

NEWSLETTER

VOLUME I.

NUMBER 2.

MAY 1963

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Printed and published by :

THE NORTHERN CAVERN and MINE RESEARCH SOCIETY.

Honorary General Secretary: J.C. Wade, 14, Branch Road, Skipton-in-Craven, Yorkshire.

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

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Further copies may be obtained from the

Honorary Newsletter Editor.

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SOCIETY NEWS.

1. CHANGES IN SOCIETY OFFICERS.

(i) Honorary General Secretary: Mr. John Caleb Wade, 14, Branch Road, Skipton-in-Craven, Yorkshire has been elected Honorary General Secretary in place of Mr. D. Platt.

(ii) Honorary Treasurer: Mr. Douglas Turnbull Richardson, 5, Calton Terrace, Carleton Road, Skipton-in-Craven, Yorkshire has been elected Honorary Treasurer in place of Mr. J. C. Wade.

2. NEW APPOINTMENTS: Honorary Newsletter Editor: Mr. Douglas T. Richardson, A.R.I.C., 5, Calton Terrace, Carleton Road, Skipton-in-Craven, Yorkshire has been elected Honorary Newsletter Editor. Members are reminded that this is additional to that of the Honorary Editor - Mr. Robert T. Clough, A.R.I.B.A., F.S.A. (Scot.). Mr. Richardson's duties are strictly limited to the production of Society Newsletters.

3. SOCIETY SYLLABUS for 1963. This revised syllabus replaces the printed meets card which was sent to you in February. The Syllabus caters for organised research work to be carried out in four specified areas and an official organiser has been appointed for each area. Members interested in taking part in these research programmes are advised to contact the respective organisers. Members taking part in these research projects are reminded that although the Society is arranging specified meets to definite areas on certain dates the work being carried out in these areas is not necessarily confined to these dates. On the dates specified the Society will arrange an official meet to the area and it is hoped that members as a whole will come along and take an interest in what is being done.

1963 SYLLABUS.

APR. 28.	ALUM POT AREA.	JULY 21	NO MEET.
MAY 5	BUCKDEN GAVEL MINE.	JULY 28	NO MEET.
MAY 11	CAVE RESEARCH GROUP	AUG. 4	NO MEET.
	NORTHERN MEETING, SETTLE.	AUG. 11	NO MEET.
MAY 12	LAKE DISTRICT MINES.	AUG. 18	NO MEET.
MAY 19	NO MEET.	AUG. 25	NO MEET.
MAY 26	ALUM POT AREA.	SEPT. 1	GRASSINGTON MOOR AREA.
JUNE 2	MURTON MINES, HILTON, Nr.	SEPT. 8	ALUM POT AREA.
	APPLEBY. Camp at Hilton	SEPT. 15	BUCKDEN GAVEL MINE.
JUNE 9	NO MEET.	SEPT. 22	GRASSINGTON MOOR AREA.
JUNE 16	GRASSINGTON MOOR AREA.	SEPT. 29	LAKE DISTRICT MINES.
JUNE 23	BUCKDEN GAVEL MINE.	OCT. 6	NO MEET.
JUNE 30	LAKE DISTRICT MINES.	OCT. 13	ALUM POT AREA.
JULY 7	ALUM POT AREA.	OCT. 20	GRASSINGTON MOOR AREA.
JULY 14	BUCKDEN GAVEL MINE and DOWBER GILL PASSAGE.	OCT. 26	ANNUAL GENERAL MEETING and ANNUAL DINNER.

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ORGANISERS

ALUM POT AREA

D. T. Richardson; 5, Calton Terrace, Carleton Road,
Skipton-in-Craven, Yorkshire.

ORGANISERS (continued).

BUCKDEN GAVEL MINE. J.C.Wade; 14, Branch Road, Skipton-in-Craven, Yks.
GRASSINGTON MOOR AREA. J.M.Dickinson; "Thornlea", 8, Cedar Grove,
Sutton-in-Craven, Keighley, Yorks.
LAKE DISTRICT MINES. J.D.J.Wildridge; "View Point", Ellerbeck Lane,
** Workington, Cumberland.

Members are asked to keep the area organisers fully informed of the work they carry out.

Members please note that the Hull Pot Area Investigation has been deleted from the list.

** One of the Lake District Meets is to be Alston, Nenthead probably the Brownlea Gill Level. Please contact Mr. Wildridge for details.

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MEETING POINTS.

ALUM POT AREA: Parking place in Selside - Alum Pot lane. 11 a.m.
BUCKDEN GAVEL MINE: Opposite Old School House on Cray Road. 10.30 a.m.
GRASSINGTON MOOR AREA: Cafe Royal, Grassington. 11 a.m.

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AREA PROGRAMMES.

ALUM POT AREA. A complete surface survey of the area between Alum Pot and Nick Pot. Survey of all the caves and potholes in this area. A study of the similarities and dissimilarities between the various caves. p.H.; temperatures; water flows; air currents, biological and bacteriological aspects, etc. Photographs of the more interesting phenomena to be taken.

BUCKDEN GAVEL MINE: A complete survey of the mine. Special attention to be paid to fungi and bats in the mine.

GRASSINGTON MOOR AREA: This area is being given the code number P.4. A survey of the mining area of Grassington Moor has now become almost a part of Society history. Started in 1960 it has defied all efforts that have been made to complete the work over the past two years. This year we shall again attempt to finish the survey. For ease of management the area is being divided into three parts:-

P.4. The main area of Grassington Moor.

P.4A. The Yarnbury Mines.

P.4B. Outlying Mines.

The objects of this years programme are as follows:-

- (i) The completion of the surface survey of P.4.
- (ii) The exploration of certain selected underground workings.
- (iii) A survey of the remains of buildings and dressing floors.
- (iv) A complete photographic record of the area.

Due to the general decay of the mine shafts and bearing in mind the

GRASSINGTON MOOR AREA PROGRAMME (Continued)

nature of the ground through which these mines are wrought no attempt will be made to explore any of the deep workings in the area. Exploration will be confined to mines in part P.4B. On the dates set out in the Syllabus underground work will be carried out.

LAKE DISTRICT MINES: No specific programme has been laid down for this area - members are asked to contact Mr. Wildridge for further details.

4. SOCIETY LIBRARY - RETURN of BOOKS. Members are asked to return all Library Books, etc. in their possession to the Honorary Librarian, Mrs. M. Wood, 12, Westville Avenue, Ilkley, Yorks before Monday 17th. June 1963.

5. SOCIETY TACKLE: The Honorary Tackle Manager Mr. A.R. Nichols requests that all Society tackle held by members be returned to the tackle store at the Black Horse Hotel, Grassington before Monday 17th. June 1963.

6. SOCIETY MEETING ROOM: The Society has acquired the use of a room at the Brick Hall Inn, Sheep Street, Skipton-in-Craven, Yorks. This room is to be used for Committee Meetings, lectures, discussions, etc. Defrayment of expenses incurred will be made by charging a minimum of 1/0d per person attending a meeting.

7. FORTHCOMING EVENTS: There will be a discussion group meeting at the Brick Hall Inn, Sheep Street, Skipton-in-Craven on Friday 14th. June. Meeting to commence at 7.00 p.m. You are invited to bring along your surveys, slides etc. The Society Records will be on view. A projector and screen will be available.

8. SOCIETY RECORDS:

(i). Additions to Records:-

Surveys:-

FC.150.	Scoska Cave.	S.C.C.
M.183	Carrock Wulfram Mine.	N.C.&M.R.S. 1961-62.
ZM.184	Driggeth and Sandbeds Mine (Surface Plan).	
FM.185	Goldscope Mine.	N.C.&M.R.S.
M.186	Rampgill and Brownly Gill Mines.	N.C.& M.R.S.
M.187	Goldscope Trial.	N.C.& M.R.S.
FM.188.	Scoredale Mines.	
FM.189	Fowey Consols. Surface.	
FM.190	Dolcoath Mine. Main Lode. (Section)	
FM.191	Dolcoath Mine. Counter Lode. (Section)	
FM.192	Cwm Ystwyth. (Cardiganshire)	

Reduced to Standard 1/2500

FZC. 2.	Lost Johns System.
FZC. 62.	Little Hull Pot.
FZC. 65.	Notts Pot.
FZC. 67.	The Caves of Easegill.
FZC. 68.	Simpsons Pot.
FZC.124.	Ingleborough Cave.

(ii). Records Symbols:-

C = Cave: M = Mine: F = Survey in Record Files: Z = Reduced to 1:2500
S = Reduced to 1:10,560: R as a prefix = Reduced to a scale allowing

(ii) Records Symbols (continued) :-
same to be reproduced on a 10" x 8" sheet.

(iii). Corrections to Records List Published in Newsletter Volume I.
Number 1. February 1963.

For F2M.152 read FZM.152 Bottle Level (Sheet 2. Section and Plan)
For 2C.156 read ZC.156 Threaplands Cave. Cave Diving Group.
For F2M.164 read FZM.164 Coalgrove Beck Mine. 1909 O.S.
For 2M.164 read ZM.164 Coalgrove Beck Mine. 1909 O.S.
For FM. read FM.165. Cockhill Level Section. 1945. Durham.

9. LIST OF MEMBERS AS ON THE 31st. MAY 1963.

HONORARY MEMBERS:

Russel Bayles.	"Teuthill", Frodsham, Warrington.
F.R. Collins.	Low Green, Pateley Bridge, Harrogate, Yorks.
Dr. A. Raistrick, M.Sc.	
F.G.S.	Holme Croft, Linton, Skipton, Yorks.

ORDINARY MEMBERS:

W.H. Black.	c/o "Keighley News", Skipton Road, Keighley, Yks.
C.F. Blackwell.	1, Marlborough Road, Idle, Bradford, Yorks.
M. Butterfield.	High Gate, Green Lane, Glusburn, Crosshills, Keighley.
A.E. Cannell.	7, Birch Road, Garstang, Lancashire.
Mrs. M. Cannell.	- do - - do -
R.T. Clough, A.R.I.B.A.	
F.S.A. (Scot.)	"Stoneleigh", Utley, Keighley, Yorkshire.
L.B. Cook.	Rowthorpe, Bainton Crossroads, Nr. Driffield, Yks.
G.M. Davies.	2, Millfield Street, Pateley Bridge, Harrogate, Yks.
R.V. Davis.	8, Blakehill Avenue, Fagley, Bradford, 2, Yks.
J.M. Dickinson.	8, Cedar Avenue, Sutton-in-Craven, Keighley, Yks.
I. Drysdale.	14, Monkwood Close, Seacroft, Leeds, 14, Yks.
B. Emmott.	21, Prospect Mount, Fell Lane, Keighley, Yks.
K. Foster.	33/35, Main Street, Grassington, Skipton, Yorks.
J.R. Foster-Smith,	The Old Rectory, Middleton-in-Teesdale, Barnard Castle.
J.E. Freeman.	35, York Road, Driffield.
D.M. Goth.	2, Park Cottages, Hornby, Lancashire.
R.G. Guthrie.	186, Station Road, Billingham.
Mrs. J. Guthrie.	- do - - do -
Miss. J.G. Guthrie.	- do - - do -
D. Hall.	19, Hawthorn Road, Slaithwaite, Huddersfield, Yks.
F. Hall.	37, Wharfedale Avenue, Billingham.
R.S. Harker.	Lythe House, Grassington, Skipton, Yorks.
J.B. Hodkinson.	The Close, Netherside, Grassington, Skipton, Yorks.
J.E. Holding.	17, Ryelands Street, Crosshills, Keighley, Yorks.
W.J. Houston.	9, Arncliffe Road, Harrogate, Yorks.
C.J. Hunt.	Eustace Percy Hall, Freeman Rd. Newcastle-on-Tyne.
K.C. Jackson.	64, Princes Drive, Skipton-in-Craven, Yorks.
S.H. Jackson.	16, Chapel Street, Calverley, Pudsey, Yorks.
D. Joy.	1, Water End, Clifton, York.
W.J. Keay.	Flat 2, Belgrave House, Ilkley, Yorks.

ORDINARY MEMBERS (continued)

E. King.	6, Clough Terrace, Barnoldswick, via Colne, Lancs.
Miss E. Kirkham.	7, Abbots Way, Newcastle, Staffs.
R. Leach.	62, Ratcliffe Street, Darwin, Lancashire.
J. E. Metcalfe.	Rosebank, Hebden, Skipton, Yorks.
J. Moon.	3, Mill Cottages, Distington, Workington, Co. Durham.
A. M. McCall.	20, Norfolk Road, Harrogate, Yorks.
A. R. Nichols.	c/o Black Horse Hotel, Grassington, Skipton, Yks.
G. M. Renshaw.	National Provincial Bank House, Queen Street, Morley.
D. T. Richardson, A.R.I.C.	5, Calton Terrace, Carleton Road, Skipton-in-Craven.
M. Roxburgh.	158, Green Lane, Cookridge, Leeds, 16, Yks.
A. Stobbs.	8, Defoe Avenue, Biddick Hall Estate, South Shields.
A. Sutcliffe.	Dept. of Paleontology, British Museum, London, S.W. 7
R. M. Thornton.	89, Headingley Mount, Leeds, 6, Yks.
J. C. Wade.	14, Branch Road, Skipton-in-Craven, Yks.
F. Walker	Bunkers Hill, Burnsall, Nr. Skipton, Yks.
W. Walton.	22, The Whinfield, Summerbridge, Nr. Harrogate, Yks
J. E. Whittaker.	101, Greenhead Lane, Utley, Keighley, Yks.
J. D. Wilcock, B.A.	10, Beech Grove, Clough Hall, Kildsgrove, Stoke-on-Trent, Staffs.
J. E. Wildridge.	View Point, Ellerbeck Lane, Workington, Co. Durham.
H. R. Wilson.	7, Westbourne Place, Stanningley, Pudsey, Yorks.
Miss I. Wood.	12, Westville Avenue, Ilkley, Yorkshire.
Mrs. M. G. Wood.	- do - - do -

MEMBER CLUBS:

Leicester University Speleological Society. The Union, The University, Leicester.

10. RESIGNATIONS: The undermentioned persons have not renewed their subscriptions for 1963. They are therefore deemed to have resigned from the Society,

J. Ambler.	Danesgarth Top Lane, Copmanthorpe, Yorkshire.
J. H. M. Ashworth.	9, Norfolk Road, Harrogate, Yorkshire.
A. Butterfield.	Yew Cottage, Green Lne., Glusburn, Nr. Keighley, Yks.
P. C. Crawford.	Menwith Hill Station, 41, Bardon St., New Jersey, U.S.A.
S. Dodsworth.	14, Monkswood Close, Seacroft, Leeds, 14.
B. A. Hopkins.	26, Ringwood Crescent, Woollaton Road, Nottingham.
W. Marshall.	9, Park View Crescent, Leeds, 8, Yks.
J. L. Midgley.	23b, Cavendish Street, Keighley, Yks.
D. Platt.	39, Sharphaw Avenue, Skipton-in-Craven, Yorks.
P. S. Schofield.	3, Elswick Road, Leyland, Lancashire.
A. Stubbs.	2, Ashfield Cottages, Grassington, Skipton, Yorks.

11. DATE OF THE NEXT GENERAL COMMITTEE MEETING. Saturday 22nd, June 1963, Brick Hall Inn, Sheep Street, Skipton, Yorks. 7.00 p.m. prompt. Non Committee Members welcome.

12. COPY DATE FOR THE NEXT NEWSLETTER - Volume I. Number 3. Closing date for material for the next Newsletter is the 31st. August 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 would bear this date in mind. Illustrations will be inserted at the Honorary Newsletter Editor's discretion. Illustrations should be such that they will go on a 10" x 8" or 13" x 8" page. Officers of the Society are asked to submit short reports for insertion in the Newsletter.

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BIRMINGHAM UNIVERSITY CAVING CLUB.

Miss Isabel Wood asks us to convey the thanks of all members of the B.U. C.C. to the Society for permitting them to use Pickering End Field Centre for their recent meet. Whereas Miss Wood is better known to us as Miss Bessie Wood she asks that in future we address her as Miss Isabel Wood thereby avoiding confusion between ourselves and her friends at Birmingham University.

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CAVE RESEARCH GROUP OF GREAT BRITAIN.

(i) Southern General Meeting. This meeting is being held on Saturday 29th. June 1963 at 5.00 p.m. at the Church House, Lion Street, Brecon.

Three papers are to be presented:-

1. "Intermittant Springs" by G.Stevens, Esq.
2. A paper, not yet titled, on some aspects of Mendip Caving by D.C.Ford, Esq.
3. "Causes of Fatal Accidents to Cavers" by Dr.O.C.Lloyd.

An informal dinner will follow the meeting price approximately 12/0. People wishing to have dinner are asked to contact A.W.Ashwell, Esq., Cuilcagh, Stanyeld Road, Church Stretton, Salop not later than the 15th. June.

(ii) Northern General Meeting, Ashfield Hotel, Settle. 11th. May 1963.

The meeting was very well attended - clubs from all over Great Britain being present. Two papers were read in the afternoon:-

1. "Goyden Pot" by Dr.T.D.Ford.
2. "Fauna Collecting" by D.B.Driver, Esq.

The following Society members were present:- C.F.Blackwell: J.C.Wade: D.T.Richardson: J.D.Wilcock and Mrs.M.Wood.

Dr.Ford made an appeal for more research work to be carried out in Yorkshire and mentioned amongst other areas that both the Goyden Pot Area and the Alum Pot Area would more than repay some attention. Dr.Ford acknowledged the gift of the Goyden Pot survey by the Society. Mr. Richardson asked questions about soft stalagmite formations and was given some valuable information which should be of very great use to us in our Alum Pot Area investigations.

Mr.Driver's paper was invaluable to anyone even slightly interested in undertaking the collection of biological material either above or below ground. Present at the meeting was Monsieur Marcel Siffre, Director of the National Institute of Speleology of France. During the afternoon whilst the C.R.G. Committee were in session Mr.Wade and Mr.Richardson took Monsieur Siffre and his Secretary for a short tour of the Yorkshire Dales. This was much appreciated. In the evening some 40 members and friends sat down to a very enjoyable dinner.

CAVE RESEARCH GROUP OF GREAT BRITAIN (continued)

(111) Relationship with the Society: Whereas it is concluded that all of you know that the Society is affiliated to the Cave Research Group it may well be just as correct to conclude that most of us think that this affiliation starts with the payment of the Annual Subscription and ends with the receipt of C.R.G. publications, the use of their library and the right to attend the various meetings held by the Group.

I would like to emphasise that our responsibilities as an affiliated Society do not lie within the narrow limits mentioned. We are, by our affiliation, bound by the C.R.G. Constitution to aid the collection and advancement of knowledge relating to speleology. The C.R.G. are not an "active group" - they do not possess caving equipment - they therefore rely on all their members to supply information as it comes along and they reciprocate by publishing this information giving their publications a World wide distribution into the bargain.

We as a Society are in an admirable position to give the C.R.G. our fullest support. Almost all of the work we have carried out and are in fact carrying out at the present moment is ideally suited for presentation as papers at a meeting and equally suitable for publication by the C.R.G. It is also true to say that we can do this without jepodising our own Society publications, which of course we rely upon to swell our limited finances. The publicity associated by the publication of Society material in this way can only be beneficial to the Society. I would therefore like to appeal to all of you to sincerely think about putting pen to paper with a view to writing articles suitable for reading at future C.R.G. meetings. One of these days we will be invited to act as hosts to a C.R.G. meeting and what would be more appropriate than a series of papers read by our own Society members.

Well what about it - will I be able to report in the next Newsletter that papers are already being prepared?

Douglas T. Richardson
Newsletter Editor.

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LEICESTER UNIVERSITY SPELEOLOGICAL SOCIETY RESEARCH PROGRAMME.

The Society is at present engaged in the study of a series of caves and fissures recently discovered (1962) by members of the Society on the island of Portland, Dorset. The fissures have been mentioned by such workers as Osmund Fisher, (Geologist, Vol. VI, 1863, p. 250) in connection with Pleistocene bone deposits, but no work has described the fissures from a speleological aspect.

The caves occur in the Portland Limestone of the Upper Jurassic. This in Britain is very unusual, if not unique, occurrence in rocks of this age. The limestone is 90 to 100' in thickness on the island, although it thicker in places on the mainland. On the mainland however, no caves are known to occur. On Portland Island there is a strong joint system with which the caves have an obvious connection. There is not such a well developed

LEICESTER UNIVERSITY SPELEOLOGICAL SOCIETY (continued)

joint system on the mainland.

There are at the moment two distinct occurrences recognised:

a) fissures a few inches to 5 feet in width and up to 100 feet in height from the base of the Portlands Stone up to the overlying Purbeckian,

b) caves 5 to 10 feet in width and 3 to 8 feet high.

The length underground varies from a few feet to several hundred feet, and the caves can be proved to continue further by stalagmite coated faces in the quarries i.e. some of the passages have been partly quarried away. Parts of the systems are well decorated, the formations being of two types a) Mature and non-active and b) youthful and still active, though the systems as a whole are no longer active.

The work consists at present of plotting the directions of all the joints, fissures and caves on the surface and surveying underground the larger caves. The whole survey is to be done on the scale 25 inches to the mile, i.e. will be plotted on O.S. 25" plans.

At the end of June there is to be a week's camp near Portland when a wholesale survey will be conducted. The 'camp' will be in a farm house costing £20 so members of the N.C. & M.R.S. will be most welcome in order to lower the cost per person.

M. Hooper, President.

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COUNCIL FOR NATURE - NATIONAL NATURE WEEK EXHIBITION, TOWN HALL, SKIPTON.

Earlier this year we were approached by the Craven Naturalists and Scientific Association and were invited to assist in the staging of a public exhibition during National Nature Week 20th to 25th. May 1963. We agreed to help and put on an exhibition stand on which were displayed photographs and documents relating to lead mining in the Yorkshire Dales, a model of a modern floatation plant for the separation of minerals thrown away by the lead miner; a model section of an old lead mine and specimens of galena, flour-spar, barytes and calcite arranged in such a manner as to show what everyday articles find their origin in these minerals. We were more than grateful to Mr. J.M. Dickinson for making the two models which were admired by all who saw them. Messrs. J.M. Dickinson, J.C. Wade and D.T. Richardson prepared the exhibits and with the aid of Mr. A.R. Nichols assembled the display on the evening of the 21st. May. We would like to express our thanks to Mr. Illingworth of the Craven Naturalists and Mr. Edgar Smith of the Craven Pothole Club for having placed our tables in position in advance - without their help our task would have been much harder. Other contributors were as follows:-

Aireville County Secondary School - Conservation of Animal Life: Skipton Girls High School - Plants showing special modifications; the spread of bacterial infection by flies and an impressive demonstration of the number of different plants to be found in one square foot of turf: St. Monica's Convent - Plant and Pond Life of the Skipton District: Skipton and District Aquarists Society: - Tropical Fish: Ermysteds Grammar School - Evolution of Animals and Birds with special reference to birds wings and feet: Arnold Waterfall - Display of stamps of the

COUNCIL FOR NATURE WEEK EXHIBITION (continued)

World illustrating all aspects of natural history: Yorkshire Post - "Beautiful Yorkshire" Photographs: Craven Pothole Club - Caving equipment, speleological literature and photographs.

The exhibition was visited by between 3500 and 4000 people.

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NORTHERN CAVERN & MINE RESEARCH SOCIETY RESEARCH SOCIETY RESEARCH PROGRAMME FIELD REPORTS:

(i) Alum Pot Area.

The first research meeting in this area took place on Sunday 28th. April and was attended by R. Guthrie; Mrs. J. Guthrie; Miss J. Guthrie; B. King; Miss D. Turner; J. C. Wade; Mrs. M. Wood and D. T. Richardson.

A survey of Upper Long Churn Cave was completed by J. Guthrie and J. C. Wade by means of measuring tape, prismatic compass and tripod. Survey stations were marked out in advance of the surveyors by Miss Guthrie and B. King - the latter being employed to cut permanent bench marks. This system allowed the surveyors to move rapidly and was a most useful innovation. D. T. Richardson made sketches of the cave passage, took p.H. readings and collected six underground and three surface waters for chemical analysis. Miss Guthrie also busied herself by taking readings of the temperature of both water and air. Notes were taken of the more interesting phenomena. There were many examples of stalagmite and stalactite formations originating along the line of joints in the limestone. There are groups of unusual shaped stalactites in the form of inverted beehives and what is probably more interesting is the fact that we have found what we believe to be a group of these "beehive" stalactites in an active state of growth. It would appear that they originate as fast growing concretions of soft stalagmite which eventually hardens off into a very solid inverted 'beehive'. The survey has already been sketched out by Mr. Wade. The analyses of the water samples has been completed by Mr. Richardson and the results are more than interesting - see separate article.

The second meet in the area was held on the 26th; May and was attended by R. Guthrie; Mrs. J. Guthrie; Miss J. Guthrie; J. C. Wade and D. T. Richardson. A surface survey of the moor was carried out which included Lower Long Churn, Upper Long Churn, Borrens Moor, and Wilson's caves. A prismatic compass, tripod and surveyor's chain were used. Photographs of the various cave entrances were taken.

More help is needed with this project and we would be pleased if more members would find the time to come along. The next official meet to the area is on Sunday July 7th.

Douglas T. Richardson ARLC
Area Organiser.

(ii) Buckden Gavel Mine.

The first meet in this area was held on Sunday May 5th. and was attended by J. E. Freeman and a friend, S. H. Jackson, Mrs. M. Wood, B. King, Miss D. Turner,

J.C.Wade and D.T.Richardson.

A pace and compass sketch by A.E. & M.Cannell is being used at the moment as a tripod and compass survey is as yet incomplete. p.H. readings of some of the smaller pools were taken by means of p.H. papers but this method was not found to be very reliable. Some small samples of water were brought out of the mine unfortunately these were not large enough to allow a full analysis - the results however show that there are great differences in composition of waters in some of the pools and it is hoped larger samples will be taken on subsequent visits.

The fungi observed on previous occasions is rapidly spreading down the passage. It has been tentatively identified as "stinkhorn" but other opinions favour "dry rot fungus". Sterile samples have been brought out but at the moment we have not found anyone who is willing to undertake an identification for us.

A number of smaller rises have been explored but a determined attempt has not yet been made upon the loftier rises and deeper winzes. These will only be attempted when a sufficiently large party attends.

Mr. Richardson collected samples of water for analysis from various streams and springs in the area - we await his results with interest.

The next meet at the mine will be held on Sunday 23rd. June - members attending the meet are asked to meet at the Old School House on the Cray Road at 11 a.m. If you are later than this please come up to the mine.

J.C.Wade.

Area Organiser.

-----oOo-----

(iii) Lake District Mines: Goldscope, Newlands, Keswick. Sunday 12th. May.

This level is historically very interesting although rather disappointing to explore. The Lakeland members have discovered a sporting entrance down a chute named "Cannon Ball Alley" which awaits a strong party. Cannon Ball Alley could provide access to the centre part of the workings that bisect the hill. Entry by the way of Back Level is obviously impossible and entry through Goldscope is now very risky.

J.C.Wade.

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OXFORD UNIVERSITY EXPEDITION TO NORTHERN SPAIN - 1961.

by

J.D.WILCOCK, B.A. (Oxon.)

CAVING ORGANISER & GEOPHYSICIST.

The organisation of any sort of expedition requires a large amount of work. Preparation for the Oxford University Expedition to Northern Spain 1961 began almost a year before the expedition members left the shores of Britain, and was tackled as follows. The idea was originally that of Mr. J. Walker of Ilkley and Oxford University, a potholer and amateur archaeologist. He decided to put forward the idea of an archaeological expedition to Spain to study prehistoric rock carvings, and their possible connection with cave paintings. It was decided that

if it was intended that caves should be explored in connection with the archaeological work, then a number of experienced potholers would be required in the party so that adequate rescue facilities would be available in the event of accident (there is no Cave Rescue Organisation as we know it, in Spain, and it was intended to visit remote areas.) The original idea was discussed over tea in a Leeds cafe in the summer of 1960, and on return to Oxford for the Michaelmas Term the idea was put before the Oxford University Cave Club, and a meeting called for interested members. Eventually there were eight members from Oxford, and numbers were made up to twelve by inviting three members of the Manchester University Speleological Society and an experienced amateur archaeologist from London University.

It was decided that the expedition would leave Britain on the 1st. August 1961, and return on the 21st. September. The task of organising the transport, food, and equipment for twelve people for this period was shared among the members according to their special aptitudes and qualifications. It was decided at an early period to have a separate caving programme, so the task of obtaining a full set of caving equipment fell to the author. Eventually firms provided enough materials to make 1500 feet of electron ladder, overalls, helmets, boots, lamps and batteries, carbide lamps and carbide, waterproof electric torches, and nylon rope. For the geophysical programmes three firms loaned resistivity meters and associated equipment. For water testing we were given fluorescein, Rhodamine B, indicators and other chemicals, and loaned a Lovibond Nessleriser.

The leader of the expedition approached the University authorities for their recognition, which was given and so helped in the quest for support, and also approached various learned societies and charitable trusts, the Spanish Embassy, the Oviedo University in Spain, and H.M. Customs.

The geomorphologist arranged the loan of surveying equipment, and also carried out duties as driver-mechanic.

Because of the large weight of equipment required by the expedition it was decided to purchase two ex-army lorries, a 3-ton Bedford OY and a 1-ton Bedford MW. Once Final Examinations were over, the mechanics set to, and within a few weeks produced a pair of shiny, green painted, smoothly-running lorries. Paint was given and a complete tool kit was loaned to the expedition. This was to prove very useful. The worn tyres were retreaded free of charge. A roofrack extension was constructed with Dexion steel angle.

Many firms generously gave food to the expedition. Menus were built round a 'backbone' of 200 kilos potatoes, 30 kilo rice, 60 lb. porridge oats, 18 tins of crisps and 50 kilo bread. Most of the non-perishables were taken out from Britain, and perishables bought in Spain.

Several types of Spanish dishes were tried, notably PAELLE. Ingenuity was at its greatest in the mountains: during one expedition into the high peaks an acceptable meal was made from a handful of rice, a clove of garlic, Marmite, Oxo and wild chives - a chive paelle.

Underground rations had to be portable and nourishing, and here lifeboat biscuits, tubed jam, Marmite, chocolate and other concentrated sweets formed the staple diet.

The photographic equipment of the expedition comprised; three 2.25"

square reflex cameras, three 35mm cameras, tripods, flash guns and a large number of flash bulbs. In addition developing equipment was taken so that films could be processed in the mountains. Altogether about 2000 exposures were made in colour and black-and-white, covering every aspect of the Expedition work and life in Spain. Although many of these were purely for the records, many publicity pictures for firms showing their products actually in use on the Expedition were taken. Things like toilet paper posed some problems! A comprehensive record of rock carvings and caves was compiled.

Daily records were kept of the Trema and Vega de la Cueva springs (see Table I, p. 15.). Rate of flow (using a graduated container and stop-clock), temperature, p.H. (using a B.D.H. Nessleriser and indicators), and hardness (by means of E.D.T.A. titrations) were all measured, and attempts made to refer these to weather conditions, source of water, and supposed length of underground passage, etc. These results showed that the rate of flow was generally influenced by rainfall within 24 hours and fell off considerably during the period because of the extremely dry weather. Temperature and p.H. in general showed no relationship to rainfall. Water samples for each day were brought back to Britain for further analysis. Samples of surface water, sinks, resurgences and cave pools were also tested for p.H., and showed considerable local variations between 6.5 and 9.5.

The aim of the geophysical surveys was to provide support for the main caving programme, and also to provide corroboratory evidence of the course of a cave, where needed. The resistivity method using the Wenner configuration of electrodes was used in all cases.

The survey in a suitable dry valley over the pothole designated P.1 (Pozo Palomeru) located the passage in good agreement with surface plot of the underground surveys, and measurement of the depth by the 'expanding electrode' method enabled the various theoretical formulae in use to be tested. A further survey across the dry valley beyond the furthest point reached underground indicated the presence of a cave, which may be an extension of the passage explored.

A survey across the floor of the enclosed valley at Las Reblagas was handicapped by marshy conditions, and a further attempt to locate the underground connection between Lago de la Ercina and Las Reblagas, proved by Rhodamine B testing, failed because of the inadequate depth reached by the survey.

Hydrological testing was carried out using fluorescein and the new method evolved by members of the Bradford Pot-hole Club using the powerful Rhodamine B. Meteorological observations were taken daily as follows: wind speed and direction; barometric pressure; wet and dry bulb temperatures, and relative humidity; rock temperatures; rainfall; cloud amount and types; and prevailing weather conditions. The average barometric pressure was 26.45 inches of mercury, and this low value is a consequence of the altitude of the base camp. Air temperatures often reached 25°C and the relative humidity 85%.

The Western Massif of the Picos de Europas proved to be an excellent area for the investigation of limestone geomorphology, and the Expedition geomorphologist was kept busy with observations both on and below the surface. Apart from the survey of caves, the drainage of the area was investigated, and details of the rock-forms were sketched, described and photographed. In all thirteen potholes, nineteen caves,

TABLE I.

RECORDS OF RESURGENCE IN THE VEGA DE LA CUEVA.

Date. 1961.	Time.	Temp. °C.	p.H.	Comparable Flow. gals./min.	Inches Rainfall Preceding 24 hrs. & Beaufort Weather Symbols.	Barometric Pressure. ins. Hg.
20.8	0900	9.0	7.7	3.8	0.155. bcm	26.54
21.8	1000	9.0	7.7	3.5	- Cc bc ☉	26.48
22.8	1100	9.5	7.7	3.2	- Cb zbc ☉	26.54
23.8	1100	9.5	7.7	2.9	- Cu zbc ☉	26.56
24.8	1000	9.0	7.7	2.7	- Cu bc ☉	26.50
25.8	1100	9.0	7.7	2.6	- Cc bc ☉	26.46
27.8	1630	9.5	7.7	2.3	- b ☉	26.61
28.8	1000	9.5	7.7	2.1	- b ☉	26.57
29.8	1700	9.5	7.7	1.8	- Cu bc ☉	26.44
30.8	1000	9.0	7.7	1.5	- Cu mc	26.49
31.8	1700	9.5	7.7	1.1	- b ☉	26.48
1.9	1900	9.5	7.7	0.8	- Cu Ci As bc/ ☉	26.45
2.9	2000	9.5	7.7	0.7	0.05 Cb o	26.38
3.9	2000	9.5	7.5	0.7	tr md	26.33
4.9	1700	9.0	7.5	0.8	0.21 Cb om	26.36
5.9	2000	9.0	7.5	0.5	0.02 bc ☉ /mr	26.32
6.9	2000	9.0	7.6	0.6	0.09 bc ☉ /m	26.35
7.9	0900	9.0	7.6	0.7	0.02 om	26.39
9.9	2000	9.0	7.6	0.6	tr bz ☉	26.44
10.9	2000	9.0	7.7	0.6	- bc ☉	26.41
11.9	1000	9.0	7.7	0.6	- om /d	26.47
12.9	1000	9.0	7.7	0.4	0.02 bz ☉	26.41

EXPLANATION of WEATHER SYMBOLS.

Cloud types:

Cu cumulus
 Cb cumulonimbus
 Ci cirrus
 Cc cirrocumulus
 As altostratus

Other symbols:

b blue sky
 c cloud
 o overcast
 m mist
 z haze
 r rain
 d drizzle
 ☉ sun

Preceding weather conditions are separated from prevailing weather conditions by an oblique stroke " / ".

twelve blocked entrances, seventeen sinks and fifteen resurgences were recorded. Although the thickness of the limestone is sufficient for the formation of very deep potholes in the area, none of those explored reached a depth greater than 250 ft. from the surface. The largest system discovered was that of Pozo Palomeru (P.1). This has a 140ft. entrance shaft, walled at the top, and was pointed out by the shepherds soon after arrival. About a mile of passages have been explored. The drainage is complex, consisting of at least two separate vadose passages, linked by flood passages. Although at the time there were only a few pools of water, there was strong evidence that in times of flood, when the snow melts on the surface, there must be a powerful river through the cave. Survey indicates that the cave comes quite close to the surface at the point of furthest exploration, and in this section it was located by geophysical survey. The largest cave, and the only one containing an active stream, was named Cueva del Viento (Cave of the Wind) because of the strong icy draught blowing from the entrance. This consists of a long rift passage connected to a number of stream passages. The best formations and rimstone pools discovered by the expedition were in this cave, which acts as an overflow for the large river at its inner end in times of flood. Cueva de Orandi was explored to a depth of nearly four hundred feet, in extremely wet conditions, and further exploration will require rubber dinghies and a large amount of tackle. The resurgence at the shrine of Our Lady of Covadonga is some four hundred feet below the furthest point of exploration. Five caves of moderate size were explored, of which the most interesting were P.11, with very little horizontal extension, and the 'Cave of the Snow', about 5500 ft. above sea level, so called because the main chamber was filled to a depth of thirty feet by many years accumulation of snow. To keep a balance between the large caves and the more frequently-occurring small caves, about 25 small caves were also surveyed; these varied from 150 ft to only a few feet in length. The small caves seem to be older than the large ones, and the formations in many of them were in an advanced state of decay. At higher altitude many potholes were seen, some blocked by frost shattered boulders, but others open, and often quite deep. The expedition was limited by time from exploring them, but they are an attraction for further work in the area.

The drainage of the area was very interesting, although many streams had dried up during the long spell of dry weather. Lago de Enol receives only a small trickle of water above the surface, and as more water flows out than in, it seems that there must be an inlet under the surface. Lago de la Ercina overflows in winter by a dry valley to the Vega de Comeya, a completely enclosed valley, but in summer its only outlet is a cave, the water appearing at Las Reblagas, a neighbouring enclosed valley, before sinking again.

Several rock surfaces from 3500 up to 8000 ft above sea level were studied for development of runnels. Frost shattering obliterates these above 7500 ft.

The archaeological section of the expedition, four members, investigated many prehistoric rock carvings in Galicia. These are of three types: the familiar 'cup-and-ring' carvings as seen on Rombalds Moor, Yorkshire; zeomorphic, or animal designs; and 'schematic' designs. The cup-and-rings are roughly dated as late Neolithic or Early Bronze Age.

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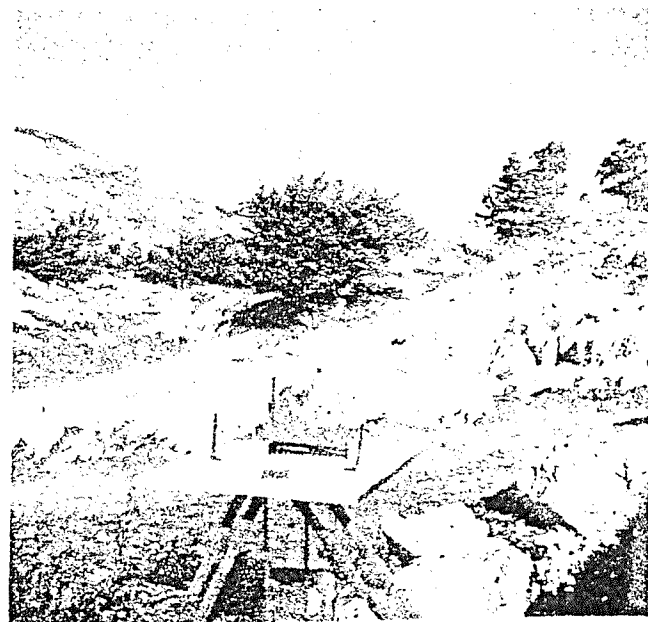
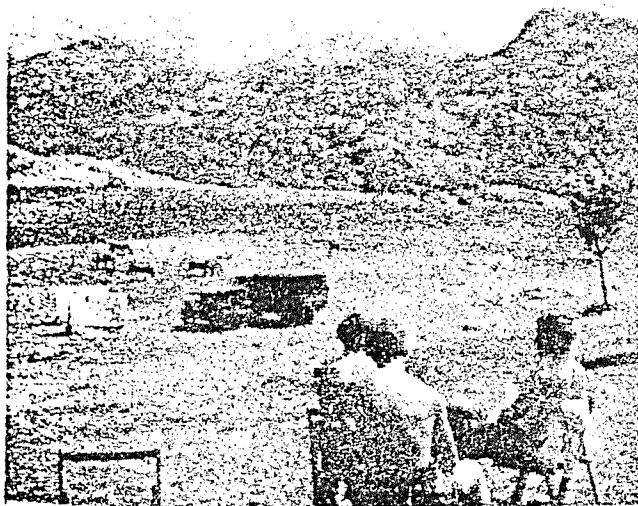
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LARGO DE ENOL



VIEW FROM REFUGE

PLANE TABLE SURVEY
in CLINTS.

OXFORD UNIVERSITY EXPEDITION . 1961.

It will be appreciated that to carry out such a comprehensive programme the members had to be carefully chosen, and finally had the following functions:

Leader of the Expedition, and chief archaeologist.

Geomorphologist, also driver/mechanic.

Caving Organiser, also geophysicist and cave surveyor.

Quartermaster, general equipment; also photographer, chemist, and entomologist/orthinologist.

Quartermaster, food; also chemist, photographer, and driver.

Transport Officer, chemist and photographer.

Interpreter, and zoologist.

Storekeeper, chemist.

Assistant archaeologist, driver/mechanic.

3 experienced speleologists.

All members of the expedition except one had some, and in most cases extensive caving experience.

Many months of hard work were followed by a last week of final preparation in Oxford. At last the great day arrived, and the convoy departed from Oxford at 6 p.m. on Monday 31st. July 1961. The route was to London, where the night was spent at Twickenham in the houses of members of the expedition. Starting early next morning the Expedition travelled to Dover, where several last minute purchases were made. Duty-free films and cigarettes were collected from a bonded warehouse, together with some cases of fruit drinks which had reached Britain from America on the Queen Mary. The crossing, on the car ferry 'Compiegne' was pleasant, and there was little delay at the Calais customs. The first night was spent on a state farm at Vron, near Boulogne, and we were treated to some cider by the farmer. The following day saw us encamped near a rubbish dump at Rouen, where brakes and a ball-race on the three-tonner were repaired. The following night we camped near an explosives factory, on the site of houses which had been destroyed when the factory blew up. Luckily nothing happened whilst we were there. On Friday, 4th. August we reached Montignac in the Dordogne, where we camped and visited the Lascaux caves, and some other painted caves near Les Eyzies. At Bayonne we got caught up with dancing people in the streets, since it was Basque Festival Week. After the formalities at the French side of the Spanish Border, the Spanish customs would not let us through until morning, so we had no choice but to camp in 'no man's land' between the French and Spanish customs posts, on the Spanish side of the river. Most of us slept underneath the lorries. The customs officers must have thought us the maddest Englishmen they had seen. We had a communications telephone rigged up between the driver's cab and the back of the three-tonner, and they spent hours amusing themselves with it. We had a telescope and persuaded them to look through it at a non-existent American satellite, gave one tea about 1 a.m., and got water from their lavatory.

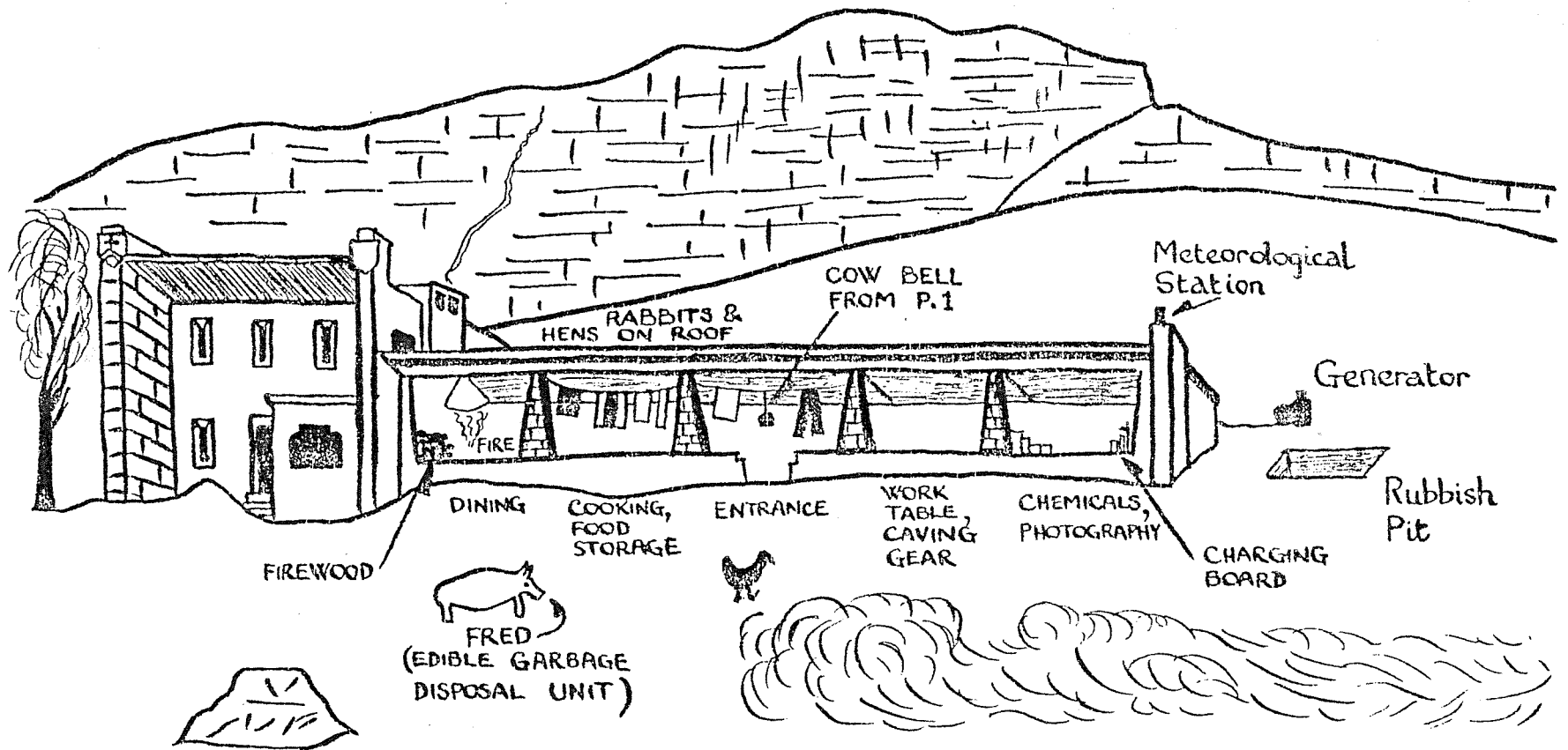
The equipment was finally released at 10.30 the next morning, and we journeyed along the beautiful Basque coast, stopping in the hot

afternoon to bathe. At night we passed through the ill-lit streets of Bilbao, and had our first taste of Spanish food - squid cooked in its own ink! We also had some soup with lumps of decaying fish in it. Many people said that had the meal been served up in camp, they would not have eaten it. However, our estimation of Spanish food became better the next day at Torrelavega. On Wednesday 9th. August we reached Cangas de Onis, at the foot of the Picos de Europa. Here a visit was paid to the Mayor, who gave us full permission to carry out our work in the area. That night we camped near the town, and had dinner at the cantina. All the local populace seemed to come in to have a good look at us, and at one time the waiter came across to say would we like the company of some girls! The next day we climbed the mountains and took up residence in and around the mountain refuge at Lage de Enol. Here we were to stay for the rest of the expedition, and the verandah of the refuge was turned over to our exclusive use for the storage of our equipment.

The first few days were misty, so that we could not see the mountains but we will never forget one evening, when the clouds suddenly cleared, giving us our first view of the peaks lit by the setting sun. Soon we had the verandah quite homelike. At one end we had the stores of food, the cooking equipment, and our eating shelter. At the other we had the chemical and caving equipment, and a worktable, where notes and surveys were often done far into the night. Besides the Tilley lamps we had electric lighting from our generator, which also was used to charge batteries. We were allowed to sleep in the dormitories of the refuge free of charge, except when other climbers came with permission from the Mayor, but some of us used tents pitched in front of the refuge. Our EDIBLE GARBAGE - DISPOSAL UNIT was a pig belonging to Senor Ramos, the warden of the refuge. The pig we were pleased to call Fred, and whenever we yelled this name the pig would come up at the double and begin to tuck into the pile of potato peelings, etc., which we had left for it. During our stay Fred put on weight quite considerably.

After the shepherds had shown us the open shaft of Pozo Palomeru we decided to fell a tree and fix it across the shaft, as otherwise it would have been rather difficult to rig tackle. The felling of the tree posed some problems, as at one time the butt end of the tree was ten feet in the air, and the branches on the ground! However eventually it was in position, and the cave proved well worth the effort.

As a light relief from our efforts in the mountains, we periodically descended to Cangas, camped outside the town, and ate in the cantina. Here we also watched bullfights on television. At the exciting bits the vertical hold of the set kept going wrong, and a waiter kept running up and down a little step ladder to put it right. On another occasion we attended the religious festival (FIESTA) in Covadonga. There was a procession from the basilica to the shrine (which is set in a cave at the resurgence of Cueva de Orandi) through a tunnel which has been blasted in the rock. Covadonga is an important shrine, as it commemorates the place where the Moors were turned back for the first time in the 8th. century, and the re-Christianisation of the country began. Lots of rockets were set off during the festival, and we amused the priests by setting off one of our signal rockets, which we had obtained in case we had difficulty in the mountains. It was the equivalent of a Bank Holiday in Britain. People were dancing to Spanish bagpipes, which have only one



Refugio de la Vega de Eñol

As used by the OXFORD UNIVERSITY
EXPEDITION TO NORTHERN SPAIN
1961



ENLARGEMENT OF
SHIELD ON LEFT-HAND
GABLE. COAT OF ARMS
OF CANGAS DE OÑIS
(ROMAN BRIDGE)

drone, and are slightly shriller than Scottish bagpipes.

All too soon it was time to pack up and return. The expedition made its leisurely way back along the Basque coast, frequently stopping to bathe in the warm waters of the Bay of Biscay, then moved more quickly through France.

In Boulogne the small lorry had to have a completely new set of tappets - the result of running 5000 miles on 62 - octane fuel. There was no trouble whatever with the Spanish customs on our way back - in fact the customs men embraced us as well-loved friends. At Tours we were invited for a drink to a real chateau, where the owner was very hospitable and his daughters and small son served drinks while we lay in deck chairs on the lawn: finally he insisted on showing us his Citroen 2 CV, which he put through its paces around the garden, perhaps to the slight disapproval of his wife.

We had a surprisingly easy customs check at Dover. One member asked if he could have the customs notice stating which goods should be declared, etc., as a souvenir. The customs officer said that it was highly illegal, but he would see us in the pub round the corner in ten minutes. There we toasted the successful completion of the expedition, rather sorry to have left the sunny south, but filled with memories of the last seven weeks. Finally we went our separate ways, some back to Oxford for the coming term, some to new jobs. All, we are quite sure, will remember the Oxford University Expedition to Northern Spain 1961 for the rest of their lives.

.....' and so for ever, brother, hail and farewell.'

Catullus 101.

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CRACKPOT CAVE SURVEY.

by

R.G.Guthrie.

F.Hall: R.G.Guthrie: Joan Guthrie.

Frank Hall obtained surveying equipment from the Tackle Manager, and on Sunday the 24th. March, 1963, a cold and windy day he began the survey with the help of my daughter and myself.

The water level was surprisingly low, so we decided to survey the stream passage first and continue from there as far as possible. The stream passage was fully surveyed also through the dig into the large chamber, then down to the stream again. It was a very satisfactory day except that we lost numerous pencils and two cones down a hole, just too deep to reach them. After washing the tape we found the winder missing because the locking screw was apparently non-existent when we received the tape, and our own temporary screw had worked loose.

The following Sunday (31st. March) the stream was in flood, and needless to say were the first crawls. Conditions were atrocious for surveying the entrance crawl, which would be difficult enough anyway. After one and a half hours of wet agony the mission was accomplished

and we quickly crawled out, changed and drank hot soup.

The survey so far has been plotted by Mr. Hall and Joan. A big surprise was in store for us; the cave does not go to the sink holes by the sheep fold on the other side of the track as expected, it swings back presumably under the valley, and probably takes some of its water from this stream near the waterfall - this has yet to be checked by surface survey.

On Sunday 7th. April 1963 we went to complete the survey, Frank wading up to his neck, in the again flooded stream, as usual!!! We took soil samples, p.H. values air and water temperatures and made notes on the main formations and physical features. We packed up and went out getting muddier than ever before trying to keep the notes and instruments dry and clean. (By the way we would like the Society to procure a compass with a built in windscreen wiper - please!!!)

The cave was quite populous on this occasion, Earby Pothole Club went through with us in the most awkward places, i.e. the puddle; Northern Pennine were also represented. Members of a mountaineering club met us as we came out, too cold to switch off our lights. Finally to crown it all a host of ramblers or some other such bods trekked across our field while we were changing. Joan of course had hogged the caravan.

P.S. To all valient Northern Cavern and Mine Research Society members who groaned their way through Crackpot last year, and called us all sorts of names afterwards - I would have loved to have seen you going through it last week!!!

Joan Guthrie.

-----oOo-----

BULLOCKS and GEESE.

by

R.G. Guthrie.

THIS ARTICLE HAS BEEN SUBMITTED IN RESPONSE TO AN APPEAL FOR FOLKE-LORE AND GENERAL INTEREST MATERIAL. THE AUTHOR MAKES APOLOGIES FOR THE FACT THAT IT IS NOT FOLKE-LORE, HOWEVER IT IS CONSIDERED OF SUFFICIENT HISTORICAL INTEREST TO FIND A PLACE IN THIS PUBLICATION. Ed.

Bullocks used to be used for draught purposes until they were four years or five years old after which they were fattened and sold for beef. Lord Faversham, Duncombe Park, near Helmsley, Yorkshire had the last draught bullocks in the North of England. Mr. Bob Bonas of Lingdale, Cleveland who is now 90 years of age shod bullocks in his blacksmiths shops at both Rievaulx and Helmsley over 60 years ago. The shoes were oval in shape and had the usual horse-shoe nail holes. Bowes Museum have been offered one shoe by Mr. Charles Rutter who ploughed it up on his land at Long Newton, Sadberge, Darlington. Mr. Fairfax Blakeborough

- the well known Cleveland author - has a photograph of some bullock shoes found in a blacksmiths shop at Grassington, Nr. Skipton, Yks - may be some of our members who have been in the Craven District know about these or their present whereabouts.

Bullocks were not the only animals shod - young heifers also got footsore on their way down from Scotland to the fairs and sales in England in the old droving days.

This brings me to my next point - "How many people have heard of birds being shod?". I can assure you they were and I myself can remember flocks of Irish geese being driven across England. They frequently spent the night on Norton Green, Stockton-on-Tees near the duck pond. The birds were driven through soft tar followed by sand or gravel to prevent them becoming footsore. It must have been a very slow business transporting these birds in this way but life moved slowly in those days.

-----oOo-----

FROM

EPITOME of EVIDENCE, NORTH of ENGLAND LEAD MINES. Mr. William Barron,
Craven Moor Mines (Old Cross Mine). N.C. & M.R.S. RECORDS.

HEALTH of MINERS.

Q. "Is there any particular disease among the Miners?"

A. "Not in our parts"

Q. "Are they as healthy as other Labourers?"

A. "I think that they are: we have one man 75 years of age"

Q. "But take them as a body, is there any asthma among them?"

A. "There is some, but very little."

Q. "Is there more than among the agricultural labourers?"

A. "Yes, in any mine there is a little more than that, but I think that in the Limestone district there is very little difference between them and the agricultural labourers as they only work six hours per day and all get home to their own houses."

Q. "Do they look as young as other men of their age?"

A. "Yes".

Q. "What do you think most injurious to the miners breathing besides foul air?"

A. "I do not think that powder smoke is very injurious, but still if you do have too much of it you spit a deal of black when you come out,
* I would recommend a "quib" where ever it can be used for the sake of making less smoke."

ACCESS.

Q. "How do the men go to the works?"

A. "They go down ladders chiefly. They go down a shaft 50 fathoms we have only one shaft."

Q. "Which do the men prefer, ladders or stemples?"

A. "Ladders; but I do not prefer having the ladders so long because when you put a ladder 20 or 30 feet long you make a stage so that when a man gets up to it, it is a little bit of relief. If ladders

were put up too long the men would perhaps object. I think it is dangerous, it is very hard work and laborious."

Q. "How frequently are the rests in your ladders generally?"

A. "From 21 to 30 feet."

Q. "What size of hole do the men go through?"

A. "Two feet - the whole of the rest is covered over".

Q. "How long is the floor?"

A. "It depends on the size of the shaft, ours is 6 feet and we slant the ladders about 5 feet in every 30, feet with 3 feet above the stage."

Q. "That is very steep?"

A. "No: the first 10 fathoms that we go down, we go right down one ladder almost."

Q. "In case of a man missing his hold, are your stages strong enough to prevent his falling?"

A. "Yes quite".

Q. "Is it usual in this district to have ladders?"

A. "A good many miners in this district go in by ladders".

Q. "Do you think they are safer than stemples?"

A. "Yes a long way, I am confident of it, ladders are considerably cheaper in a permanent shaft."

Q. "Have you ever been into a mine where stemples had been used and where they had been done away with and ladders introduced?"

A. "In all permanent roads (and I have been a miner since I was 7 years old) there have been ladders, but little temporary ways which are wanted only for a few months, you merely put in a few stemples, it is not worth while to put in ladders."

Q. "

ACCIDENTS.

Q. "Have you any accidents from blasting in your mine?"

A. "Not here, not in the Limestone, it is very safe for that."

Q. "Is it the same in other strata?"

A. "No not in the Gritstone or in the Blue Slate rock, or anything of that sort, it is more dangerous there. I should recommend copper prickers to be compelled to be used at those places."

Q. "Would it not be equally dangerous with a jumper or tamping rod?"

A. "No not with the tamping rod. With a copper pricker and an iron tamping rod, very few accidents occur, we generally use shale for tamping material."

Q. "Do you use fuses at all?"

A. "No we use straws. We only use a fuse where it is very wet; it makes too much smoke when it can be done without".

Q. "Is a deduction made from the men for candles and powder, do you use small or large powder?"

A. "The small powder is generally used where it is dry work and the other when it is wet. We let contracts and keep a store and find all these things, and we take it out of their money, but we calculate powder and candles, not in average of wages."

VENTILATION.

Q. "How many levels are you driving from the shaft?"

A. "Two at present"

- Q. "How far is forefield from the mouth of the shaft?"
 A. "About 150 fathoms we went out at 42 fathoms deep."
 Q. "How did you get air at the end?"
 A. "The "Old Man" has worked it for several years before, it is a very ancient mine, and we hole up into his workings, there are other shafts from different workings, so that we can come out very near any place viz. Woodhouse shaft, Longthem Shaft, Derby Shaft and Cockhill Level".
 Q. "From these levels you hole up into the Old Mans Workings?"
 A. "Yes, what we call a rise."
 Q. "What distance do you carry a level before you think it is necessary to put in a rise to the "Old Mans Workings" ?
 A. "It depends upon the metal; if we have good batches of metal we cut it all out and get the ventilation behind us."
 Q. "When you drive by the fathom, how far would you drive?"
 A. "By using zinc pipes we can drive 100 to 200 fathom and sometimes 300 with fans or pressure of water confined to pipes."
 Q. "Do zinc pipes decay?"
 A. "I have not found any decay."
 Q. "How are the fans driven?"
 A. "By waterwheel generally, none at Craven Moor".
 Q. "What do you use?"
 A. "A trap door and 4" to 6" zinc pipes."
 Q. "That gives you sufficient air without having a fan?"
 A. "Yes for the distance that we drive."
 Q. "Where do you put the trap door, is the air which is diverted by the trapdoor from the bratticed shaft or from the Old Mans Workings?"
 A. "From a level; we have a level which comes in from the Cockhills Mines to take all the water out, at a depth of 56 fathoms and we have a thorough communication of air both into the bratticed shaft and the other way. We put a trapdoor in the main level, and in a change of wind we have it both ways."
 Q. "Then I suppose that the upcast is dependant upon the weather?"
 A. "Yes sometimes it draws down the level and sometimes it comes up the level and the shaft and it acts in the same way in the pipes; it is sometimes like a pump forcing the air in and sometimes it is drawing it out; but the furthest level at present is only 48 fathoms from the trapdoor of the main level."
 Q. "And you find the air perfectly good?"
 A. "Perfectly".
 Q. "How do you ascertain that?"
 A. "By the candle"
 Q. "Not in any other way?"
 A. "No; we never think of anything of the kind; if the candle will burn straight up without slanting it we consider that quite good and safe."
 Q. "Supposing you were obliged to incline the candle what would you do?"
 A. "We would leave off for a day".
 Q. "Have you ever had to do that?"
 A. "No never at Craven Moor."

* A "Quib" - fuse made out of paper and gunpowder and ignited by candle which it passed through for delayed action.

ANALYSIS of WATER SAMPLES from UPPER LONG CHURN
CAVE and SPRINGS in the VICINITY of ALUM POT, SELSIDE
HORTON - in - RIBBLESDALE, YORKSHIRE.

by

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

The table on page 25 gives the results of the analysis of water samples collected on the 28th. April 1963.

Determinations of Free Carbon dioxide were carried out in the field.

Attempts were made to take p.H. measurements with p.H. papers were not very successful and in consequence the p.H.'s of the water samples were subsequently checked by means of a laboratory p.H. meter on Monday 29th. April. Care was taken when taking the samples to ensure that no air space remained above the level of liquid in the sample bottles.

POOLS:

The pools from which both samples "B" and "C" were taken are true rimstone pools. They are lined with calcite crystals and have stalagmite barriers. There was however no surface crystallisation taking place.

The pool from which sample "A" was taken was situated in a cavity in the limestone floor of a small dry inlet passage off the main stream passage. It had a silt floor and did not contain any calcite deposits. From its position and nature it is concluded that the high mineral content of this water is due to concentration of the water by evaporation from the pool. The free carbon dioxide content of this pool was significantly higher than that of the true rimstone pools. All three pools were in Upper Long Churn Cave S.D. 771.775.

STREAMS:

Samples "F" and "G" represent water flowing in the main stream passage of Upper Long Churn Cave S.D. 771.775. This is a fast flowing stream. Sample "F" was taken from the underground pool known as "Dr. Bannister's Handbasin" and sample "G" was taken from the same stream where it emerges onto the moor some 400 yards lower down at the point where it enters Diccan Pot entrance - S.D. 7742.7568. These waters are identical, the lower p.H. of "G" is probably directly linked to its higher free carbon dioxide content. One conclusion which can be arrived at is that no significant quantities of other waters enter this stream. In actual fact, with the exception of two small underground trickles the only other water which enters the main stream is that represented by sample "H", the composition of which is not sufficiently different from "F" to cause an alteration in the composition of the water reaching the point at which sample "G" was taken.

The water represented by "E" was taken from a small stream entering the main stream passage underground a little lower downstream than Dr. Bannister's Handbasin. This water has picked up some hardness salts during its course underground yet it has retained the slightly characteristic yellow colour of a moorland surface water. This may mean that the water has travelled somewhat quickly for some considerable distance underground before finding its way into the main stream

ANALYSIS OF SAMPLES OF WATER FROM UPPER LONG CHURN CAVE, HORTON-IN-RIBBLESDALE
AND SURFACE STREAMS AND SPRINGS IN THE VICINITY OF UPPER LONG CHURN CAVE
SAMPLES TAKEN 28th. APRIL 1963.

SAMPLE NUMBER	UNDERGROUND						SURFACE		
	POOLS			STREAMS			STREAMS		SPRING
	A	B	C	D	E	F	G	H	J
Total Hardness (as CaCO_3)	209.6	136.0	126.0	113.6	73.5	54.4	54.4	46.4	83.2
Temp. Hardness (")	198.0	96.0	90.0	96.0	54.4	35.0	34.0	36.0	62.0
Perm. Hardness (")	11.6	40.0	36.0	17.6	19.1	19.4	20.4	10.4	21.2
Calcium Salts (")	192.0	112.0	118.4	105.6	65.5	41.6	41.6	46.4	70.4
Magnesium Salts (as MgCO_3)	14.2	19.3	7.7	6.4	6.4	10.3	10.3	7.7	10.3
Free Carbon dioxide (as CO_2)	1.0	5.0	4.0	5.0	1.0	0.5	2.0	0.5	1.0
Chlorides (Cl)	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr
Sulphates (SO_3)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Manganese (Mn)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
p.H.	7.6	8.2	8.2	8.0	8.2	8.2	7.0	7.6	7.6
Colour.	C	C	C	C	SY	VSY	VSY	VSY	VSY
Temperature $^{\circ}\text{C}$.	4.5	5.5	5.3			9.5			
Temperature $^{\circ}\text{F}$.	40.0	41.5	41.0			49.0			

Results in milligrammes per litre. (Parts per million.)

SYMBOLS: Tr. = Trace: C = Colourless: SY = Slightly Yellow: VSy. = Very Slightly Yellow.

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

passage of Upper Long Churn Cave.

Sample "D" is from another slow flowing stream entering the main stream of Upper Long Churn Cave. This water is absolutely colourless and has a composition almost identical to that of the water in the rimstone pools "B" and "C". Does this therefore mean that this water is a spill over from rimstone pools ?.

SPRING WATER.

The water "J" was taken from a surface spring further down the valley S.D. 7781.7545. The composition suggests that this water has travelled sufficiently far underground to enable it to pick up relatively high amounts of hardness salts. It has the characteristic yellow tinge of a moorland water.

REMARKS.

The above survey represents a preliminary insight into the usefulness of water analysis in the study of caves. The results are sufficiently interesting to indicate that such surveys will be of great value. In view of this a more thorough programme is to be introduced whereby all springs and streams in the area are to be included.

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L I B R A R Y

ADDITIONS TO THE LIBRARY SINCE JANUARY 1963.

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

The Librarian intend to publish a list of additions to the Library in each Newsletter and members are asked to make a note of these additions as no further complete lists will be published at present.

SECTION A(i). Books about Caves.

13. Mendip. Its Swallet Caves and Rock Shelters. H.E. Balch. With chart showing long ago haunts of man and animals in the Mendip caves. 1948.
14. White Scar Cave. Dalesman Picture Guide. 1959.
15. Caves and Caverns of Peakland. Crichton Porteous. 1950.

SECTION A(ii). Books about Mines.

8. Men, Mines and Memories. Redmayne. 1942.
9. Rock distortions caused by Mining. An inaugural lecture by H.J. King, Professor of Mining, Leeds University. 1963.
10. Colliery Guardian... Sept. 1958. Incl. Mining in the Ingleton Coalfield. T.D. Ford.

SECTION A(iii). Geology.

5. The Face of North-West Yorkshire. Raistrick and Illingworth. Photographs and Maps.

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

Section B(i). Cave Research Group.

7. Publication Number 11. Nov. 1962. Some Technical Aids for Cave

Additions to Library Since January / 1963. (Continued)

- B(i) Exploration by Members of the South Wales Caving Club. Includes:-
7 Ladders - Selflifelineing Devices -Scaling Equipment - Anti - Expos-
ure Suits and a "Wet-Suit"for caving - A Magnetic Position Finding
device -Comparison of Synthetic Ropes Suitable For Caving.
8-11. Cave Research Group Newsletters 1956 to 1962.
12. Publication Number 12. February 1963. Report on the Investigations
of Pen Park Hole, Bristol. Edited by E.K. Tratman. Includes Large
scale plans. Contents: History - Geoelectrical Survey and
Excavation - Survey and Description - Biological Investigations-
Geological Report.
13. Newsletter March 1963.

Section B (ii). Craven Pothole Club.

25. Journal 1962. Incl. Gaping Gill, 1962 -The Swinsto Hoodo -Leadsmeltin
in the Yorkshire Dales - A Review of R.T.Clough's Book. -Craven
Caving Nomenclature - New Zealand Discoveries -Pwll Dwfn - Northern
Spain, 1962 -Adventures in Corsica -The Litton Rising -
Speleological Developments in County Fermanagh - An all British
Descent of Gouffre Berger - C.P.C. Irish Meet, 1962 - Digging Round
Goredale - Antro del Corchia - The Discovery and Exploration of
Swarthgill Hole. Several maps and plans.

Section B(vii). Leicester University Geological Society.

3. Petros. January 1963. Incl. Jurassic, Cretaceous Boundary around
Chambery, Savoie. - A Geologist's Vacation in South Africa. -Some
Geological Notes on N.E. Greenland - Lower Cretaceous Ironstones of
Linconshire - Departmental Field Excursion to the Rhine Graben -
Field Excursion to the Yorkshire Coast - Field Excursion to South
and Central Wales - The Carlingford Complex - Some Aspects of
Antarctic Geology - The Swiss and French Alps.

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

7. Bulletin. October 1962. Incls. Long Cliff Mine, Castleton -
Yatestooop Sough by Nellie Kirkham - The Surface Remains on Dirtlow
Rake - White Watson, Pioneer Derbyshire Geologist - Extract from
"General View of the Agriculture and Minerals of Derbyshire" Vol.I
(1811).

Section B (xiv) The Leicester Geographical Journal. Spring 1963.

1. Incl. The Development of the Northhamptonshire Iron Ore Field by
D.A.Jeyes - A Study of the Granite Industry of Cornwall and the
Fluorspar Industry of Derbyshire by Richards and Priest.

The Librarian wishes to thank Mr. Roger Harker for sending the
following list of books which may be borrowed from him for the cost of
postage and wrapping :-

1. De Re Metallica, Agricola.
2. The Cornish Miner. A.K. Hamilton-Jenkin.
3. History of Copper Mining in Cornwall. Barton.
4. Mines and Miners of Cornwall. Vol.I. A.K. Hamilton-Jenkin.

Books Available from Mr. R.Harker (Continued)

5. Cornwall in the Age of the Industrial Revolution. Rowe.
6. Peak District Mines Historical Society Bulletins -
Volume I. Number 1 to date.
7. White Watson and His Geological Sections. T.D.Ford.
8. Upper Carboniferous Rocks of the Ingleton Coalfield. T.D.Ford.
9. Mining in the Ingleton Coalfield. T.D.Ford.
10. The Carboniferous Rocks of Coverdale. A.A.Wilson.
11. The Millstone Grit Series of Colsterdale. A.A.Wilson.
12. Lead Smelting Mills of the Yorkshire Dales. R.T.Clough.
13. Various Papers in German Concerning Austrian Caves.

Also numerous standard geological texts which may be borrowed during the summer months.

Sincere thanks, also, to Mr. B.W. King, a new member, who has presented a generous gift of books to the Library : to Mr. J.C. Wade for conveying these and other library material to Ilkley and to Miss. Isabel Wood for assisting the Librarian in the translation of articles in the Spanish language sent to the Society.

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