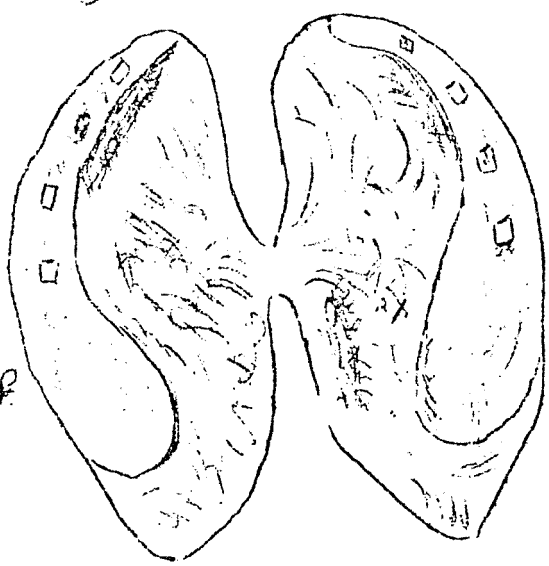


Fig IV
Cow Shoes on Hoof

FROM PHOTOGRAPHS AT THE
ART GALLERY & MUSEUM,
CLIFFE CASTLE, KEIGHLEY.
by kind permission of
the Curator, J.Ogden, Esq.
F.M.A.

facing p.15.

Feversham's Duncombe Park Estate ... and the man who shod them is still alive, Mr. Bob Bonas of Lingdale in Cleveland who sixty years ago had a blacksmith shop at Rievaulx and another at Helmsley; he is now ninety...."

"Dr.Rees Cyclopaedia 1819 " Part E (plates) Plate 27 - Illustration of an ox-shoeing machine.

IN KEIGHLEY MUSEUM :

Adjustable ox-shoe (Sunderland Collection)

Ox Shoe found on Addleboro near Bainbridge, by Rosse Butterfiel. (former curator).

Ox Shoe from Grassington (Blacksmith's at the bottom of the village.)

Cow Shoe (Grassington) wrought iron, for left side of hoof, presented by Michael Jackson of Cross Hills, 1945.

Pair of Ox Shoes.

Iron Ox Shoe, Canadian Type with upturned flange studs.

Ox Shoes made recently.

oooooooo

SHOEING of GEESE.

"Country Life " May and June 1960. "Shoeing the Goose" at St.Mary & All Saints Church, Whalley, Lancs. Illustration of Misericord.

"Country Life", May 1960 p.1137. Illustration of smithy attempting to shoe goose, smithy in background, but nails and hammer out of all proportion with job in hand, and underneath is inscription:

"WHOSO MELLES (MEDDLES) HIM OF THAT AL MEN DOS, LET HYM CUM HIER AND SHOE THE GHOS"

"Country Life", June 1960 p.1257. Misericord at Beverley Minster - Illustration of smith and goose, (again showing a shoe not in proportion to job.)
Also mentioned a similar carving in stone on one of the capitals of the choir at York Minster.

Mrs. P.Cowton, a member of the museum staff remarks: " I have a vague recollection that I have heard of leather being used for the geese feet, but no proper description of the way in which it was fastened on."

5, Calton Terrace,
Skipton-in-Craven.

D.T.Richardson.

-----oOo-----

SALE OF A SHARE IN A LEAD MINE.

N.C. & M.R.S. RECORDS.

November 15th. 1792

by John Maxfield of Greenhow Hill, miner who holds 1/16th. of a share in Galloways Ridge Mine in Dacre-with-Bewerley, leased in 1781. He now sells half of this 1/16th. share to George West, Coldstonefold, miner, for £70, to be paid over 10 years at £7 per year.

1st. September 1793

from: Taylor White of Walling Wells, and his eldest son and heir and Rev. Stephen White and John Gally Knight,

To: George Bardly of Grassington, gent. William Morley of Boroughbridge, merchant. William Bayne, Pateley Bridge, Innholder. Michael Houseman of Heathfield, webster. Jacob Bailey of Grassington, miner and George Gouthwaite of Pateley Bridge, cordwainer of :-

All mines of lead ore in Black Riggs in Galloways, within these boundaries : stone post in wall S.W. side of Simpsons Pasture adjoining Knaresbrough Forest 120 yards from S.E. corner of pasture nearly E. along line by chain of stone posts in Greenhow Sike - S.E. along sike to corner of fence wall between ancient enclosures of Taylor White and Knaresborough Forest and West by boundaries of Forest to S.E. corner of Simpsons Pasture to start.

21 years, rent of peppercorn on old Xmas day,

Royalty of 1/6th of output to be delivered at Smelt Mill in Bewerley to be provided by the lessors.

Hushing only by licence of lessors.

Lessees to have access to mines by usual ways, may make watercourses, but without prejudicing other mines, may errect buildings, take stone within the mining ground, peat from Greenhow Common.

Lesses must compensate for surface damage.

Lessors reserve the right to drive levels through the leased ground for access to other mines, without interfering with lessees. Shared cost for joint use of any waygates.

Lessees to employ "sufficient number" of miners, giving preference to tenants of Taylor White; and to use most approved method of smelting. To pay their Labourers and Miners in Pateley Bridge or Greenhow twice a year on Nov.22nd and May 12th. or within 21 days of these dates.

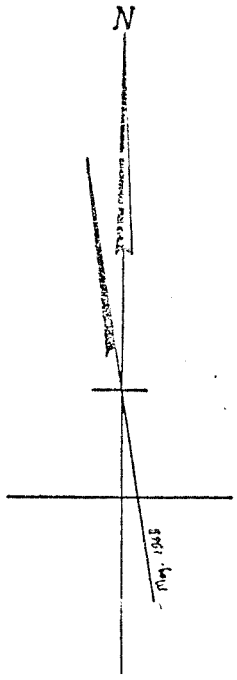
Lessees to maintain main waygates, watergates and buildings; not knowingly to allow water to go into other old workings.

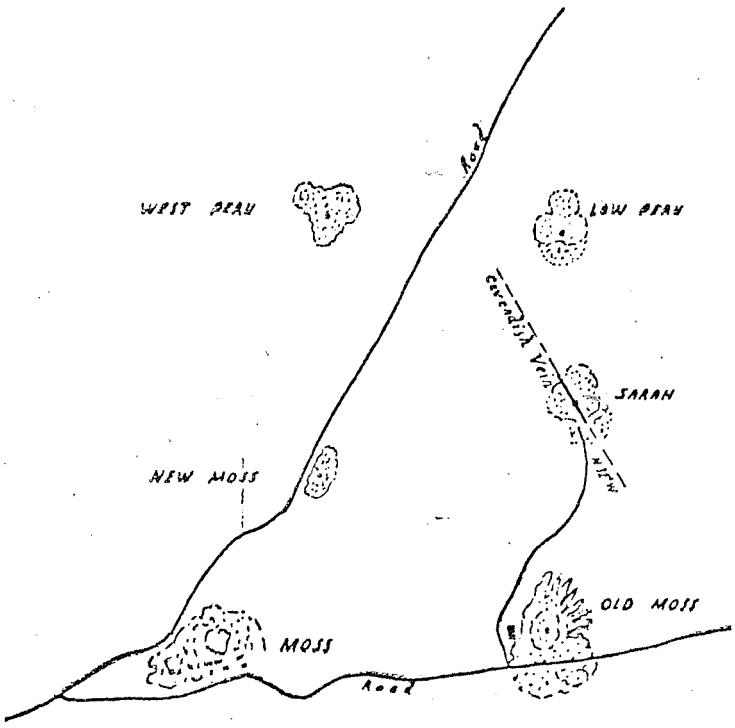
Lessees to make two new shafts at convenient distance on the line of the vein now working and cross-cut from vein near present forfield Northwards to the boundaries of the allotment within 18 months, with 6 additional labourers, penalty for neglect £500.

If no work done for two months, unless from unavoidable causes, lease void.

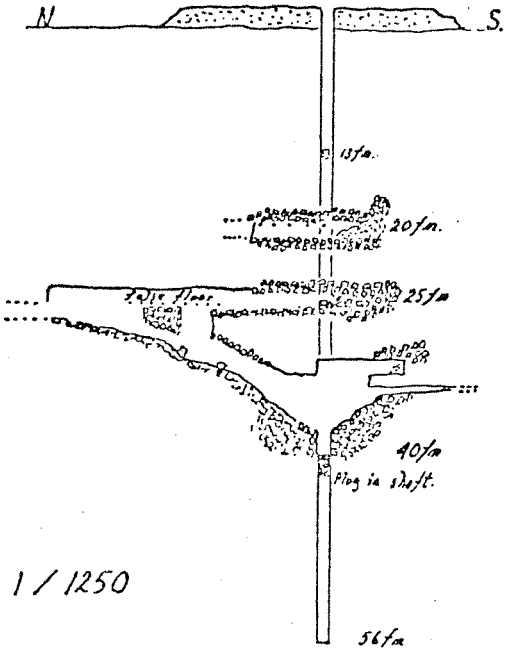
Lessees may not assign lease without consent of lessors.

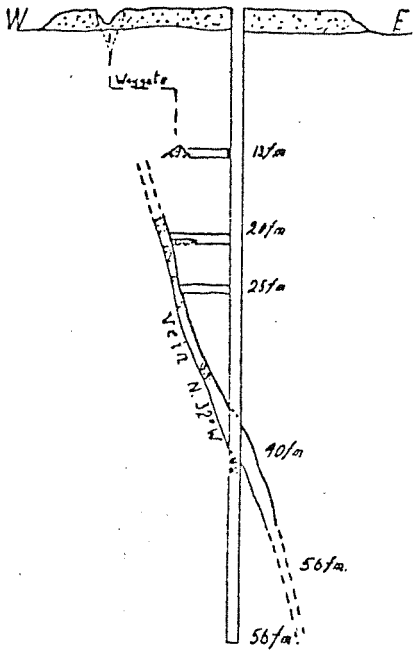
Lessors undertake to provide in some part of Bewerlet most convenient to the lessees a smelting mill with bellows and all other necessary gear





Plan Scale 1/10560





Section Scale 1/1250

North - South Section on Vein

East - West Section on Vein.

SARAH LEAD MINE Grassington Moor

N.C.M.R.S. SURVEY JUNE 9th 1963

NCMRS FSM 199

T.M.O

and tackle.

Lessees to provide coals,wood and fuel,and to have use of mill only when smelting their own ore -others may have similar use,to have 2 years after end of lease to dress up ore. Disputes to be referred to arbitration.

DEED OF COPARTNERSHIP,1794 recites that George Bardley and five others took lease of Galloways Black Rigg Mine on behalf of the partnership, holding the following shares:-

George. Bardley 1/10th. William Morley 1/16th. Elizebeth Fletcher,spinster of Grassington 1/12th. Francis Richardson,mercer of Ripon 1/32nd. John Morley,gent 1/32nd. George West 1/32nd. Robert Tennant,Esq. 1/36th. William Moorhouse,surgeon of Skipton 1/36th. and the remaining 1/16th. in trust for Richard Ward of Coldstonefold, Yeoman,and for the above parties,in the proportions aforesaid.

Partners to raise money as decided by a majority (in value),anyone not paying to loose share and rest to make up deficiency.
To employ an Agent. Meet at least once a year.
Settle profit and loss at annual meeting.

-----oOo- ---

SARAH LEAD MINE , GRASSINGTON MOOR.

CAVENDISH VEIN, 40 FATHOM LEVEL.

by

J.M.Dickinson.

The remains of Sarah Lead Mine on Grassington Moor,(N.G.R. SE 036673)at least on the surface,are rather un-impressive as the dressing floors and most of the spoil heaps have been turned over in the search for fluorspar in recent years.On the 9th. June 1963 the scene was, however,rather more industrious,members of the Society joining employees of the Dales Chemical Limited in an exploration of the shaft and workings.

The descent of the shaft was made in a specially constructed tubular steel cage suspended on 400 ft. of British Ropes "Bluestrand" steel wire rope of 5/8ths inch diameter powered by a "½yd Priestman Panther"excavator having a Dorman 2 cylinder 51 h.p. diesel engine driven by Mr.'Bert'Davis of Otley. Communication between cage and surface by means of a set of ex W.D. field telephones.

The objective of the descent was to try and enter the 40 fathom workings on Cavendish Vein and to explore this level as far as possible. Some five feet of the shaft and surrounding area had been taken off,as the shaft ringing was not safe. The shaft is oval in shape being approx. 6ft. x 4 ft. at centres andhas been sunk plumb throughout. Dry stone ringing in the shaft extends for some 50 ft. where it rests on a wood circle let into the solid rock. Apart from the first 5 ft.,this ringing is in excellent condition.

From the walling the decent continues through the Top Grits with the shaft walls retaining the oval section.Just above the 13 fathom level the remains of an iron water garland still cling to the shaft walls, although the fall pipe is missing. The 13 fathom level would appear to have been the entry point of a collapsed waygate which can be traced on the surface. A few tired looking timbers protrude out into the shaft and behind them a large fall of clay and shale can be seen.

From a spacious landing at 20 fathoms a 38ft. passage leads into a stope.At the southern end of the stope a total collapse has occured. Northwards packed deads and heavy timbering put us off exploring this stope. Descending from the 20 fathom level the junction of the Top Grit and the Bearing Grit is reached at a depth of 25 fathoms,marked by a 2 inch seam of coal. The stope at this level is again in a state of collapse at its southern end. To the North the remains of the supports for a timber floor can be traced,crossing over two large jagged holes in the floor (packed deads). It is estimated that one could see some 150 feet along the stope,which shows no trace of minerals whatsoever. On the shaft landing to this level a quantity of 4 inch cast iron piping (presumably from water garlands) could be seen.

At 40 fathoms the cage landed on a "plug" or false floor in the shaft.To the North and South 30° slopes of debris and collapsed floors presented a difficult exit from the cage. The North slope was climbed for approximately 60 ft. the vein continuing for a further 150 ft. or so at a width of approximately 4 ft. The view upwards was rather sobering - a rare collection of "Rock bridges" and "hanging pendants" supported by nothing filled the "roof" of the vein. In view of this no further exploration was attempted.

The cheeks of the vein had been picked clean,in fact it was some time before a very small patch of fluorspar was found and not a single trace of lead was found in the entire mine.

It is becomming apparent from explorations of other mines in this area that it was the practice to back fill the workings as they became worked out.

Throughout the operation all mechanical equipment worked well, except for a fault on the telephone cable during the last descent when the cage was at the 40 fathom level!!. Fortunately two of our members, who were making a prolonged if not detailed study of the 20 fathom level , were able to relay instructions to the surface.

In conclusion I would like to thank Mr.F.A.Smith,Managing Director of Dales Chemicals Ltd. for this unique opportunity of descending a deep working. Also I feel that all who made the descent will join me in thanking Mr.Davis (especially his right leg) who sat at the controls without a break for five hours and for giving us all a smooth ride.

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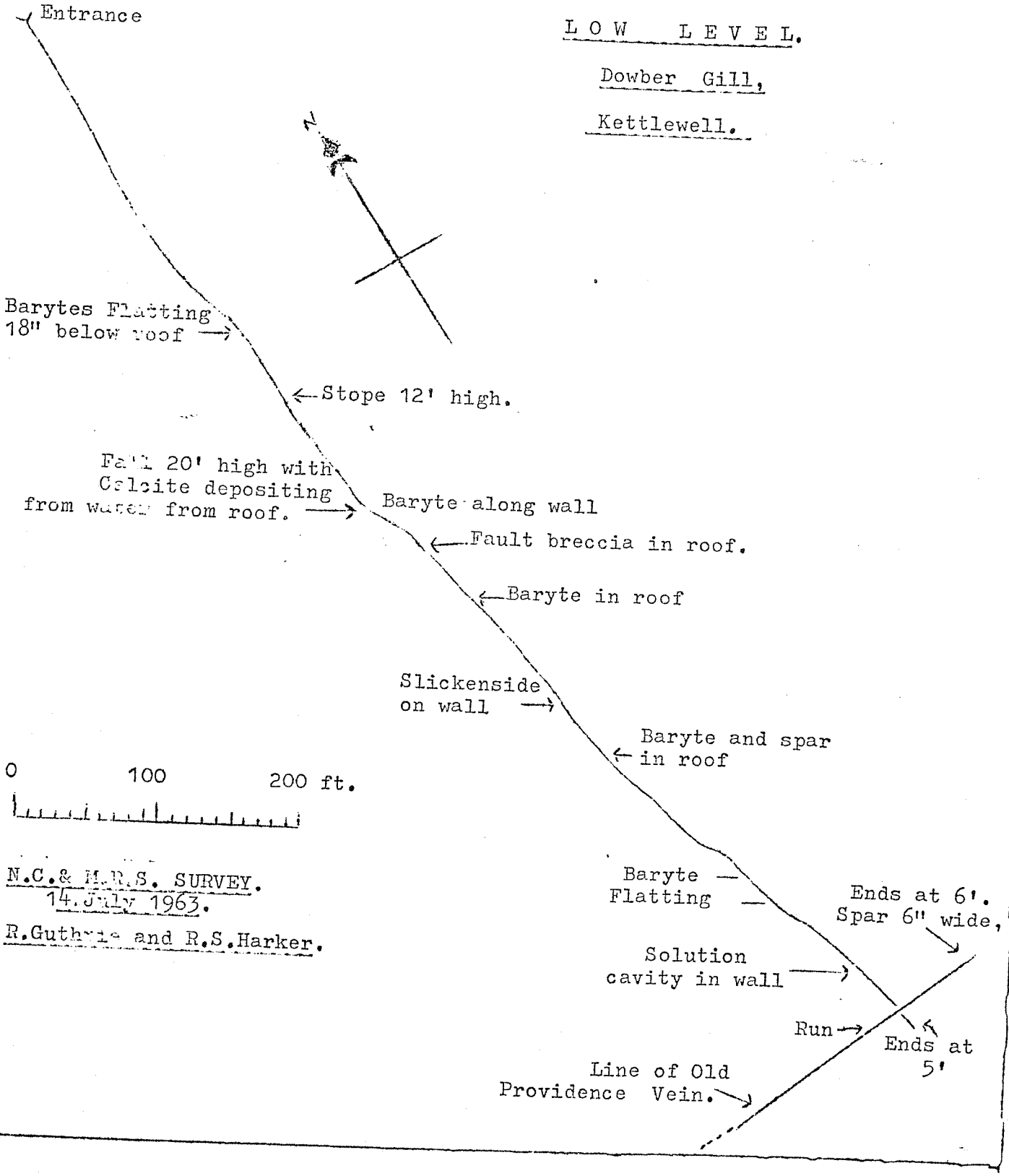
Entrance
LOW LEVEL.
Dowber Gill,
Kettlewell.
N
Barytes Flatting
18" below roof
Stope 12' high.
Fault 20' high with
Calcite depositing
from water from roof.
Baryte along wall
Fault breccia in roof.
Baryte in roof
Slickenside
on wall
Baryte and spar
in roof
0
100
200 ft.
N.C.& M.R.S. SURVEY.
14. July 1963.
R.Guthrie and R.S.Harker.
Baryte
Flatting
Ends at 6'.
Spar 6" wide,
Solution
cavity in wall
Run
Ends at
5'
Line of Old
Providence Vein.

LOW LEVEL and HOOKS BANK VEIN

DOWBER GILL, KETTLEWELL.

by

R.S.HARKER.

LOW LEVEL was the first to be examined. Exploration was followed by a rather rapid survey using a hand-held prismatic compass and 50ft. tape. No back sites were taken. The accuracy of the survey therefore leaves something to be desired.

The level is driven through good solid limestone following a slightly mineralised fault in a northerly direction for 175 fathoms. Although following a fault, little timbering was required and the level is still quite safe, only very small roof falls being encountered. Mineralisation of the fault consists chiefly of barytes, visible in many places along the roof of the level. Fluorspar and calcite were observed at one point only. In searching for lead the "Old Man" stoped the roof in several places, but apparently without success. In many places, the fault plane is filled with clay and slickenside is visible particularly at one spot where it covers the length of a wall from roof to floor. In one or two places barytes occurs as a flatting in the right hand wall, being about 6"ins thick.

After 175 fathoms Old Providence Vein is reached - the object of the level. Turning to the East a level has been driven in the vein for some 20ft. with a small timbered stope in the roof. The vein appears to be from 2 to 3 ft. wide consisting lergely of good quality fluorspar with some calcite. No galena is visible.

Towards the West the vein appears to have been worked to some considerable extent but after some 20ft access to the workings is blocked by a boulder fall which rises for some distance above the level. Water issues from the fall. On the left hand wall, excellent crystals of fluorspar were seen.

Low Level is said to have connected with Providence Mine further up the gill by way of over a mile of workings along Old Providence Vein.

HOOKS BANK VEIN is further upstream than Low Level and is on the other side of the gill. The entrance is somewhat constricted but inside the workings are found to be on two levels, the upper level being largely natural with a 4 fathom winze to the lower workings. The entrance level was driven directly on the vein at the level of a calcite flatting. After a few feet a natural rift at right angles to the vein was struck, being 2 to 3 ft wide and up to 10ft. high. From this rift 11ft. to the left of the vein and parallel to it a thin string has been explored by means of a short level and a shaft which is now flooded. Calcite appears to have been the main mineral in the string.

Just beyond the rift the main vein is stoped up a few feet and a 4 fathom winze leads down to the sole of the workings. From the foot of the winze the workings are accessible for some 14 fathoms back under the entrance towards the gill - in fact at one time the lower workings probably holed to grass - a depression being visible on the gill side at a point corresponding to the run at the end of the stope.

Indeed,near the run,shot holes are visible having been driven from the run towards the winze foot.Along this section of the vein,stopes go up to 20ft. in places.The vein is 6 to 8ft wide at this point the main gangue minerals being fluorspar and calcite,spotted with galena in places. A green mineral was observed and specimens were collected.This mineral has not yet been positively identified but it is thought that it may be a double carbonate of zinc and copper - aurichalcite or rosasite, minerals which have been turning up in many localities.

The workings N.E. from the foot of the winze have been explored fo some 40 fathoms and appear to go beyond this. The vein fluctuates somewhat in width along this section but retains the same mineralogy. Stopes go up to 20ft. or more and good quality fluorspar is visible in substantial quantities. 20 fathoms from the winze a cross cut has been driven for some 5 fathoms into the left hand vein.A few feet beyond this,some extremely tatty timber holds up quite a quantity of deads above a deep winze in the floor on the right hand side.20 fathoms beyond this,a great deal of water issues from the roof.Exploration was not pushed further.

A quick survey was made using the same method as with Low Level, however when it came to drawing out the survey it was found that the bearings of the upper and lower workings on the vein,which were directly above oneanother,differed by 15°;consequently a re-survey is necessary.

As time was becoming short no further work was carried out in the gill.

References: Memoirs of the Geological Survey. Vol.XXVI - Lead and Zinc Ores of Durham,Yorkshire and Derbyshire.

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EMBLETON LEAD MINE ,EMBLETON,CUMBERLAND

N.G.R. 169.306. 1" O.S. Lakeland.

by

J.D.Wildridge.

The objects of the exploration,which was carried out on the 30th. June 1963,was to finish our exploration and survey of the mine and in particular to check:-

(i) The stoping and extent of the stoping.

(ii)To find out what had happened to the third set of levels.

(iii) To descend the final 25ft. shaft.

The exploration party consisted of A.Cannell;M.Cannell;R.Harker;J.Moon; A.R.Nichols;J.C.Wade and myself.

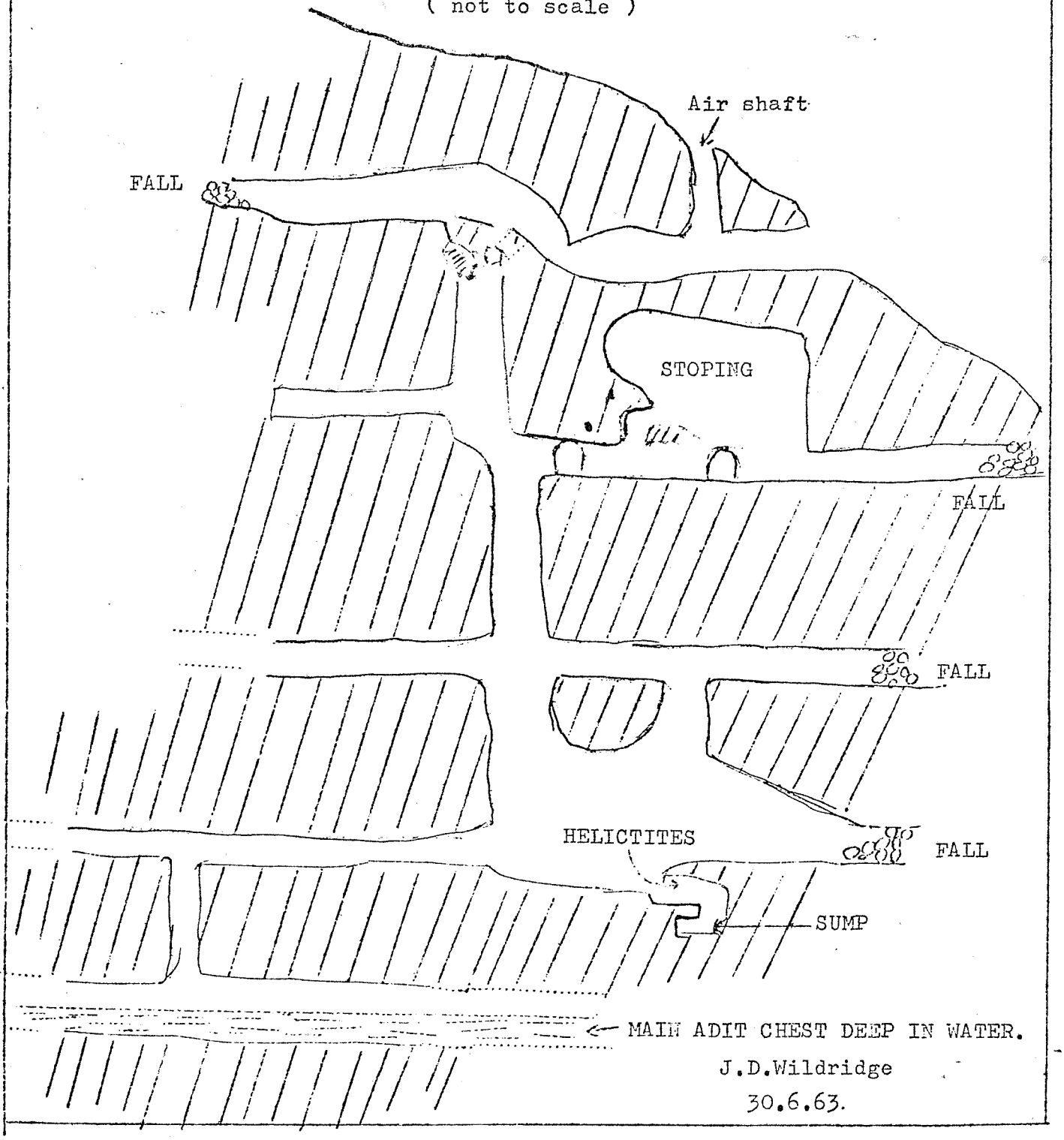
The mine has five sets of levels and access is by the top one.Entry was achieved by descending a 100ft. shaft.This shaft was laddered in two stages and an experimental telephone was used on the top section.

The whole party first descended to the half way point and then proceeded to the bottom where we found a large chamber where we found

EMBLETON MINE.

SECTION ON VEIN

(not to scale)



J.D.Wildridge

30.6.63.

some excellent helictites.

Preparations were made for the descent of the final shaft.The belay being a timber post which we had brought along for the purpose, this was jammed across the level with several of the party leaning on it for extra security.

The author descended first and found himself chest deep in water inn the main adit,the average width of which was 5ft. with a height of approx. 8 feet. A.Cannell then descended only to find out that he could not light a candle - in actual fact he could not get the matches to ignite. This being so the two explorers made a hasty retreat but not before the author had been affected by the bad air. The party returned to the large chamber at the foot of the 100ft. shaft.

R.Harker managed to gain access to the third set of levels which began at about 15ft. above the floor of the large chamber.

Ascent of the 100ft. shaft continued quite smoothly until the last man,J.Moon,was ascending the ladder. A number of deads fell off the head of the shaft and struck him dislocating his knee cap. Fortunately everyone realised the seriousness of the situation and the speed and efficiency with which the injured man was brought to the surface was a fitting reward for the skill and calmness of those present.

The result of our efforts was:-

(i) The stoping was found to be as thought on first descent.

(ii)The third set of levels was found to extend 40 ft.back towards the fellside.

(iii) The final shaft was descended and was found to lead to the main adit,the entrance to which can be seen blocked in the field outside. The level is chest deep in water and has very little air. Further explorations of this level are not possible except with proper breathing apparatus.

(iv) The telephone consisting of a microphone/earphone worked very well.

A rough sketch of a section of the mine is given on the accompanying page.

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MINES OF THE NENTHEAD - WEARDALE HEAD DISTRICT

by

A.E. CANNELL.

The undermentioned mines were explored during Easter 1963 from a camp set up by the side of Killhope Burn at the head of Weardale.

GALLOWAY LEVEL. This level is negotiable for 70 yards to a massive roof collapse.

SCRAITHOLE MINE: Deep water barred progress.After one or two hours work at dam building and water channelling the level was lowered sufficiently to allow comfortable access.Explored for 300 yards to a light roof fall.

BROWNLEY HILL HORSE LEVEL: Main level followed for 400yards to the intersection with Wellgill vein. Wellgill vein explored in a N.N.W. direction. The condition of the level in parts leaves much to be desired and the presence of much debris in the form of tub-drawing wire, rollers,etc. ,hinders progress.The level is however negotiable as far as the hopper and man-way down to Nentsberry Haggs Level.A return was made to the extensive flats to the east.

One or two of these prove rather awkward of access and require shaft traverses.Implements remain in situ and extraordinary fine specimens of ore were obtained.

Before reversing the journey,the main Brownley Hill vein was entered and explored as far as deep water. The condition of the level is fair.

SWINHOPE MINE: A mine only recently closed.Entrance is made down a steep incline shaft complete with haulage gear serving as both ore-drawer and man-rider.The shaft descends to a depth of about 200ft. and gives access to North Vein and Williams' vein.At the far end of Williams' vein,a ladder rise over an ore hopper leads to the vein forehead at about 218 yards.Lines of tubs hinder progress to the hopper.Fine specimens of sphalerite ore are available in the forehead.

Back in the main diesel-way,equipment lies at random,including a diesel engine.Air trunking of large diameter gave rise to caution especially in view of worsening air,so it was decided to make a return after only some 560 yards had been traversed. On the return journey,some 500 yards of side workings were explored.Lead veins are still in situ and offer excellent samples.

SWINHOPE HORSE LEVEL: Time unfortunately forbade all but a cursory inspection. The masonry has been kept in very good repair and there is little doubt that the level warrants a further visit.

AYLEBURN MINE and CAVE: This level was driven for 1200ft and at the far end a small pocketry working can be explored.Water some 2'6" deep lies throughout the mine.At 500ft. from the portal,Ayle Burn vein itself is crossed and at this point a rather complex little series of passages can be entered.The upper ones connect with the lower ones by means of a narrow shaft which can be climbed with care.The whole ends in a crumbly shale fault zone.

At the entrance to this set of workings,an awkward and rather slippery rise leads into a series of natural caverns.The system is somewhat constricted in parts and progress is made less pleasant by the presence of a surprisingly large stream. Upstream,after climbing a waterfall,a huge ruckle of boulders bars the way.Downstream,the roof lowers until the passage achieves the dimentions of a bedding plane in which the stream occupies most of the available space. Eventually,it becomes no longer negotiable. The position of the cave is given as N.G.R. NY724.497;altitude 1080ft. O.D.

-----oOo-----

St. HUBERT MINE, near HOLDEN, BOWLAND.

REPORT BY

A.E. and M. CANNELL.

National Grid Reference: SD 750493. Altitude: 630 ft. O.D. Date: 2.8.1963

The mine worked a small south easterly vein east of Harrop Fold, a farm situated on the lower slopes of Harrop Fell. The vein is associated with a fault approximately one mile long, the mineralised portion being at the east end thereof.

The fault, downthrowing south west, passes through Warley Wise Grit, through d^4 material and into d^3 - d^4 limestone. The limestone, an argillaceous one containing C. Malhamense, dips 10° S.W.

The vein crosses Far Field Brook, the main eastern branch of Fell Brook and the adit was within a few yards of the stream. The visible remains are few and are difficult to locate. On the western side of the stream, a small patch of "bellond" ground marks the site of the waste heap, the size of which supports the contention that the mine was only small. It consists mainly of thin black shale and no trace of mineral could be found though both lead and barytes are said to have been present on the vein.

The adit is not now traceable though its position can be estimated. From it, a line of small shakes and rabbit runs trend south - eastwards for some distance before turning rather more to the south. Beyond and on the other side of a stone wall, a fenced shaft is the only other surface remnant. The shaft is blocked by well-rusted drums, sheet metal, etc.

Since rather provocative glimpses of 'blackness' were available this upper layer was removed and another and more substantial consolidated layer was found to lie some 10 to 15' feet below it. The shaft, offers no entrance and, in any event, the black shale spoil suggests that the ground was so poor that the level would not be negotiable for very far at this date.

The few records available reveal that the level originally ran for about 50 fathoms E.15° S from the brook and then turned E.40°S. for a further 68 fathoms. The shaft would thus seem to have been close to the end of the mine.

The opinion at that time was that the rocks more likely to be productive (though by no means certain) were the hard sanstones of the lower Yoredale Grit some 250feet below thr black shales and thus quite uneconomical.

Local enquiry revealed that the level had been re-opened approximately ten years ago by a man named Dugdale together with one assistant . No more than " a few shovelfull" of material were removed from the level.

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THE SCORDALE MINES, APPLEBY, WESTMORLAND.

REPORT BY

A.E. CANNELL.

The visit, at Whitsuntide 1963, was a three day one , the intention

being to make an extensive exploration of the mines in this valley. A camp site was set up at the beck junction below Swindale Edge.

There were, in all, 28 mine entrances in Scordale and, for ease of reference, these have been numbered from the most westerly of the Murton mines, round in a "U" shaped tour, ending at the Amber Hill mines on the south side of the valley. The results of the inspection are given below. Surveys and geological details are omitted, these being available in the Geology of the Northern Pennine Orefield by K.C.Dunham. (Vol.1.)

(1-3) MASON'S HOLE LEVELS:

There appeared to be three levels associated with this huge opencast working on the northern side of the valley. They were not inspected due to lack of time. A further visit is required not only to investigate them but to verify the number.

(4) NORTH VEIN, MASON'S HOLE ENTRANCE:

Not investigated due to lack of time.

(5) HARDSHINS LEVEL:

Located and partly explored on an earlier occasion, this level was now more fully dealt with. No way into the west end of the flat from the main level could be found. The remainder of the flat is negotiable in its entirety and makes a fine exploration. The complexity is at first rather confusing until an overall picture has been obtained. The main and lowest level connects two deep shafts, one centrally palced, the other at the eastern extremity. The latter appears to have been the main connection with Hardside Low Level referred to later, the former being smaller and less used.

Between the two, a connection with Curley Level, also refered to later can be made and, indeed, used as an exit if necessary. The condition of the main flat is relatively good though a certain amount of care with understopping and stacked deads is required. Much evidence of mineralisation is available.

(6) MURTON HORSE LEVEL:

The entrance was dug out and made safe only to find that a total collapse has occured some 12 feet further in.

(7) CURLY LEVEL:

A most unpleasant entrance passage with some dubious rock in parts gives access to a rather wearisome and wet crawl leading to a shaft connecting with Hardshins Flat. Onwards, a long crawl leads to the Witherite Shake, the most northerly working. At the entrance to this crawl a shaft descends into an east-west passage. To the east, after passing through shattered ground, it ends in a working chamber. Westwards, it continues to a deep shaft descending into Hardside Low Level (q.v.). Shortly after this point, the level ends in collapsed ground. A side passage acts as a lead in for the shaft.

(8). HARDSIDE HIGH LEVEL:

Not explored due to lack of time.

(9) HARDSIDE LOW LEVEL:

Entrance walled-up and has a dramatic message on its outer face intended to deter potential explorers. Despite divided

opinion on its stability,it was fully explored.The connection with Hurton Fell North Vein is guarded by mud several feet deep.Westward,the level is negotiable beyond three rises i.e.,those referred to in describing Hardshins and Curly levels (q.v.). The air is somewhat thin and here and there tend to be delicate.

(10) WHARTON'S LEVEL:

This had to be unearthed,Entry quickly reveals that a massive collapse has occured as the result of timber failure.

(11) HILTON HORSE LEVEL:

Entrance walled up.Dismantling is easy,however, and one gains access to what must be one of the finest examples of arching in the Northern Pennines.Unfortunately,just beyond where the stonework ends,a collapse brings all progress to an end.The collapse would probably dig out quite easily.

(12) WILSON'S LOW LEVEL:

After excavating the entrance,this level was found to end in a collapse at about 10ft.

(13) SMIDDY LIMESTONE LEVEL:

Entrance excavated.Level ends at 20 feet in a collapse.

(14) 1472' LEVEL:

Entrance a total collapse.

(15) JACQUES LEVEL:

A very high roofed level with a walled-up entrance. Inside,a long gloomy level leads to poor ground.The mine does not appear to have been very productive.

(16) BROWN'S LEVEL:

Entrance a total collapse.

(17) MELMERBY SCAR LIMESTONE LEVEL:

Not explored due to lack of time.

(18) UN-NAMED LEVEL:

Not explored due to lack of time.

(19) MIDDLE LEVEL:

A most interesting mine of considerable complexity. The entrance gives way,by means of a shaft traverse,to a flat of handsome proportions.All workings are accessible and in good condition.An interesting feature is the fact that much of the ore is in a matrix of clay,furthermore,considerable reserves remain in situ. At the far end of the flat,daylight can be seen at Dowscar High Level (q.v.).

(20) DOWSCAR HIGH LEVEL:

Walled-up and partly collapsed. Connects with Middle Level (q.v.).

(21) DOWSCAR MIDDLE LEVEL:

Entrance blocked by a much disintegrated sheep

and thus left until better times.

(22) DOWSCAR LOW LEVEL:

Completely blocked.

(23) STOW GILL EAST LEVEL:

Blocked - but with much hard work might be opened up.

(24) STOW GILL WEST LEVEL:

A narrow entrance leads to a level much infilled with mud.The mud becomes steadily deeper and the air space less. The walls are in medium condition only.

(25) WHIN SILL LEVEL:

Not explored due to lack of time.

(26) AMBER HILL LEVEL,LOWER.

A timbered entrance,now fully collapsed.

(27) AMBER HILL LEVEL,UPPER:

After excavation,entry revealed a level in extremely delicate condition - probably a hairsbreadth from collapse.A chaos of timbers.Explored as far as a collapse.

(28) LOWFIELD HUSH LEVEL:

Merely a pocket working in the face of the scar. An especially fine vantage point.

------oOo------

SWALEDALE MINES.

Report by

A.E.CANNELL .

The following notes are based on observations made during a visit to the mines in August 1963. A base camp was set up at Barrass End Ford.

HARD LEVEL:

Carries a sizeable stream.Explored for approximately 244 yards to a moderate-sized roof collapse.On the moor top above,however,a negotiable shaft of no great depth appears to lead into the level beyond the collapse.

ROGER LEVEL:

On the south west side of the stream a rather rickety entrance leads into a narrow level containing mud.An investigation of the surface revealed that the collapse corresponds to a section of very poor ground on the edge of the stream.

REYNOLDSON TRIAL:

Merely a small trial by the side of the track to Level House and almost directly underneath the main Reynoldsons level.Its entrance is small and well hidden.

BRANDY BOTTLE MINE:

The main incline was descended to the half way take-off level and an exploration was carried out.The forward level enters extremely unstable ground at about 150 yards from the junction and the south branch,some 80 yards long,fares no better.

The main incline continues down from the haulage shaft at a slightly steeper angle for another 100 fathoms before ending at a deep pool.To the left the water quickly meets the roof.Forward,it gives access to the vein in about 12 yards.Unfortunately,progress is stopped at 5 yards by a roof fall.

Before returning up the incline,an estimate of the depth was made, this,in the absence of instrumentation,was made out to be approximately 250 feet.

On the way out,two rather complex roof systems were investigeted. The larger of the two eventually communicated with the rise above the main haulage shaft and the other,in addition to being parallel to the main incline also communicated with the second incline. The way through, however,is now blocked by a roof fall.The second incline can be descended from daylight for 46 yards to the other side of this roof fall.

COGDEN GILL LEVEL:

Waded for 165 yards to a roof fall.

GRINTON HOW MINE:

Contains deep water.An attempt to lower it by dams and diversion channels was only partly successful.Nevertheless,the journey of 192 yards to the roof fall which marks the end was improved to some extent.Walls in the final 80 yards are in very poor condition.

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LITTLE HOLE, HILTON FELL, Nr. APPLEBY,WESTMORLAND.

by

Joan G.Guthrie and Frank Hall.

First explored 1st.June 1963. Length approx. 60 ft. Location - N.G.R. NY 764236.

Location:

On right hand side of floor of a dry valley above largest waterfall at head of Hilton Beck,about half a mile north of Amber Hill Mines.Entrance is in a stream bed besides a cairn built on a large flat rock. A large quantity of large boulders had to be removed inorder to gain entrance.

Entrance:

Low,about 9"high and 3 to 4 ft. wide .Crawl in mud and rock of stream bed,then ease right over flattish boulders. Roof higher inside rising to 2ft. to 2ft. 6ins. with passage 4'to 5' wide.

Roof: Flat.

Floor: Slight slope to east (right hand side),mainly covered in coarse sand and small pebbles.

Passage:Only one passage, divided after about 40feet by a thin rock diaphragm which extends from floor to roof. Water flows to the left of this.Sand on the right hand side. Wet bedding-plane crawl for about 60' which ends in boulders on left (bed of dry valley above). Passage too low on right. No formations,limestone only thinly bedded.

A survey was not attempted. The accompanying rough sketch map however serves to give a general picture of the cave and surroundings.

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THE GREAT CAVE OF FRANCE.

by

R.A.Kershaw.

FOUNDER MEMBER AND HONORARY SECRETARY OF THE NORTHERN CAVE CLUB.

As long as I could remember I had wanted to go to Padirac;one of my earliest caving memories was of listening eagerly to a caver who had made the trip that summer,and was anxious to relate the wonders he had seen. Ipoved a good audience,and of course I had only to skim the surface of speleological literature to come across almost lyrical accounts of the cave.

There is one major hazard for the English potholer at Padirac;I was warned of it before I went and I now pass on the sad facts of this probably unsurmountable problem to all others who may venture there. After Padirac and its sister cave,Lacave,it will be a long time before one adjusts oneself to,what is by comparison,the microscopic scale of English caves.Even the ardent 'dyed in the wool' potholer will start doubting his reasons for wanting to enter our small constricted caves, to crawl so far,to see so little.

For all I had read so much about Padirac,the cave itself that is,I still had little idea as to what its outside location would be like.A small,insignificant hut ? Something impressive ? My imagination rather favoured the latter,but even my imagination could not have possibly forseen what it was really like. You see,the attitude towards caves and cavers in France is totally different from the British one,and nowhere more clearly than Padirac is this reflected. The great caves are a national institution.They are to France what Niagara is the the United States of America,and sometime during their lives,most Frenchmen visit them. As far as I could see as we motored towards the cave,they had all chosen the same day as we had - the road was packed. Coming over a small hill we saw the village,and I was taken aback,to say the least.One expected commercialisation,but this!! Hotels,Restaurants,Souvenir shops, Filling stations were all there by the score. However the doubts which I had were soon dispelled by the excitement which overcame me. We were walking towards the big impressive building which seemed to be the hub of the village,when suddenly,quite unexpectedly,the hole opened up

PADIRAC

THE GREAT STAIRCASE.

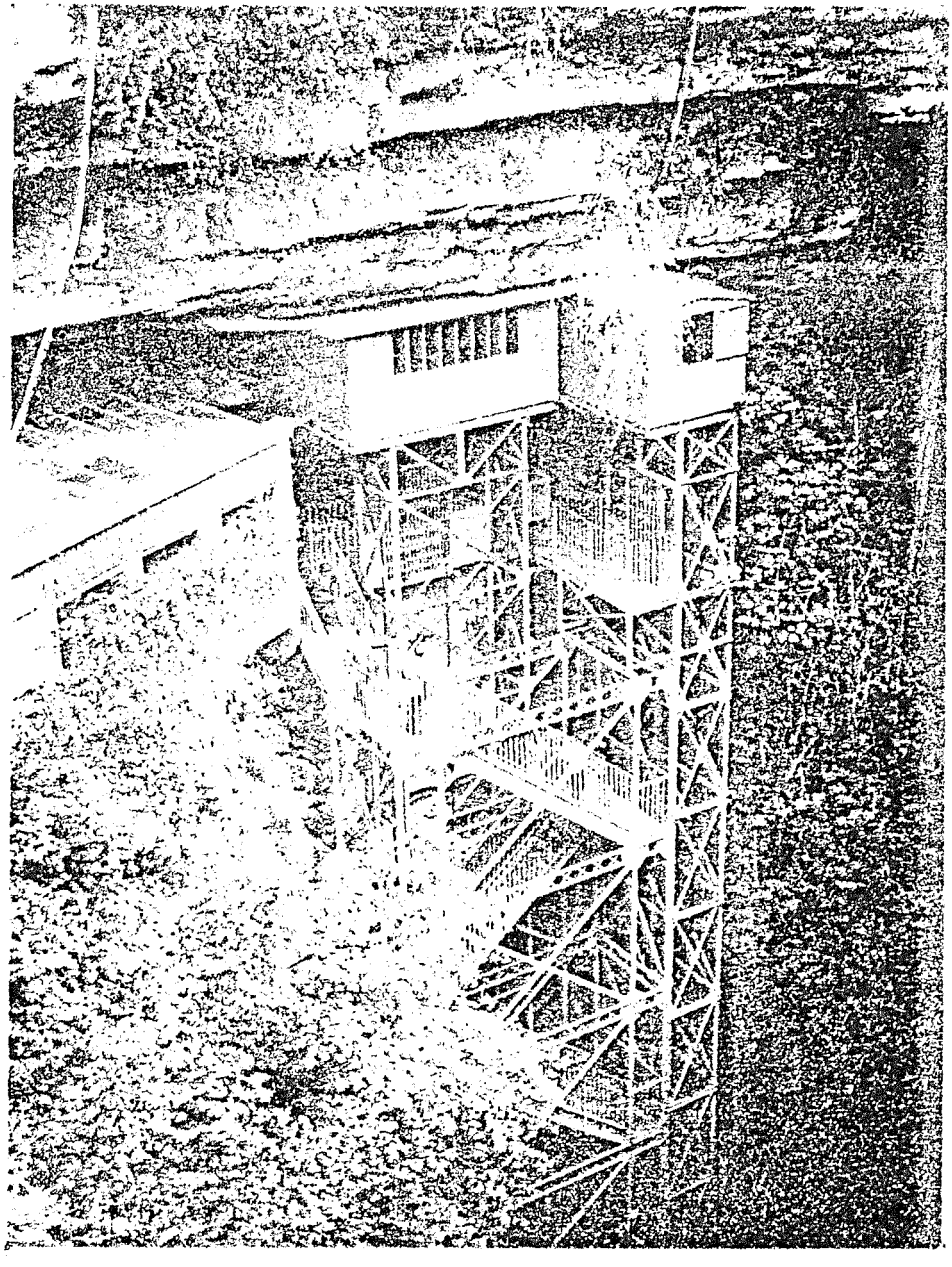

photo: R.A.Kershaw.

before us. A dozen Alum Pots rolled into one,circular in shape. It seemed to be about two hundred and fifty feet deep,the famous 'Great Staircase' looking very impressive as it stretched away into the depths. About fifty feet down I saw what appeared to be a greenhouse projecting from a ledge, this,on closer examination however,turned out to be a restaurant.

We entered the big building,and bought our tickets at a cinema-style paybox and then looked round - the tourist was certainly well catered for, there was a post office,large writing room where one could sit down and address ones postcards in comfort and still more souvenir shops.

We descended to the first level by a very elegant lift which would not have disgraced many a departmental store,and emerged onto the same ledge as the restaurant.From here one caneither go on by another lift,or by the staircase - we chose the latter. The hole looked even bigger from the bottom than it did from the top. From here the way lay down more steps,into what I suppose they called a passage - a passage easily as high and in parts as wide as Gaping Gill main chamber.There were many formations along this passage,quite good ones we thought,but no-one but ourselves seemed to show any interest in them. After about a quarter of a mile the roof shot up even higher,and we found ourselves at something which seemed to be a cross betweer a harbour and a bus station. Metal barriers divided the cave into a dozen or more aisles,into each of which cave attendants carefully shepherded thirty people to wait for the boat that would ferry them along the deep still canal that lay ahead.

At Padirac,they have a guide system completely alien to the one we are used to in England.A staff of perhaps two hundred,in British Railway style uniforms are set at strategic intervals along the cave.As it seems one is expected to tip at least half of these,it is advisable to have a large stock of five cent pieces available,otherwise it gets rather expensive.

The boat which we were waiting for discharged its giggling cargo,our party hurriedly took their places,and soon we were off,gondola fashion, on our way. Apart from the novelity of the ride the height of the roof, the trip.was pretty uneventful,until rounding a corner insight of the next harbour a blinding flash came forth - on a ledge,surrounded by flashlights was a photographer. He was grinning at what had obviously frightened the daylights out of us. Needless to say,the photographs could be purchased at what they thought was a very reasonable price - ten shillings each.

We climbed out of the boat and wereassigned a guide. Here at last the fabled Padirac began,and for what lay ahead I could have accepted any amount of commercialisation as quiet as a mouse.

There were so many wonderful formations that they dazzled.So much so that I could not put them in the correct order in which I saw them. The walls were dripping with calcite in every conceivable shape - there were collonades six feet in girth and two hundred feet high,magnificent stalagmite cascades,tall towering wedding cake formations and hundreds of thousands of delicate straws. Finally we came to the most stupendous

underground sight I have ever seen,a great chamber shooting up to terrific heights,the guide said seven hundred feet,I would say perhaps three to four hundred feet. Somehow lights had been placed at the very top,so every detail of this awe-inspiring place was made clear. From roof to floor,the whole chamber was adorned with beautiful calcite decorations. The party was silent;it seemed like sacrilage,even to these people who were just ordinary tourists,to make a noise in this wonderful place.

In another small chamber quite near this hall is a marble bust of Martel,who first descended Padirac in the eighteen hundreds. It was a simple thing,but it made a great impression upon me,for it seemed fitting that the 'father of speleology' should be permanently remembered in this,the King of Potholes.

Beyond the show cave section Padirac is supposed to continue for a further sixteen miles to Lacave,another show cave. We made enquiries and as far as we could tell,the through trip has never been made. Norbert Casteret,who has a big financial interest in both Padirac and Lacave, was we heard planning an expedition in the near future.

Whilst in the area,one should visit Lacave. It contains a wealth of formations and like Padirac is well worth seeing. On this occasion one enters the system on an electric train which travels for over a mile along a blasted passage before the cave itself begins.

The Dordogne valley,in which these caves lie, is very beautiful, and is adorned with an abundance of limestone cliffs which I doubt could be equalled anywhere. The area is best visited from the pleasant town of Souillac which lies approximately five hundred kilometres south of Paris on the main N.20 road. From Souillac too the cave paintings of Les Eyzies and Lascaux are of easy access.

I hope this little article will whet the appetite of some of you enough to make you want to go and see for yourselves,but remember,try and leave the great caves' influence with the smell of Gauloises and French bread,on the other side of the Channel,or you will find your next venture into a British cave,to say the least,disappointing.

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ALUM POT AREA FIELD REPORT.

D.T.Richardson,A.R.I.C.

Three official and one un-official meet have been held in the area since the publication of our May Newsletter.

The results of the investigations have been very rewarding and a considerable amount of work has been carried out - surface surveys, underground surveys,water analyses and water tracing.

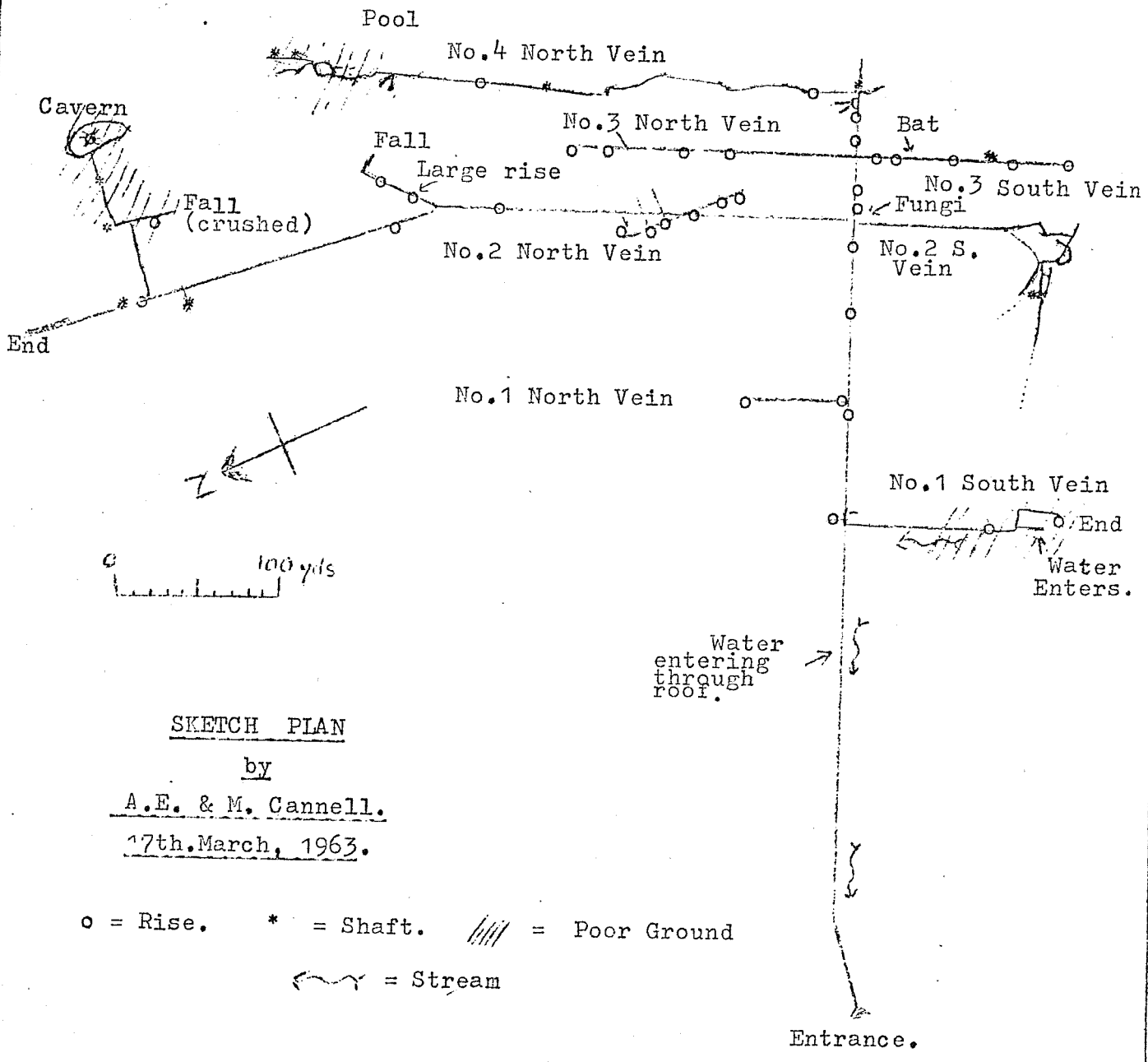
Some twenty three water samples have been analysed and the results are extremely interesting particularly when incorporated on a map showing both the underground and surface water courses.

It is intended not to give a detdiled report at this point because

BUCKDEN GAVEL MINE.

Altitude: 1680 ft. O.D.

N.G.R. : SD 955.782



SKETCH PLAN

by

A.E. & M. Cannell.

17th.March, 1963.

o = Rise. * = Shaft. //// = Poor Ground

~~~ = Stream
~~~

we feel that a series of disjointed accounts would not help to give the correct overall picture. It is hoped that by the time our next Newsletter is ready we will be ina a position to give a comprehensive report accompanied by surveys,maps and details of water analyses.

Finally may I add that we could do with a lot more assistance with this project - there is a lot to do and there is no doubt at all that our efforts will be well rewarded. We are prepared to introduce extra meets inorder to assist the completion of the work. Anyone interested should in the first place contact me.

------oOo------

BUCKDEN GAVEL MINE FIELD REPORT.

J.C.Wade & D.T.Richardson,A.R.I.C.

The Society has devoted five meets to the mine each with a varying degree of satisfaction.

We have now explored all the shafts descending below the crosscut level with the exception of one shaft in the flat working to the extreme end of No.4 North Vein (the furthest point from the entrance).This shaft was observed on June 23rd.,1963 but was left alone because of its apparant dangerous condition.On August 11th. 1963 our objective was to ladder and descend two shafts in No.2 North Vein for which we had to take in a belay.The shafts were descended but were of little interest being in sound rock and less deep than anticipated - 28feet and 22 feet respectively. The deeper shaft was traversed to a large chamber with an approximately flat roof and a deep hole in its floor.The walls of this chamber were of shattered rock or stacked deads in precarious attitudes - being so exploration was not considered. A rise in the vein near this chamber was climbed but this ended in shattered ground.

On our return towards the entrance attempts were made to climb several rises and we were surprised to find we had not attempted to climb a rise situated halfway along No.2 North Vein although it was noted on our plan. It was relatively easy to climb and proved quite exte nsive. Trials had been driven in both directions at about 20 feet above the crosscut level and one passage lead off at the top of the rise some 45 feet above the crosscut level. The two lower trials were explored but we did not manage to enter the upper passage.

We have remarked about the fungus observed in the mine in an earlier Newsletter.There is now no doubt that the fungus is the Dry Rot fungus. It is present in old timbers and has obviously travelled (as is typical of this fungus) along the passage in search of new food supplies. The accompanying photograph shows the spread very well indeed.

Of the bat seen in the mine we have seen no further evidence and it may well be that it was an isolated specimen.It is true however that we have not made a deliberate search - so the matter remains to be cleared up.

There is very little water in the mine. The water flowing out of mine entrance originates in a limestone fissure in No.1 South Vein.In

BUCKDEN GAVEL MINE.

photos:

by

A. E. Cunnell.

Timbering in poorer section.

Dry Rot Fungus in passage.

analysing the water for manganese and iron - the other components of ankerite. "

A.E.C.

As will be seen from the analysis of the waters given in the accompanying table this has in fact been carried out. The sulphate content of the water is relatively low compared to its magnesium content, the iron content is average and no traces of manganese could be detected. In view of this it seem doubtful if the ankerite theory is the correct explanation in this case particularly if one remembers that the water has a low sulphate content. The water is however a good example of a magnesium-limestone water. No attempt has however been made to look for epsomite.

ANALYSIS OF SAMPLES OF WATER COLLECTED 23rd.JUNE, 1963, FROM BUCKDEN GAVEL MINE AND THE IMMEDIATE VICINITY OF THE MINE.

Location.	Surface Spring Near Mine Entrance.	Water Entering Mine in No.1 S. Vein.	Water Spouting From Roof in Cross-Cut.	Pool in Far North Vein.
N.G.R. SD.	9558.7809	9554.7816	9554.7816	9554.7816
Altitude O.D.	2025'	1700'	1700'	1700'
Total Hardness (as $CaCO_3$)	38.3	86.3	119.6	348.0
Temporary Hardness (")	30.0	70.0	111.0	335.0
Permanent Hardness (")	8.3	16.3	8.6	13.9
Calcium salts (")	30.2	68.5	89.0	122.7
Magnesium salts (as $MgCO_3$)	6.7	15.0	25.5	189.8
Iron (as Fe.)	0.04	< 0.04	0.08	< 0.04
Manganese (as Mn)	Nil	Nil.	Nil	Nil
Chlorides (as NaCl)	17.0	16.0	16.0	15.0
Sulphates (as SO_3)	10.5	6.8	9.6	19.4
Free Carbon dioxide (as CO_2)	Nil	2.0	3.0	Nil.
p.H.	8.1	7.9	8.2	9.0
Water Temperature °C.	9°	6°	7°	7°
Air Temperature. °C.	12.5°	6°	8°	8°

Results in milligrammes per litre (parts per million)

Analyses carried out by D.T.Richardson, A.R.I.C.

continued/

Analysis of Samples of Water from Buckden Gavel Mine, etc. (continued)

NOTES:

Asuming that the water, before it enters the mine workings, has a composition similar to that of the surface spring (N.G.R. SD.9585.7809) it is obvious that both the running waters which appear in the mine have picked up considerable amounts of hardness salts, the water spouting through the roof of the crosscut roof having picked up more hardness salts than the water appearing in the limestone fissure in No.1 South Vein.

The water from the pool at the end of the Far North Vein contains an unusual magnesium and calcium content, and in this respect is quite different from the other waters in the mine. The exact reason for this is not known but theories have been put forward.

All the waters in the mine had temperatures in the 6 to 7°C range. There is no analytical evidence to show that the waters have come in contact with degenerating ankerite, manganese being absent, neither is the sulphate content of any of the waters unusually high.

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ANALYSIS OF SPRING, STREAM AND RIVER WATERS FROM THE BUCKDEN - CRAY - HUBBERHOLME AREA, YORKSHIRE.

D.T.Richardson, A.R.I.C.

The accompanying table gives the chemical analyses of seven samples of water collected on the 5th. May 1963 and one sample of water collected 23rd. June 1963 - the latter being included in the table for comparison purposes.

Omitting for the moment the water taken from the small stream near the entrance to Buckden Gavel Mine (Sample A).

The River Wharfe water (Sample B) has a much lower hardness than the remainder of the waters but shows a high alkalinity (p.H.8.2). The lower hardness is probably due t a dilution effect as it must be remembered the water has travelled some considerable distance before reaching Hubberholme. The remaining waters have remarkably similar compositions considering that they come from vastly different zones in the area-all are slightly hard waters and all show a relatively high degree of alkalinity the p.H. , except in one case, being above 8.0.

It is interesting to note the difference in composition of the water from the small stream near the entrance of Buckden Gavel Mine (Sample A) which originates as a spring some 300 yards above the mine at an altitude of 2025 ft. O.D.

Whereas it is true to say that this spring originates on a different face of Buckden Pike to the springs represented by samples, C, D, and E it is considered that this difference may be explained as follows: that this water does not travel as far underground before appearing on the surface, whereas the remainder of the waters have had to penetrate a greater depth of limestone before surfacing.

ANALYSIS OF WATERS FROM THE BUCKDEN - CRAY -HUBBERHOLME AREA.

Source	Stream.	River	Spring	Spring	Stream	Stream	Spring	Stream.
Sample Number	A	B	C	D	E	F	G	H
N.G.R. SD.	9554. 7816	9268. 7829	9562. 8045	9530. 8041	9543 7943	9337 7851	9321 7838	9437. 7736
Altitude O.D.	1700'	765'	1500'	1450'	1725'	775'	750'	750'
Total Hard's ($CaCO_3$)	38.3	79.2	127.0	167.0	116.8	130.4	148.0	108.8
Temp. Hardn's($CaCO_3$)	30.0	60.0	103.0	143.0	96.0	112.0	122.0	88.0
Perm.Hardn's ($CaCO_3$)	8.3	19.2	24.0	24.0	20.8	18.4	26.0	20.8
Calcium (as $CaCO_3$)	30.2	67.9	97.6	121.5	78.8	103.0	128.0	92.0
Magnesium (as $MgCO_3$)	6.7	9.0	23.8	36.7	30.9	21.9	16.1	13.5
Manganese (as Mn)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Chlorides (as NaCl)	17.0	S.Tr.	S.Tr.	S.Tr.	S.Tr.	Tr.	Tr.	S.Tr.
Free CO_2.	Nil	Nil	1.5	Nil	Nil	Nil	1.5	Nil.
p.H.	8.2	8.2	8.0	8.3	8.4	8.4	7.6	8.4
Temperature °C.		10.6°	5.5°	5.5°	5.5°	9.4°	7.2°	10.0°

Results in milligrammes per litre (parts per million)

Analyses by D.T.Richardson,A.R.I.C.

A. Stream Near Entrance to Buckden Gavel Mine.Originates at 2025' O.D.
B. River Wharfe at Hubberholme.
C. Spring Rising on Dale Head Scar.
D. Spring Rising on Dale Head Scar.
E. Chew Close Gill. 650ft. from source of rising.
F. Combined Waters of Crook Gill and Cray Gill Stream.
G. Spring at Haw Ings.
H. Buckden Beck immediately behind Inn.

SYMBOLS: S.Tr. = Slight Trace. Tr. = Trace.

The biologists amongst our ranks may well find that these alkaline springs will prove to be successful hunting grounds, there is little doubt that plankton nets placed in these risings would soon show whether or not the time was being well spent.

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REPORT BY CAVING OFFICER.

W. Emmott.

Members have, over the last few months, made the following trips. Nothing much in the way of research has been carried out during these trips, nevertheless many took the opportunity to indulge in photography.

19th. May. Sell Gill; Jackdaw Hole and Cross Pot were descended on a pleasant day spent in the Horton-in-Ribblesdale area.

28th. April. We had intended to tackle Flood Entrance Pot, however the day was very foggy and the party got lost on the fells. As a consequence there was only enough time left to have a look in Bar Pot.

16th. June Marble Steps Pot was bottomed.

28th. July Easegill Caverns. The first of our meets on Casterton Fell since the formation of the Council of Northern Caving Clubs.

9th. August Members who found themselves at Ingleton were called out at 10.30 p.m. to assist in the rescue of two youths from Marble Steps Pot. The youths who were exhausted were finally brought to the surface at about 2.30 a.m.

17 and 18th. August. Douk Cave, Gunnerfleet Cave, Heron Pot and Slanting Caves in Kingsdale. These descents followed a very wet weekend. Dent Cave was flooded and coud only be entered for a few yards, Gunnerfleet on the other hand was surprisingly dry. Heron Pot was in flood, but a branch passage in the upper part which we had not noticed before was reasonably dry, and the narrow part halfway through, that was found to be silted up last year was cleared and passed once more.

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L I B R A R Y

ADDITIONS TO THE LIBRARY SINCE MAY 1963.

LIBRARIAN: Mrs. Mary Wood, B.A., 12, Westville Avenue, Ilkley, Yorkshire.

The Librarian wishes it to be known that all books and periodicals belonging to the Society are now housed at her home address at Ilkley.

This list of books and periodicals in the Society Library supplies any omissions in the previously published lists and also gives additions to the Library since the publication of the May Newsletter - Volume 1. Number 2. New additions are marked *.

LIBRARY LIST (continued)

SECTION A (i). Books about Caves.

16. * Cave Deposits and Palaeoclimatology. Gordon T.Warwick,M.B.E., B.Sc.,Ph.D. 1961.

SECTION A (ii) Books about Mines.

11. * Calendar of Camborne School of Metalliferous Mining. 1960-62.

SECTION B. JOURNALS,&c. of OTHER CLUBS.

Section B.(i). Cave Research Group of Great Britain.

2. Newsletter 1960.
4. Occasional Publication No.6. 1962. The Lapiaz Superieure du Plas Segoune. J.C.Knight.
14. * Occasional Publication No.7. 1962. Some Cave Accident Statistics. David E.Leitch.

Section B.(iii). Derbyshire Caving Club (Formerly Orpheus C.C.)

3. Newsletters 1961.
4. Newsletters 1962

Section B.(viii) National Speleological Society of America.

1. Bulletin 1957. (Caves abroad only).

Section B.(ix) Northern Exploration Group.

1 - 4 Newsletters

Section B. (x). Peak District Mines Historical Society.

8. * Bulletin. May 1963.
9. * Newsletter Number 11. 5th. June 1963.

Section B (xii) White Rose Pothole Club.

2 - 8 Newsletters June 1962 - March 1963.
9 -12 * Newsletters April 1963 - July 1963.

Section B.(xiii) The Cave Diving Group.

2. * Lettre to Members of the Cave Diving Group February 1962.

Section B.(xv) Bolton Speleo Club.

1. * Newsletter No.5 March 1963.

Section B. (xvi). Pengelly Cave Research Centre.

1. * Newsletter Number 1. May 1963.
This is accompanied by a leaflet explaining the objects of the Association of the William Pengelly Cave -Research Centre. Also a leaflet giving contents of the new journal of the Association to be published early in 1964.

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SECTION D. MISCELLANEOUS.

Section D (iii) A Very Miscellaneous Section including publications in Spanish sent from Cuba by Dr.Antonio Nunez Jimenez and other books of general interest;

1. Teach Yourself Typewriting.
3. Pamphlet on Institut Francais du Royaume Uni.
4. INRA (Spanish) Sent by Sr.Nunez Jimenez.
5. Un ano de Reforma Agraria. Sr.Nunez Jimenez.
9. The Observers Book of Ferns.
10. Informe al Pueblo. Antonio Nunez Jimenez. INRA. May 1961.
11. 20 Years Exploring Cuba. Antonio Nunez Jimenez 1961.
14. The Observer's Book of Common Fungi.
15. Cuba. (Magazine containing article on Geyser Stalagmites by Antonio Nunez Jimenez 1962.)
17. Green Tracks on the Pennines. Raistrick 1962.
18. The Pennine Way. Kenneth Oldham 1960.

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CHANGE OF ADDRESS - A.R.Nichols.

Members are asked to make a note of Mr.Nichols new address:-

A.R.Nichols, c/o Lythe House, Grassington, Skipton, Yorkshire.

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