[illegible]

Burrington Area for Cave Registry.

a) Fissure in conglomerate near Mendip Gate Café. On opposite side of the road at the base of an outcrop near the litter bin. Too tight to enter but only a few feet long.

b) Fissure hidden by undergrowth at left of path and in a small collapse (Lower Twin Valley), [illegible] sloped and a continuation downwards for ten feet or so.

c) Fissure beneath J. Nash Hole. a tight tube in the first clearing in the lower Twin Valley.

Looked at Aveline's, Nameless!, Tunnel Cave, Plumpe, Sidcot, Drunkard's, Read, Foxholes,
walked to top of Dolbury warren & then to churchill gate.

d) Sink and rising (or at least a rill) at the side of the track near the pond at the edge of the Forestry commission between Link[illegible] & Dolbury.

For further notes on these see Mendip Cave Register.

[illegible]

Lamb Leer.

Ian Adams climbed from the winch platform around the corner of the main chamber to the left using artificial methods. He was then in fact in striking distance of the passage above - The S.W. Inlet.

Roy Denny started a dig where Ron Teagle & myself had left off in the tube on the left after the wedged boulder squeeze in St. Valentines Landing. After a few hours a gap was seen and the decorated wall of a chamber or larger sized passage could be seen - it is hoped that this will be entered next sunday.

Phil and I climbed the far right side of the terminal rift, the top is too tight (a 6" fissure). The other ways of reaching the top of the rift is to climb straight up from the bottom or in the RHS and traverse around (this looks possible).

Most of St. Vals. has been opened up, the squeeze before the dig has been made quite large - a large boulder has been dug out and removed.

Jan 18th

MNRC Annual General Meeting.

Mr. H.W.W. Ashworth resigned the chair and the post as chairman in favour of Mr. H. Bottomley who took the chair but not the post of chairman.

Secretary Report: A.M. Hogan.

Re - D. Willis - a formal letter was received with the resignation of D. Willis but with the promise that his Hillgrove work will be given to MNRC to publish.

Stagnation in the Wells area due to lack of local members - no effect on the club of the research officer. Membership still round 100 - many subscriptions still owing - these will of course cease to be members. Bert Hogan resignation but best wishes to all.

Thanks all round.

Hon. Treasurer: J. Hopkins, Miss.

Balance £39 - 0 - 7d. Subscriptions £14 - 10 - 0

Donations 1 - 10 - 0

Payments Hut Fees 3 - 0 - 0

Insurance £5, Cave Registry £3, C.C.C. £3, 25/- CRG.

Hon. Caving Secretary: R. Peasy.

Trips Jan) Browne's, L.L. Aggie Aggie.

Feb) & March) No trips in his list but there were 1 or 2.

Easter) S. Wales. Pine Tree Pot, Ubley Hill Pot.

May). Stoke Lane, LL. Swildons via Troubles & out Sump 1.

June). Vicarage Pot - dig by B. Craig. Biddle Wood for MCB test shaft 41ft - depth 90ft. Pot Moat.

July) Cow Hole, Ogof - Ffynnon Ddu.

Aug) MNRC camp - Pwll Dwfn - 6 pitches.

Sept) Hillier, Cow Cliff, Wills Hole.

Nov) Lamb Leer.

Dec.) Goughs 5th. 21st Primrose Pathetic. Bob Craig 27 hrs in digging beyond Swildons.

Note that formations in Browne's Hole are wasted due to quarrying. Quarry is now very close.

Hon Librarian: G. Miller.

Books 2,375 (378 added in 1963) 300 + from Gerard Chillen and others from Ashworth, Mansfield, Oldham & the Museum. New Shelves put in by gift from the Museum. System of fines after post card reminders.

Ornithologist Rep: Mr. Hopkins.

Nest record cards to British Trust for Ornithology and Som. Nat Hist & Arch Soc & Bristol Naturalist Society. Trips to Ebbor & Slimbridge. Special exhibit for National Nature Week on Birds and their habitat.

Tackle Rep: Mr. Baker.

Tackle in Museum. Money for ladders £20 - responsibility to Roy Deasy - tools from Ron Teagle.

Subscriptions:

Meeting of favour that subscription be 2 in 1.

Officers: Chairman - Vacant. Vice chairman - Bottomley, Hopkins, Hogan, Ashworth.
Secretary: C.A.E. Stewart. Cav. Sec. Roy Deasy. Treasurer. J. Hopkins. Tackle Officer - J. Cullen.
Librarian: Mr. G. Miller. Ornithology. Mr. H. Hopkins. Hon Auditor. Mr. Hawkins.

Hut for MNRC - leave it to Hon Sec.

<u>Lamb Leer.</u>

Jon Adams climbed to passage above the winch (S.W. Inlet). Great effort - ladder let down and a report of new passages in MNRC Notes 1964 and MNRC Jnl Vol. 1. No. 3. p.25 (Jan 1964).

Phil & I took out the old cable from the entrance to the Cave of the Falling Waters and dumped down into Main Trial shaft below the ladder.

Roy Deasy continued his dig in St. Valentines. Searched the chamber and noted that the foam that we used in 1958 in the cave are still in good green.

Jan 20th. Evening Post

Rat disease doctor goes caving again

Dr. Oliver Lloyd, lecturer in pathology at Bristol University, who in October became the first caver in the country to contract Weil's Disease after visiting one of the popular Mendip pothales, is back under ground.

After a month in hospital and a brief convalescence he returned to his hobby, immune against further attacks of the disease which can cause fever, jaundice, haemorrhage and failure of the kidneys.

Now Shepton Mallet Rural Council have exterminated the rats which cause the disease and will make three-monthly visits to suspect piggeries to keep the rodents in check.

Despite the precautions a letter has gone out to 21 caving clubs whose members visit the caves on the Mendips, warning them of the additional risk taken by visiting the Stoke Lane Swallet at Stoke St. Michael, near Shepton Mallet.

Dr. Lloyd, who has been caving 13 years, is treasurer of Bristol University Speleologica Society. He said today that only 16 per cent of cases proved fatal, though the risk rose to 24 per cent in the cases of victims who had jaundice.

7.35
ADVENTURE
Cave of Bats
Narrated by Anthony Smith
Filmed by JANE BURTON
Film editor, Robert Walter
Sound mixer, Bob Saunders
Presented by Tim Slessor
Series edited by BRIAN BRANSTON
See page 25

ADVENTURE takes you to Malaya and a

CAVE OF BATS

7.35

EVERY cave is a mystery—to some people repellent, to others fascinating. The enfolding darkness often conceals a host of animals which can be heard and usually smelt, but seldom seen. Tropical caves in particular support a vast number of hopping, slithering, whispering creatures.

Jane Burton, who shot tonight's *Adventure* film, went with her husband and a Chinese friend to explore a cave running half a mile into a limestone mountain near Malaya's capital, Kuala Lumpur. As zoologists they were intrigued by the way the cave creatures have adapted themselves to a life of perpetual darkness and also by the exact balance of the many different species in this almost closed environment, each depending on another for its food.

Their main purpose, however, was to observe the different types of bat living high in the craggy ceiling at the end of the cavern. They hoped to catch a few in order to investigate a microscopic disease-carrying parasite with which the bats were infested. Since the cave had already suffered partial depredation by mining it was important to carry out the investigations before the natural balance was destroyed.

The blanketing darkness of a cave usually inhibits photographers but, working by the meagre light of a torch and a paraffin lamp, Jane Burton managed to bring out of the 'Cave of Bats' a film which is unusual both in its technique and in its content—for it shows a number of creatures which have never previously been filmed.

Jan 30th. (New Scientist No 376).

21 p290

Adaptations of cave fish

FISH LIVING IN CAVES are known to have reduced eyes and skin pigmentation, but the effects of this habitat on their general biology have been rather neglected. Recently a biologist from Yale University has studied the anatomy and behaviour of several closely related fish, which include a free-living species, one which can survive in a cave and three which live only in caves, and he has found that they have many other adaptations to their way of life (T. L. Poulson, *American Midland Naturalist*, Vol. 70, p. 257).

The free-living species (*Chologasier cornuta*) is to some extent pre-adapted for cave life, since it is nocturnal and has small eyes, its other sense organs being sufficiently well developed to enable it to feed and find its way in the dark. However, it cannot live permanently in a lightless environment, as can the next species in the series, *C. agassizi*. The other species show progressively greater adaptation to cave life in terms of reduced eyes and loss of pigment. Other sense organs, especially those concerned with smell, touch, "distance-touch" (the neuromasts) and balance become more pronounced, and the parts of the brain concerned with these senses develop in proportion. The cave-living species are also better at integrating the information from their sense organs. This is shown by their increased ability to detect prey and avoid obstacles; they can also remember the positions of removed obstacles longer. Their heads are larger, and their fins longer, thus providing increased thrust with each stroke, which allows a longer gliding period while the fish make no "noise" to interfere with their neuromasts.

These adaptations are connected with one of the two factors Dr Poulson regards as important in guiding the evolution of these species, namely food scarcity. The other factor is the lack of enemies, which sets the fish the problem of regulating their own numbers. They achieve this through a lower rate of growth with greater adaptation to cave life, and the production of fewer larger eggs, which may be incubated by the mother. The rate of population growth is further reduced by cannibalism among the young fish. Probably overpopulation is also avoided by the cave dwelling fish breeding at a more advanced age than the free living species. They do not necessarily breed every year, but may live longer.

Evening Post.

SECURITY CHECK—BEFORE BORROWING A NEW BOOK

by JOHN WHITE

Top security measures have been taken by Bristol Central Library to protect a book which scores of Somerset cavers have helped to write.

When I arrived at the Reference Library counter and asked to borrow the "Mendip Cave Register," a girl assistant said: "Wait here. The book is locked in the safe."

Another assistant, complete with a bunch of jangling keys, then disappeared into the depths of the library to fetch the new book.

THREE COPIES

Minutes later he returned, but there was another security check to pass before I could have the closely - guarded volume.

I had to sign a form saying I had borrowed the book, giving my name and address and even my seat number in the library.

"Why all the security?" I asked. "Someone might steal it," said the bespectacled assistant.

A lot of fuss about nothing? Possibly. But it's certainly a most interesting and valuable book. The most comprehensive work on Mendip Caves yet produced.

The register contains details of more than 250 caves in Somerset from Quaking House Cave, Taunton, to the caves of the Avon Gorge, Bristol, and the stone mines of Bath.

It is a typewritten book with many maps which has been compiled by the Mendip Cave Registry — an association of organisations interested in Somerset caves.

This is an exclusive "subscribers' only" publication of which only three copies exist—one in Bristol, one in the library at Wells, and the third in the hands of the cave registry secretary.

As new information comes in, each copy will be amended to keep it up to date.

Feb 1st. Afternoon.

Charterhouse.

Roy, Olly, Ian Standing, Dain & Self.

Went over to start work on the blockhouse at Longwood, no materials or plan etc. So we all went down Longwood to Olly's dig about 50 ft lower down valley from the cave. Entrance cased by iron rails and sleepers. Pot-hole depth 15 ft was at one time 6 ft deeper but this has filled up after heavy rain and flooding - water gets through easily.

Rhino Rift - looked at entrance & discussed possibility of new dig.

Dig R.M. (Summer 1959) only 1 weekend - boulders stones etc on right of track about ½ way between Rhino Rift & the gate. Drinking fountain - where does the water come from.

Looked at dig (MCG 1953)? Rift shaft to 20 ft but was deeper - abandoned as it was too tight.

Feb 2nd

Went over with Ken Dawe & Jim Hanwell also 3 W.S.G's.

Measured & planned the blockhouse.:- △ in shape.

Upstream is the base of the △ 5' 6" long with sides of approx 7' 6" i.e. an isos △. Door in the top of the blockhouse with staples in the side to get down.

N side is stepped in a series of steps in reinforced concrete.

W. side a series of steps on reinforced concrete.

E. side to be built on reinforced concrete platform.

Reinforced with any old iron (bedsteads et al).

N.B. Write to; WSG concerning reports for MCR.

Sandhurst reference to logs.

Workers for MCR:-

Kevin Abbey - Eve Pot & World & B.B's from Jan 1964.

Gordon Tilly - BEC Occasionals & Hut Logs.

Tim Reynolds - Cave Surveys in literature.

Feb 6th Bath Chronicle.

Two years' work—and he produces guide for cavers

A BATH man has edited and produced the first year book and diary specifically designed for use by caving enthusiasts.

The publication this month of "The Speleological Yearbook and Diary, 1964" is the result of two years' work for 23-years-old Mr. John Dryden, of 1, Beaufort East, London Road, Bath.

Mr. Dryden says he has produced the book to fill a gap in speleological activities. It will be published every year.

He has been working on the book for two years and the final compilation took him 10 months. It has been financed from his own resources.

Mr. Dryden, a Northumbrian, moved to Bath 18 months ago from Gloucester, and is an executive with R. W. Trowbridge and Partners Ltd., a Bath advertising agency.

CAVING FOR EIGHT YEARS

He has been engaged in caving activities for over eight years and has been into most of the major cave systems in Great Britain.

Mr. Dryden is a member of the famous Mendip Rescue Organisation.

He takes part in caving trips every weekend. This summer he is travelling to the Pyrenees with the Gloucester Speleological Society.

Mr. Dryden

In June another of Mr. Dryden's ventures in this field will be born with the publication of a national magazine which is to be called "The Speleologist." It will be a bi-monthly publication and Mr. Dryden says its anticipated circulation will be 3,000.

Mr. Dryden says that one of the most important features of the yearbook is its list of every caving club in the country. The book also includes descriptions of some caving areas of Britain, the caving safety code, a list of cave rescue organisations in Great Britain and procedure to be followed in cave rescue work.

A new idea for cavers

JOHN HOPES HIS DIARY WILL HELP TO CUT ACCIDENTS

From a room in a quiet Georgian terraced house at Bath, 22-year-old **John Dryden** is launching an enterprise to make publishing history.

In the one-man role of publisher, editor, advertising manager, circulation department, accountant, fact investigator and secretary, he has published the world's first caving diary with a print of 2,000.

Mr. Dryden, who works in advertising and lives at 1, Beaufort East, Bath, first decided two years ago that a caving diary would be an ideal means of getting information to established cavers, and safety hints and guidance to novices.

For nine months he has worked hard to get it ready. There was no up-to-date list available of British speleological clubs, addresses of current club secretaries, meeting dates, membership, or accommodation prices at clubs.

£70 BILL FOR INFORMATION

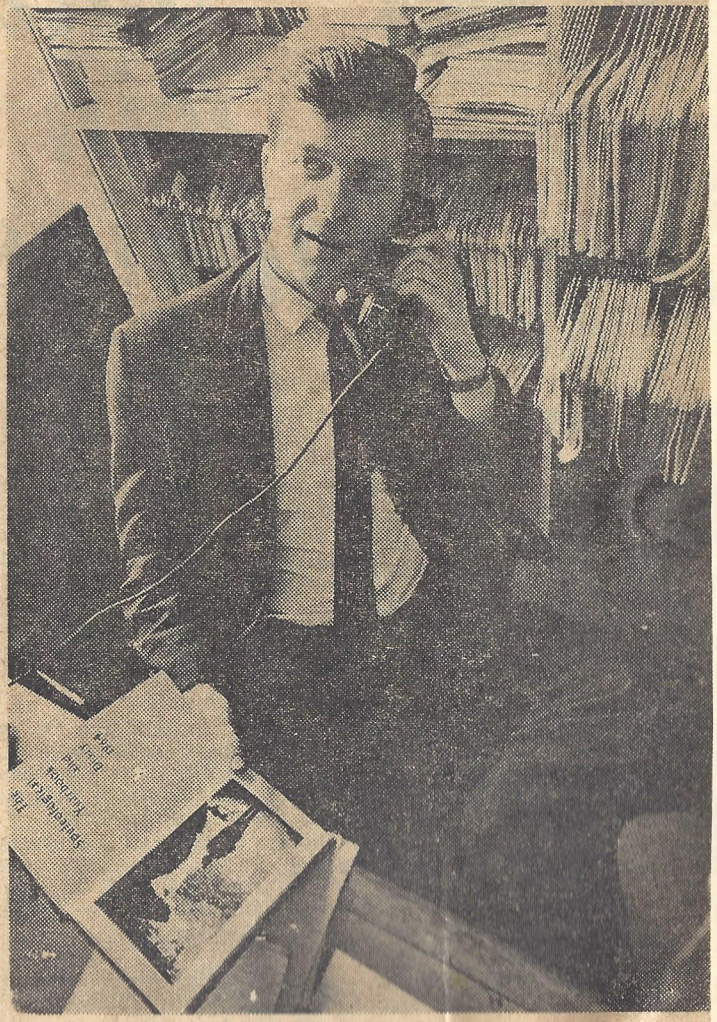
He spent £70 on postage to get his information and persuade a caver from each region to write a concise article on the caving attractions of his area.

Then, with no official sponsorship, he prepared his diary, arranged the printing and binding, and found advertisers to help cut costs.

Now, with only one month of the year gone, just 600 of his 2,000 copies are left unsold. He estimates there are some 5,000 cavers in Britain, and speleology is increasing in popularity.

"I think I can sell 4,000 copies annually in a few years, and there will always be something new in the diary," he said. "My aim is not to make a profit, but to help speleology."

"This diary will help to cut accidents among people with little experience, and will help the public to understand us better."



John Dryden with his cavers' diary.

John, a member of Bristol Exploration Club and Gloucester Speleological Society, is so convinced of the value of the diary that he will send a free copy to any school which asks for one.

"The diary costs 11s. 6d., including 22½ per cent Purchase Tax. I believe it should rate as an educational book."

Feb 15th Evening Post.

Feb 10th Daily Express (AM). Evening Post (PM).

DOCTOR REACHES TRAPPED YOUTH

Express Staff Reporter

A CAVE rescue squad began to blast a way last night into an underground cave to reach an injured youth trapped 1,200ft. inside a mountain.

Howard Butler, aged 20, of Aberdare, Glamorgan, fell while he was exploring Lethrid Swallet cave.

He lay there for four hours while his friends wriggled to the surface to get help.

Dr. Noel Dilley, medical warden of the South Wales caving club, managed to reach him and gave him an injection to ease his pain.

But the rescuers had little hope of getting Butler out from the cave before dawn.

He has a broken rib and a crushed leg, and will have to be brought out on a stretcher.

TRAPPED CAVER FACES 3-DAY ORDEAL

Injured potholer Howard Butler (20), trapped in a Welsh cave, may have to lie there three days before rescuers can get him out.

Butler, who is 60 feet underground at North Gower, near Swansea, has a suspected broken thigh and rib.

He is lying on an airbed in a tent in a cave 4ft. 6in. to 7ft. high called Llethryd Swallett, attended by doctors in exposure suits.

The problem facing rescuers is to get a stretcher in to him —and then to carry him out on

Special small-diameter drilling equipment like that used in last year's German mine disaster to drill down through the roof of the cave has been sent for.

Butler, of Curry Street, Aberaman, went into the cave at 4 p.m. yesterday. The alarm that he had fallen and was trapped came at 7 p.m., and three doctors went down to give him morphine and blood transfusions.

Daily Mirror.

Feb 11th

END OF A 26 hr ORDEAL

INJURED potholer Howard Butler, 22, is hauled to safety after lying underground for twenty-six hours.

A hundred volunteers worked in relays to drag him along tortuous tunnels.

Some lay side-by-side in an underground stream as comrades pulled Howard over their bodies.

Howard, a laboratory assistant of Currie-street, Aberdare, Glam, fell while exploring caves near Parkmill, Glam.

He broke his thigh and a rib. His four companions—they had been photographing a cavern 100ft. below ground—raised the alarm.

Doctors crawled 500 ft. to reach him. They gave pain-killing injections and set his broken leg.

But the problem was how to get him, on his stretcher, along the boulder-strewn tunnel, in places only ten inches wide.

Tough little mining deputy Iorrie Thomas, 46, and a team from a Gorseinon colliery were brought in.

All were handpicked—short and slight enough to burrow their way along.

They blasted and drilled through the worst parts.

Howard Butler was taken to a Swansea hospital unconscious. Last night he was said to be "generally comfortable."

12.

Daily Herald.

Mountain battle is won

Rescue team blast way out of cave

BARELY conscious and drugged to save him from pain, the potholer trapped for 25 hours is carried on a stretcher into the open air. Helmeted rescuers help him on the way.

This was the moment of triumph last night for a small band of men who raced against time to bring 22-year-old Howard Butler to the surface after he was injured 600ft. inside a mountain.

Howard fell while exploring a cavern at North Gower, near Swansea, on Sunday. He broke a leg and a rib.

The tunnel to the cavern is so small, winding and full of boulders that normally it would have taken three days to carry him out.

And doctors knew Howard's strength was fading.

ALL OUT

Yesterday 18 men—miners, explosives experts and pothole rescuers from all over the country—worked in three shifts to speed up the rescue.

For the last 200 yards to the surface they blasted boulders with dynamite to widen the tunnel.

German miners from a nearby pit helped. So did tiny Iorrie Thomas, five-feet tall and weighing eight stone.

He clambered into crevices where no-one else could get to drill holes for explosives.

IN WATER

Yard by yard Howard, of Currie Street, Aberdare, Glamorgan, was brought to the surface.

For much of the way rescuers lay on their back in an icy underground stream to pass the stretcher over their heads so that Howard would be protected.

At the cave mouth he was wrapped in blankets warmed by an open-air log fire.

Last night Howard was said to be "quite comfortable" in hospital.

Feb 11th Daily Express.

IORRIE THOMAS
Explosives expert

HIS BANGERS CLEAR WAY FOR RESCUE

Express Staff Reporter

A HUNDRED men formed a human cushion in the mud and rocks of Swallett Pothole yesterday to bring out injured Howard Butler.

Volunteers for the rescue bid were called for after doctors decided that 22-year-old Butler, lying 600ft. inside the hillside near Swansea, might not survive the long delay in drilling a new shaft.

And two hours later they brought him out alive, semi-conscious, encased in a protective plaster suit.

The long haul out of the dangerously narrow shaft had earlier been considered impossible. But that was before 46-year-old Welsh miner Iorrie Thomas arrived on the scene with a pocketful of explosives.

Police called out all other workers as 5ft. 1in. tall Iorrie—an expert shot firer—burrowed his way in.

His job was to drill holes in the jutting rocks and boulders and blast a path for doctor and rescue teams.

Lying on his back, he filled the holes with 2oz. plugs of explosives, put his fingers in his ears, and bang! — he was another 20ft. in.

Nine times

Nine times in all he shattered the rocks.

And 12 times Iorrie came up for air. He said: "It's suicide in there. Worse than any pit I've worked in since I was 14."

While the miner worked, Butler, with chest injuries and a fractured thigh, was given blood transfusions and morphia.

Doctors who stayed with him had laid him on an air bed, keeping him warm inside a plastic tent.

At 3 p.m.—exactly 24 hours after Butler, of Curry-street, Aberaman, had crawled into the pothole with a party of friends—the decision was made to haul him out.

The hundred volunteers took up their positions, lying on their backs in the ice-cold water.

Inch by inch the injured man was pushed over their bodies. At times the gap was only 18 inches high.

As he passed over them the volunteers — miners, firemen, doctors, policemen—joined the long queue crawling back to the surface.

'He's safe!'

It was almost dark when the cry went up: "He's safe!"

An ambulance was waiting and Butler was taken to Swansea hospital.

Dr. John Hudson, who had spent the night down the hole, said: "It has been a remarkable rescue operation. But the lad's condition is far better than we expected."

Last night a hospital spokesman said: "Butler will have a chest X-ray in the morning."

Sa 22nd **Buddles wood.**

H11 Phil Romford, Bob Craig & Self went down & looked at the rift in a little more detail. Climbing the height & length of the natural rift it was found that it was in fact higher (nearer the surface). Gordon Tilly, Neal McShane & John Cornwell came along as observers.

It was at this point that we met Eyle the Waldegrave Estate Game Keeper - we went back to his cottage on Eaton Hill to see his estate map where we met Earl Waldegrave. After some discussion it was decided that the MCR would issue permits for the Waldegrave Estate.

Castle Farm Dig.

Gordon Tilly took me to the entrance of this dig. I must go again & use Gordon's information for a registry sheet.

23rd **St. Cuthberts.**

Phil Romford, Bob Craig & Self; leader Barry Lane.

A very fine trip round the cave ($3\frac{1}{2}$ hrs). The aim of the trip was to bring out the Inabbly dog (taken from Stal Pitch & left for us in The Dining Room).

Interesting places visited were - Mr. Marriotts dig above the Dining chamber - dig is in very loose rubble, scree etc & is very easy to dig. Rift gets lower & tighter and a crossroads near the end is reached - new dig is at left although it is possible to go right.

Lake chamber - in Cerberus Series - water level was quite high about 6 ft below the tube which leads into it. The water is known to rise higher and to go lower - no possible way on.

25th. Phil Romford & Bob Craig elected as diving members and George Pointing & Self elected as Non-diving members of the C.D.G. I have to prepare the index of sumps & submerged cave passages etc.

March 3rd Preparation of lecture for Grandmens Association for March 10th.

Cave Physics.

@ Meteorology. (i) This concerns the circulation of air and water.

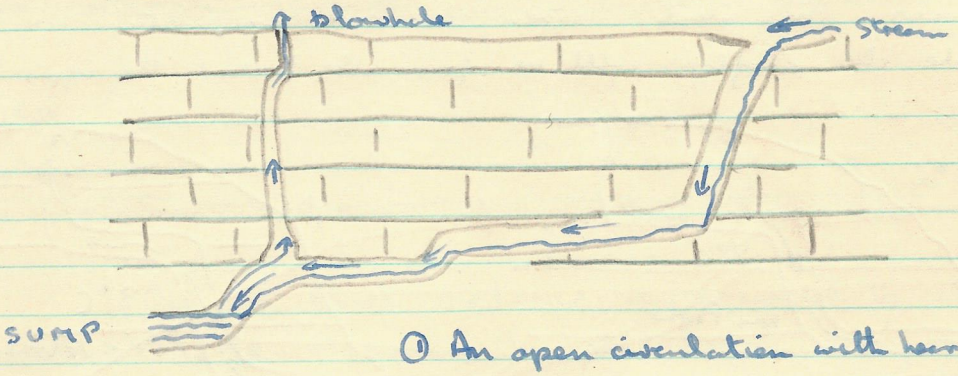
It is commonly thought that bad air is often found in caves - so much has been reported in the popular press of bad air in old mines that the assumption of the general reader is that this applys to caves also. In fact this idea is quite incorrect as foul air is not often encountered in caves and a poorly ventilated cave is a rarity.

An example of foul air in a local cave was in Hamb Beck when Brig. Glennie digging in a mud filled passage broke into pockets of foul air in the mud caused by rotted vegetation which had been trapped and released. The best indication of foul air is a candle - when bad air is present the flame will be reduced in size and will not burn upright - as the air becomes fouler the flame of the candle will become smaller until it finally goes out.

In addition to this rare case of finding bad air it is known that in constricted places in a cave the air being used up is used 1½ times more quickly by a person with a carbide lamp than by a person with an electric lamp.

In an active cave system, i.e. where there is a stream still acting as an erosion agent, the agent for the circulation of air is the stream. Air is in most cases carried along the surface of the stream through the friction between the air and water surfaces. At waterfalls the air is dragged down in the form of bubbles. Air flow usually follows the direction of the flow of the stream.

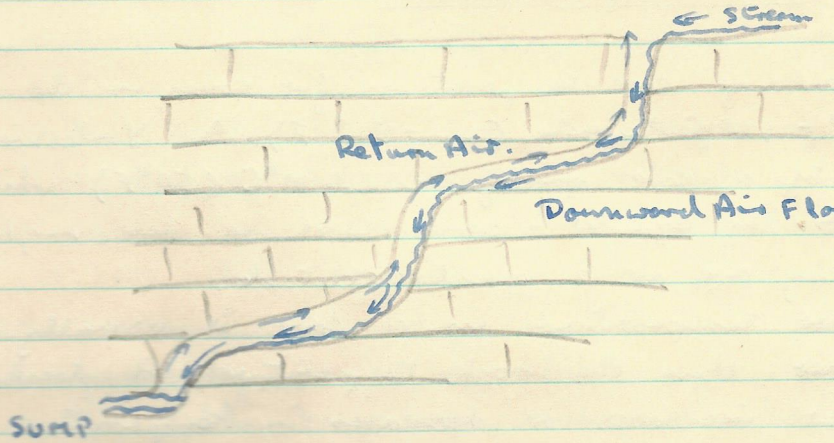
In a large system which has a stream from the entrance to a sump (ie. a place where roof and water meets). The air is drawn in and taken along the stream in the way before mentioned and from the sump is returned to the entrance by which it came in or out of another entrance.



① An open circulation with heavy water flow.

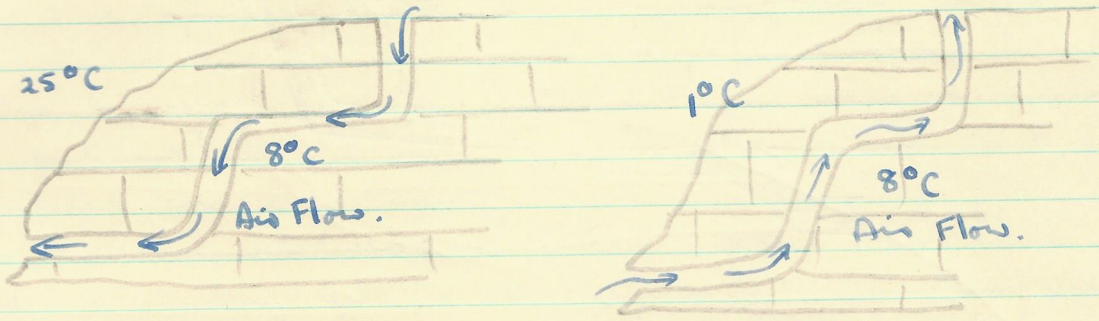
In a system with only one entrance and which ends in a sump the air goes to the sump and out again by the same entrance. This out going air current will be a very level.

Quite apart from the frictional supply of air it is obvious that large volumes of air flowing into a cave must displace the same volume of air which will be forced out of the entrance. This effect will of course be greater as the stream increases in size during times of flood.



② Closed circulation with heavy water flow.

An interesting case for air currents in caves is one where a cave has two entrances at different levels. The direction of air flow will depend on the difference between the cave air and the outside air. If the cave air is colder than outside as is usual in summer the air will flow from the upper to the lower entrances. In winter when the cave temperature is higher than outside the airflow will be from the lower to the upper entrances.



SUMMER WINTER.

The above can be studied in Burrington Combe at Goatchurch Cavern.

The simplest way to test air currents in a cave is by using smoke produced by firing a charge of flash powder.

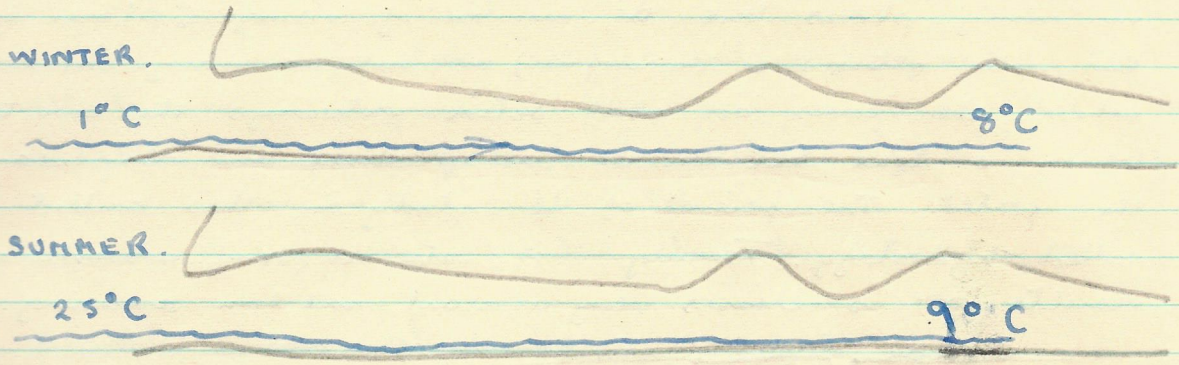
(ii) Concerning Temperature

The average cave temperatures for caves in the Mendips area are 8° - 12° Centigrade (46° - 54° F). In Yorkshire the temperatures of a cave rarely exceed 10°C (50°F) whilst as one travels towards the equator - caves tend to have higher temperatures even though they are at a greater altitude.

The air temperature in a cave is usually (not more than 1°) higher than the rock temperature. A stream entering a cave either increases or decreases in temperature according to the inside and outside temperatures.

Viz. In winter the outside temperature is colder and so

the stream becomes warmer on entering a cave. In Summer the stream is cooled.



Only a short distance is required to change the temperature of the stream. In the lower diagram these actual temperatures were recorded in a cave in Scotland (Uamh an Tartair) - The cave was full of fog.

From the fact that only a short distance is required to alter the temperature it is fairly safe to say that in Summer a very cold spring is part of an extensive underground system - and likewise this spring will appear to be steaming on a very cold winter day. A superficial stream and spring will have much higher temperatures in summer and much lower ones in winter.

(iii) Lightning.

The conductivity and the degree of ionisation of cave air is higher than that of outside air. Extensive work of this nature has been carried out by Felix Trombe in France. It is here that notice has been taken of the fact that trees around the edges of pot holes (cave air rising) are most frequently struck by lightning.

Noticeable happenings have been in La Henne Mort in Pyrenees a cave lit off the ladder & in USA two cavers caught a shock whilst surveying with steel tape deep underground.

(b). Water Tracing.

In limestone it is usual for water to sink in many places but the number of risings (places where this water returns to the surface) are not so many. In areas where the caves are still active waterways the cave tends to be in a line between the dissapearance and reapearance of the water. The science of the study in this content is called hydrology. Tracing this water is very interesting and results are sometimes very unusual and even amusing.

In this diagram we have a hypothetical cave system. Water sinks into the ground by way of a cave entrance at A and starts on its journey through a known cave system and can be followed until point B where the cave finishes and can be followed no further. Nearby at the edge of the hill is the entrance of another cave D from which a stream rises. If followed back into the hill water can be found coming in through a two inch crack at point C.

What is now wanted is proof that B-C is a direct link viz. That water at B is that which reapears at C.

The best way to do this is by using a chemical dye. The testing reagent should be:-

(i) Soluble in neutral, acid and alkaline solution.

(ii) Not be absorbed in calcium carbonate, peat, sand & clay.

(iii) Non poisonous to fish & animals (including man).
(iv) Not be objectionable (not foul smelling).

Although there are several ways of testing the most well known is by using flourescein (green). This is placed in water at point B and the methods of tracing it at point C are:- 1) by waiting and watching.
2) by using activated charcoal + laboratory tests.

Examples of these methods are:-
(i) Short Distance. Up to 400 yds. ¼ oz - 4 oz. Time taken not usually more than 12 hours.

(ii) Medium Distance. Up to 1 mile. approx 2 lbs. Dye usually takes from 24 hours - 14 days but will be visible usually for several hours when it reapears.

(iii) Long Distance. greater than 1 mile. Any weight of flourescein according to distance. Such a wide range that averages cannot possibly be worked out.
An example is:- TROU DU TORO (France).
120 lbs put in - this reapeared in a distance of 2 miles in less than 24 hours and coloured the river Garonne for 32 miles.

There is also a story of this type of test in France where the village fountain and water taps poured green water for several days.

c) Four Electrical Resitivity.

The most common system is the 4 electrode method where the electrodes are placed symmetrically in a straight line. Electric current is passed through the 2 outer electrodes and the amount of voltage

drop between the two inner states is measured together with the value of current flowing through the two outer electrodes. This allows the resistance of the ground traversed by the current between the two inner electrodes to be calculated.

The formula for the apparent resistivity is

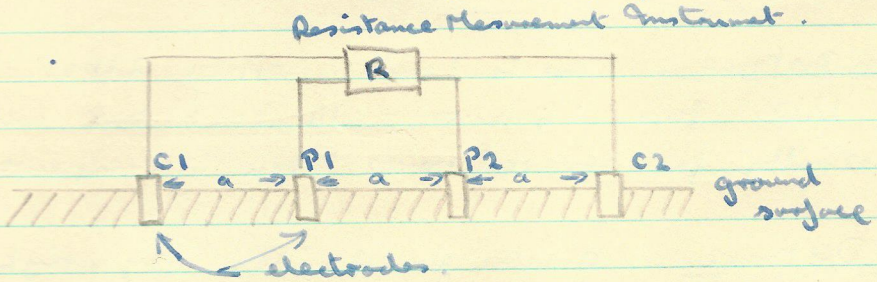
$2\pi a R$ ohms-cm where:-

a. is the distance between electrodes in cms.

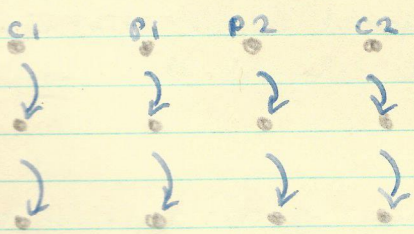
R. is the calculated resistance in ohms.

It has been calculated that the depth measured by this method is appreciably less than the distance between electrodes.

Two Methods of applying this method:-

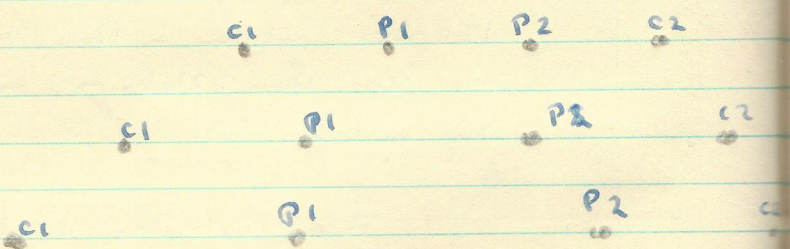


Step Traverse



This method for large area resistivity at some depth

Expanding Electrode.

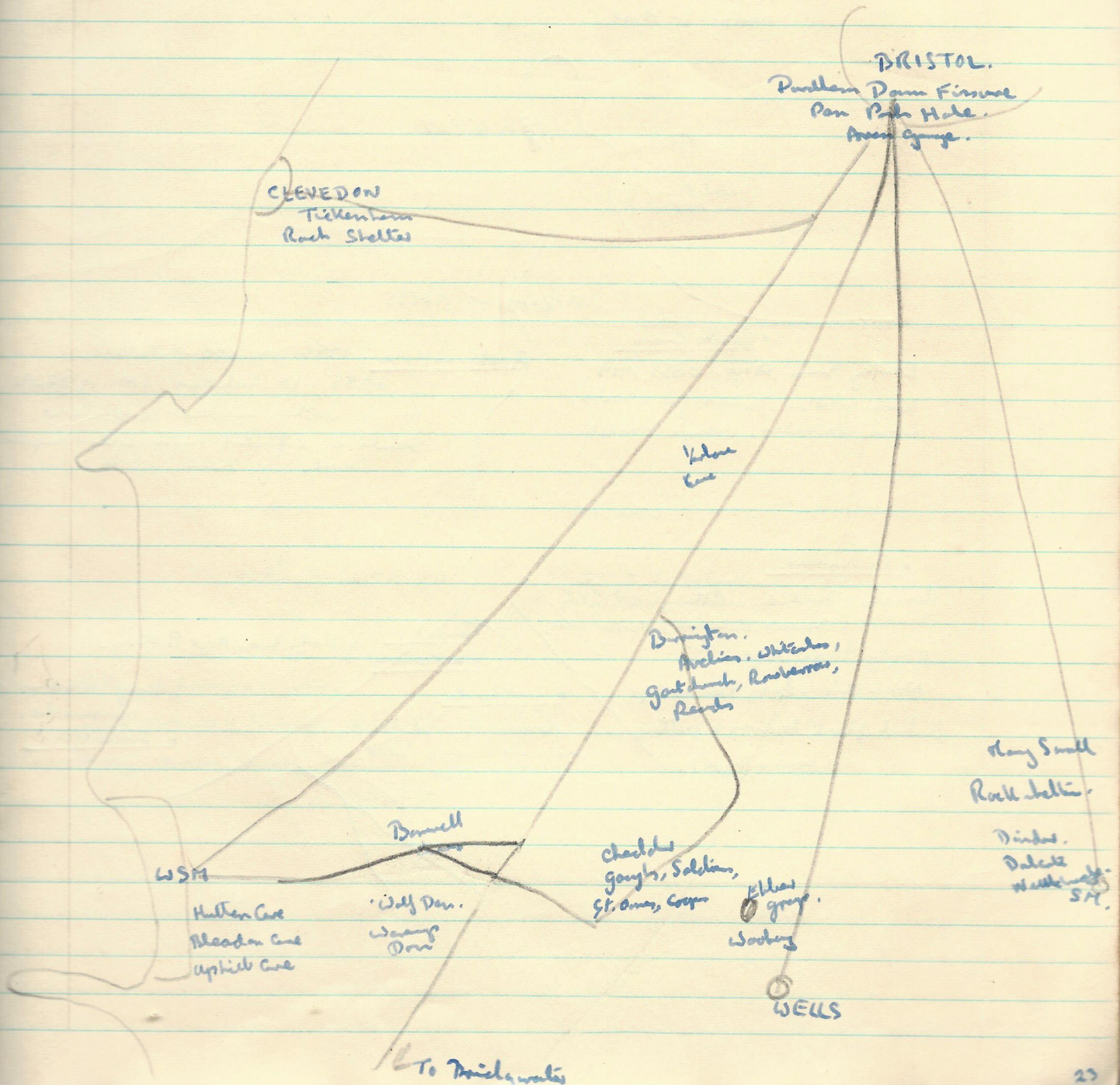


for use in the same place to obtain information at a greater depth.

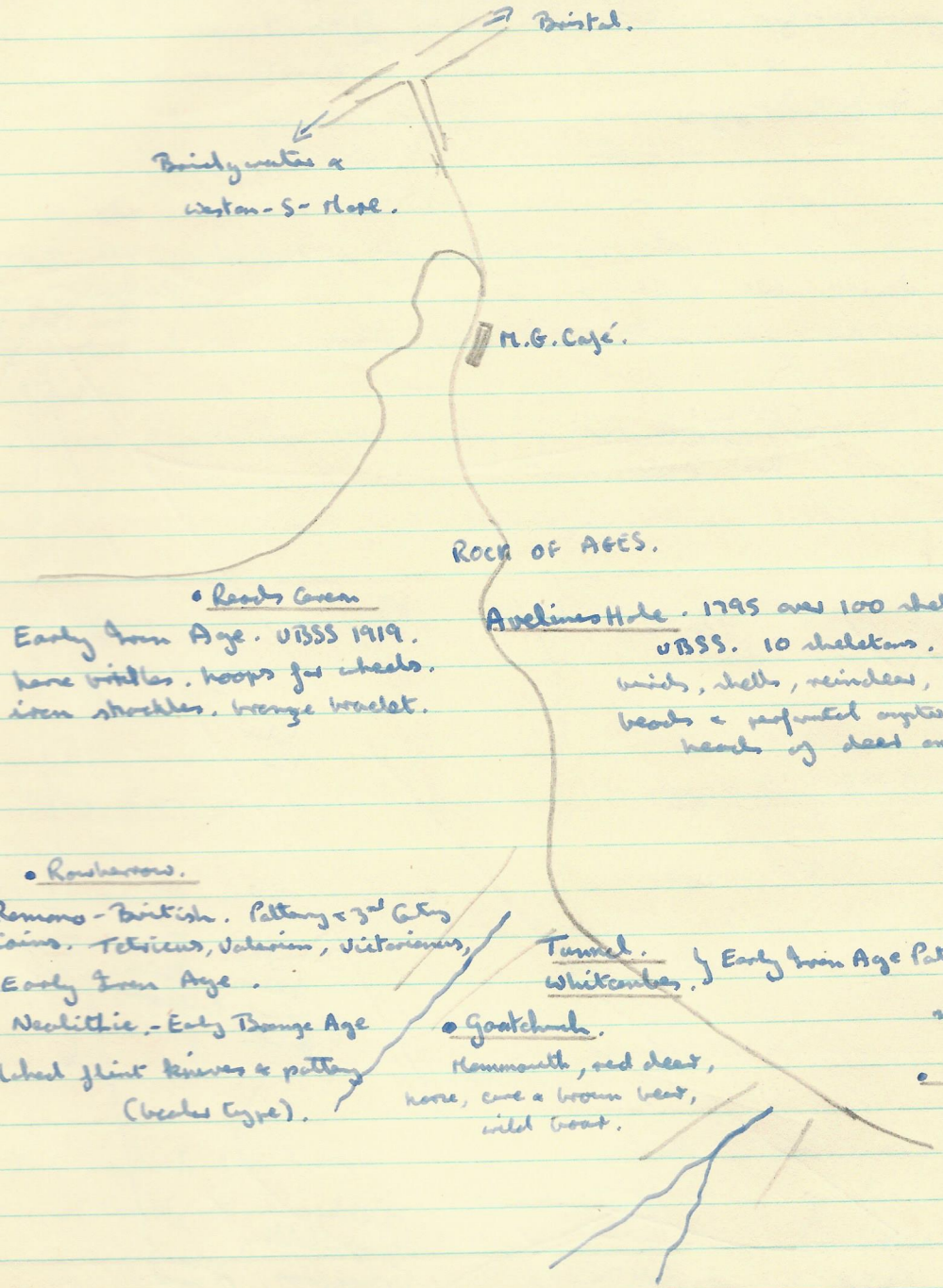
Cows give a higher reading; greater resistivity. Recorded as a graph. Work done in this area by the late Prof L.S. Palmer of Wells Museum who found Ben Park Hole and who did a great deal of work over hard test.

There is also a gravity method but cost of instruments is as high as £3000 whereas an electrical resistivity instrument can well me made for a lot less than £100.

Cave Archaeology.-



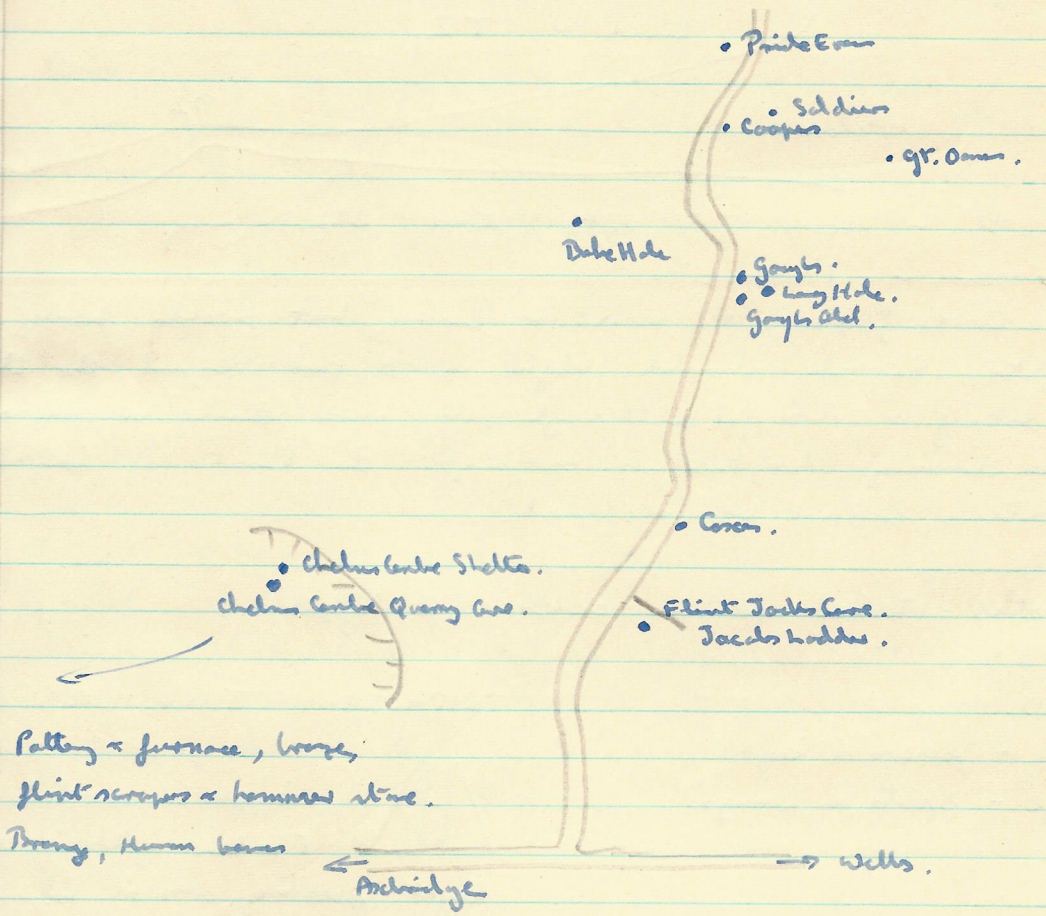
Burrington.


Bristol.
Bridgwater & Weston-S-Road.
M.G. Café.
ROCK OF AGES.
• Read's Cavern
Early Iron Age. UBSS 1919.
bone bottles. hoops for wheels.
stem stockades. bronze bracelet.
Aveline's Hole. 1795 over 100 skeletons.
UBSS. 10 skeletons. 100s of flints.
knives, shells, reindeer, brown bear.
beads & perforated cyprea shells - harpoon
heads of deer antlers.
• Rowberrow.
Romano-British. Pottery = 3rd Cent.
Coins. Tetricus, Valerian, Victorinus,
Early Iron Age.
Neolithic - Early Bronze Age
flaked flint knives & pottery
(beaker type).
Tunnel.
Whitcombes. } Early Iron Age Pottery.
• Goatchurch.
Mammoth, red deer,
horse, cave & brown bear,
wild goat.
many remains of
animals.
• Fossa Hole

Cheddar. Coins found in Cave. GOLD. Valentinian II. AD 375

SILVER. Julianus AD 325. Constantine II. AD 324. Nero AD 54 Brass.

Claudius II 268, Valens 364, Gordianus 238, etc. etc.

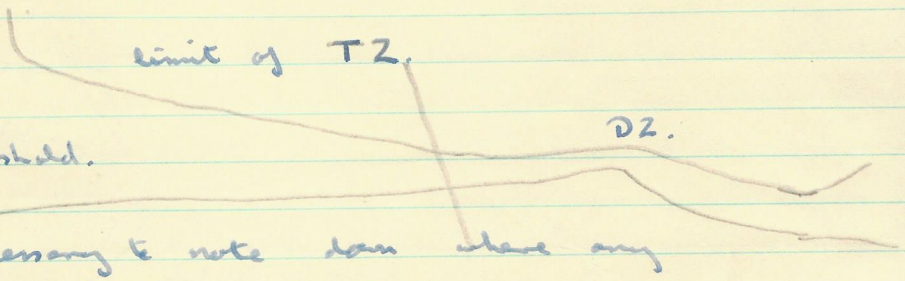


Cave Fauna.

Cave animals in this country (except Badger and Bat) are very small. The collection of cave animals is a subject very much overlooked although there is plenty to do.

Materials needed are:- paint brushes, pipette, tea strainer, 1 doz 2" test tubes, 2fl oz 4% alcohol 2 fl oz 5% neutral formalin. Note book, pencil & penknife.

Collecting:-



It is necessary to note down where any specimen is found.

Cave fauna is moisture loving but avoids heavy droughts. Search should begin in a cave beyond the threshold and out of a draught although no place should be overlooked - collect during daytime as in night the limit of light penetration cannot be recorded.

Moths - hibernate in caves 2 types

HERALD.
white - feelers & legs.
Orange - spots on wings.

TRIPHOSA. Tissue Moth

Appears in several colours. Flesh coloured with light passing over it in certain directions.

Fish -

None as such in this country although in Ogof-y-Ci near Merthyr a exit cave of Cwm Pull y Rhydd trout have been found after being trapped in pools - these fish have become white & have had films growing over their eyes.

Slides.

[illegible]

[illegible] 1. Stream passage OFD – air flow – etc.
2. Goatchurch upper entrance SUMMER & WINTER.
3. Sink in Afon Nedd into Bridge Cave.
4. Sink in large depression above Ystradfellte.
5. Entrance to Mutton Pot.
6. Resurgence to OFD.
7. Icicles – Stoke Lane.

Archaeology.

8 Ebbor Gorge } Wookey etc – Shelters. H.E. Balch
9 Ebbor Gorge } work of MNRC et al. Dawn of Prehistory.
10 Banwell Bone Cave > Beard bone collection.
11 " " " } Ashbridge CG & AS.
12 " " "
13 Map of Burrington Combe (notes as per p 24)
14 Entrance Reads Cavern –
15 Map of Cheddar Gorge – Names of Caves & finds etc.
16 Magdalenian Flints – Gough's. 1-5 Backed blades, 6-9 end scrapers.
10-11 Composite Tools. 12 Awl & Scraper. 13/14 as 1/5 & burin. Rest burins
17 Animals. 1) bear, 2) Reindeer. 3) Fossil Horse. 4) Hyena. 5). Irish Elk
6) Wolf. 7) Cave Lion, 8) Beaver. all from Cheddar. Gough's & Soldiers.
18 Coins. 1/2 Gold 375 AD. 3/6 Silver 238 – 325. 7/22 Brass 54 – 367 AD.
Nero – Gratinus → Valentinian → Gordianus, Julian, Constantius 2nd.
19 Pottery of Romano-British Cave Dwellers
20 Iron weapons of R. Brit.
21 Cheddar man 10,000 – 12,000 yrs old.
22 Flints – Weapons etc.
23 Cave of arch interest Minchin Hole – Gower.
24 Iceland } G. Clare. Rock Shelter.
25 Iceland } Hut circles.
26 Dig at Green Ore.
27 Dig at Green Ore.

Fauna

28 Asellus - water louse
29 Niphargus - shrimps
30 Cyclops - Arthropoda - Copepoda. Crustacean
31 Blaniulus - Arthropoda - Symphyla. Millepede.
32 Trechoblemus - coleoptera - Insect. Beetle
33 Pomphamia - Sheet Spider.

Bats

34 Greater.
35 Lesser.
36 G H in flight
37 Ringing.

General. 35mm

38 Gough's Cave } formations
39 Gough's Cave }
40 Pebble beds - Quaking House Cave.
41 }
42 } Hillier Cave - formations.
43 }

Expedition photographs of 1963 Bergy Expedition.

44 Bergy - surface.
45 straddling a passage.
46 Stals + gours.
47 " "
48 " "
49 formation column.
50 Cascade.
51 Camp.
52 Canal to Sump.
53 2 Divers.
54 S. Wynn Roberts.

Cromwell's General

55 Diver in full kit.
56 lead belt & battles.
57 face mask & hood.
58 Buxton fitting up for Wookey Dive.
59 Fred Davies in Wookey on Oxygen.
? } Several old
Diving Slides - F.G. Balcombe.

60 Cheddar Gorge.
61 Water discining.
62 lead tunnels - Cuttlebarts.
63 lead gulley - Cuttlebarts.
64 Ent. Cuttlebarts.
65 Ent. Right. Cuttlebarts.
66 Stal & Stag. Cuttlebarts.
67 General Cuttlebarts.
68 Curtain. "
69 Mud deposit. "
70 Duck "
71 G.B. Main chamber.
72 G.B. Helectites.
73 G.B. Pillar.
74 Balch. entrance looking in.
75 Balch. entrance looking out.
76 Balch. Photographers Procline.
77 Balch. small gauze & straw.
78 LL. ladder
79 LL. Man on ladder.
80 LL. St. Vals.

March 7th CDG trip to dig the Sump in Cuthberts - new passages found by Connell, Phil Davies, Phil Rayford & Bob Craig. Details not available even to the BEC but I expect that something will be heard later.

Meeting of CCC at E. Speeds in evening. UBSS not to pay 25% of lowgear fees & the rest to be divided into ten parts. NWRC have not paid £10 subvention. Also send Treatty 9/- to cover rubber stamp (Temporary).

8th Lamb Law.

A booked SMCC trip. A dentk walk was arranged and used by Phil Rayford, S. Wynne Roberts, B. Ellis, Fred Davies & Self. A fine trip around the cave, even Ray went down the pitch - to the end of Valentines and to cave of falling waters.

Too cold for dip in the pool.

11th Cave Registry.

Held at E. Speeds at 7.30pm

14th St. Cuthberts.

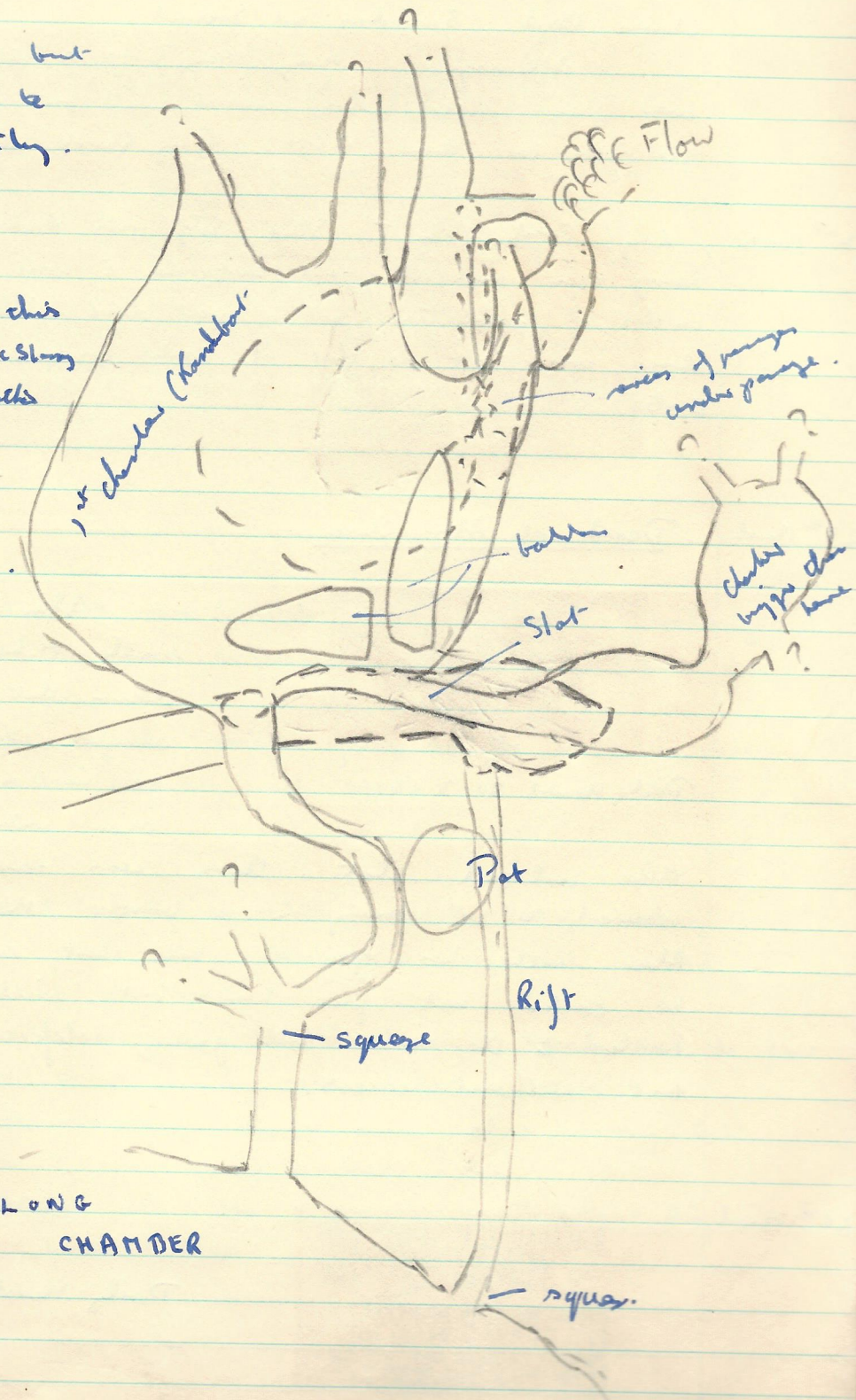
Ray, Gordon Tilley, Self & B.N. others. Worked for approx 1 hour clearing boulders from the bottom of the new entrance shaft. Still plenty to do before the job is completed.

15th St. Cuthberts.

Self & Steve Wynne Roberts joined J. Connell, Ray & Russ at top of long chamber. Steve & Self went into a squeeze and then left into a rift passage through a boulder maze into a fairly large chamber. From here many openings were followed - many ways on - Several chambers and passages found and approx 1 hour spent looking around the series of boulder mazes. See survey on next page.

Many ways on but very difficult to remember exactly.

After coming out of this complex Steve, Noel McSloy & self went up into another chamber from the right (with helictites found by Phil Davies & J Cornwell on 7th. 3.64).



Longwood Blockhouse.

21st March. Lecture in Wells Museum on Finding New Cave Passages by Oliver Lloyd. Swildons and Ireland

Afternoon. Ray, Ken Dove & Self - blockhouse building. Took over from REC who worked well in morning but were off in afternoon for their AGM. Ray Quick shovelled cement with Tim Atkins.

22nd March, Ray, Fred, Mike T, Steve, Self with Andrews Baker looking on. Due to heavy rain and the fact that the E wall needed on extra few inches of foundation not a great deal of work was done but the place was left so that it could easily be completed (walls) next Easter.

29th March. Death of Alan Clegg.

Pothole death

Alan Clegg, aged 33, died yesterday 300ft. down the Lancaster Pot—Britain's deepest pothole. He lived at Burnley, Lancs.

Daily Herald 30.3.64.

Alan was diving in harness with Mike Boon & another. It seem that Mike Boons line was caught up and Alan decided to go in and free it. This was in open water. After a few minutes Mike noticed that there was something wrong as the bubbles seemed to be coming in a burst. He went in and found Alan with his gay on his chest, caught up in some boulders, he could not free him but within 2 minutes Alan was hauled to the bank and given artificial respiration for 2 hours but without success.

29th March

Pothole rescue

A six-hour pot-holing rescue ended last night with 17-year-old Derek Gregg being dragged on a stretcher from tunnels under Mam Tor peak, Derbyshire. He lives at Salford, Lancs.

Daily Herald 30.3.64.

4th April. Daily Mirror.

Thief traps five potholers

FIVE potholers were trapped at the bottom of a 60ft. shaft for six hours — because someone stole their safety lines and ladders.

The potholers, from Barrow-in-Furness, Lancs, had spent the weekend in Barpot, near Ingleton, Yorks.

The first hint of trouble came on the last stage of their climb out.

They found that safety lines, which had been alongside a rope ladder, had been untied and dropped to the bottom of the 100ft. shaft.

One potholer, Gerald Dodd, 20, of Ramsden-street, Barrow, made a perilous lone climb up the rope ladder and fixed the safety lines at the top so that the others could follow.

But when the five reached the 60ft. shaft leading to the entrance to the pothole, they found that their safety lines and ladders had been taken away.

The youngest of the five potholers, 15-year-old John Wignall, of Dudley-street, Barrow, said yesterday:

'Every so often we blew four blasts on a whistle—the recognised emergency call for potholers. We were there about six hours before being rescued by members of the White Rose Caving Club."

6th April. Wigmore Farm.

Visited the two Swallets above the new farm building and Wigmore Swallet (now very much collapsed). Mike T. thought that this might be a good dig.

The pit on the right going up the track is now almost filled to the surface with earth.

Oakhill.

Mike T took us to a swallet about 300 yds along the road from Oakhill to Stoke Lane. Swallet in large and wooded in field to the right of the road.

Swallet was taking a Swildons size stream and the floor of the swallet was very muddy and like a sieve.

Hoy a Thrian are going to do some water tracing tests here and Mike T is going to start a dig.

Maybe SRCC will take over George Pointips dig at Hyena Hole in Lamb Bottom.

5th April.

MOCK POTHOLE RESCUE BECOMES REAL THING

Daily Telegraph Reporter

A mock rescue turned into the real thing at Carlswark Cavern, near Stoney Middleton, Derbyshire, yesterday. Derbyshire Cave Rescue Organisation had brought out a "victim" when they received a call that a potholer was really trapped.

A full-scale operation took four hours to bring out John Todd, 26, a potholer, of Sycamore Howe Road, Sheffield. He was trapped in a narrow cavern 600ft from the surface.

He was later admitted to Sheffield Royal Infirmary.

Daily Tel.
6.4.64.

11th April. SMCC Annual General Meeting.

Kay, Phil, Roger, Martin a Self elected. Martin a job as Caving Secretary a Self as Hut Warden. Steve put on the committee.

12th April. Mr. Ashworths dig at Green Ore.

Kay, Gordon, Barry a Self went over in pm to see just what Mr. Ashworth was going to do this year on the dig.

The old site is now filled in and a new site has been started in the top right hand corner of the field.

This field and the one immediately below it have recently been ploughed and an enormous quantity of material has been pushed to the surface.

On the grassy ground above the dig the moles have done exactly the same thing.

8th April. Evening Post.

Rhino teeth, flint found —in the Mendips

Some rhinoceros teeth have led archaeologists to one of the most important finds on the Mendips this century.

They were discovered near the concealed entrance to a cave on Crook's Peak. Since then, some human teeth at least 15,000 years old have been unearthed, as well as the teeth of hyenas, horses and a cave lion.

"I have been assured that this is one of the most important discoveries on Mendip — maybe in Britain—this century, as far as the pleistocene period of history is concerned," said medical student, Mr. Michael Picken (22), who found the cave three years ago.

Since then, members of Bristol University Speleological Society have been exploring and excavating the site in their spare time, with few other people aware of the nature of their project.

Other finds there include pieces of flint. "No flint has ever been found in this part of Britain before," said Mr. Picken. He is the only son of Mr. and Mrs. John Picken, of Lyppiatt Lane, Shipham, Winscombe.

Now a student at Sheffield University, Mr. Picken is a keen amateur naturalist.

"Three years ago when I was looking at a badger's sett near Compton Bishop, I uncovered some rather curious looking teeth, took them to the Museum and was later told they belonged to a rhinoceros," he said.

Later he took Prof. Edgar Kratman, an archaeologist and former member of the staff of Bristol University, to the site. It was discovered that the sett was above the narrow entrance to a cave.

"It may take another 12 years to reach and explore the cave fully," he said.

19th Apl. **St. Cuthberts.**

Steve, Barry, Phil, Bob, Kay, Dave Savage & self went to the sump & Steve & Barry climbed the end of the Gour Rift above the sump. Rift too tight and no way on found. Went then to the Great Gour and climbed to about 100 ft. Too difficult to continue using pitons and attempts with a maypole might be worth while.

26th Apl. **Swildons.**

Trip to Sump 1 with Phil in order to take a few photographs.

2nd May. **CRG Southern Meeting.**

At Wells Museum at 5pm. Papers were, -
Caving in Arctic Norway & The Solution of limestone (calcite) at 10°C. Both will appear in Transactions.

3rd May. **Cuthberts.**

Down ~~through~~ lower Mud Hole and on then to Continuation chamber - Barry, Bob & Phil. After being unable to find the way on returned to surface.

9th May **Lamb Leer.**

Went down with a party of Fresh Scouts, Roger Biddle & self went up into St. Val. Dig and had a good look at the new extensions found the previous weekend by Speleo Rhal.

10th May **Burrington.**

Annual party trip to Goatchurch. Dick Dunster went as a monk and was by far the best dressed. Next year have plans for a real do. Abseiling on Rock of Ages accounted for a few hours etc.

Evening Post 29th Apl.

UNDERGROUND ACTIVITY

QUARRYING AS A BUSINESS AND CAVING AS A HOBBY

Perhaps because they spend so much time digging into the earth, anyway, not many quarrymen, to my knowledge, are also enthusiastic cavers or potholers.

An exception appears to be **Mr. Jack Hobbs,** a member of Bristol Round Table whose family business is quarrying. His introduction to caves, however, came not in the Mendips but in Cyprus when he was in the Somerset Light Infantry.

"We were asked to check a cave and the first things we found were the skeleton of a child and some 9ft snakeskins," he told fellow Tablers yesterday. "The caves there are easy because you enter on the level, turn right after about 20 yards and that's as far as you can go."

His interest thus aroused he has now graduated to the deeper British caves—some of them descending to several hundred feet—but he declares he has no intention of entering the seventh grade: "The super-severe cave."

One advantage he should have in caving is a practical knowledge of explosives—if ever he needs to blast himself out of a tight spot.

For he revealed that, in quarrying, 250lb of a plastic explosive drilled 60ft down will shift 7,000 tons of rock. Some time ago he had 4lb. of the explosive stolen—and the police comment was that it was sufficient to blow open 160 safes.

17th May | Hunters Hole.

A general Hunters trip with Dave Harris, Paul Allen & Patrick Horton. Trouble with lifeline to the last man and also in raising the ladder.

24th May | Hut & Waterlip Quarry.

After a weekend of work at the hut Bill Maxwell of chelsea called about 4 p.m and asked for some help to get a chap out of a cave at Waterlip Quarry. The cave is that one with the concrete floor near the entrance situated at the end of the pipeline. It appears that whilst digging the cave a fall of rock occurred trapping a bloke. Anyway after trying to jack up some boulders and jacking bath to raise just a ladder & told the chap to squeeze through and with a little help he did so.

6th June. | Swildons.

Trip round the oxbows with Ally, Bob & Pat in order to look the part for the cave rescue film. Films were taken in the barn and at the Telephone kiosk on Priddy green.

Meeting of LCC at Emmys at 7pm.

7th June | Swildons.

Rescue warning about 2.45p.m. Rescue call at 3.15p.m. Bob Craig & Self down cave by 3.45p.m. Got to end of Barnes loop (where the chap had fallen off) just in time to start on the hauling. Very quick and easy up 20' & 40'. Went up to the beginning of the short dry way and then with Jim Hanwell went back to the top of Jacobs ladder via the Wet Way. Came out of cave about 8.45a.m. Chap was out just after 9.15a.m.

Taken to BRI where he was stated to be as well as could be expected. Has a fractured skull

Evening Post 8/6/64

CAVER, 18, BREAKS SKULL

Storm traps party in Mendips

A vicar's son, knocked out when he fell 10 feet while deep in a Mendip cave, was still unconscious in Frenchay hospital today after an operation.

Soon after the accident yesterday, a fierce thunderstorm sent the water level up in Swildon's Hole, near Priddy, trapping a party of Wolverhampton potholers.

It took six hours to get 18-year-old Bruce Wilkins, of St. Bartholomew's Vicarage, Frankley Beeches Road, Northfield, Birmingham, to the surface. He fell when 300 feet below the surface and was taken to Bristol Royal Infirmary with a fractured skull, and was transferred to Frenchay. His condition this afternoon was "comfortable."

Fifty members of the Mendip Cave Rescue organisation were called to the rescue.

Bruce was a member of a party of cavers led by Mr. David Robertson, of Magdalen College, Oxford.

Mr. Howard Kenney, the well-known Mendip caver, said: "We carried him out all the way. He was a stretcher case."

Bruce's father, the Rev. R. J. Wilkins, arrived in Bristol yesterday.

The Wolverhampton cavers who were trapped got out quickly as flood water receded helped by pumps from a Bristol Waterworks borehole nearby.

Cave boy hurt

Eighteen-year-old Bruce Wilkins was brought out unconscious from a cave in the Mendip Hills, Somerset, yesterday, after injuring his head in a fall. His home is in Franley Beaches Road, Birmingham.

Daily Express

POT-HOLER RESCUED IN CAVE

RESCUE workers struggled for six hours yesterday to save an injured pot-holer lying unconscious deep inside a cave.

Last night the pot-holer, 18-year-old Bruce Wilkins, of St. Bartholomew's Vicarage, Frankley Beeches Road, Birmingham, was still unconscious in Bristol Royal Infirmary with a suspected fracture of the skull.

He was one of six young Birmingham pot-holers who were exploring the Swildons Hole caves in the Mendip Hills at Priddy, near Wells, Somerset.

They entered the caves just before midnight on Saturday, but three hours later two of them went for help when Bruce Wilkins injured his head in a fall.

Rescue worker Howard Kenny said: "It took six hours to get him out because the route was along wet, narrow and often vertical passages."

Daily Herald

8/6/64

Daily Mirror

SIX-HOUR CAVE HAUL SAVES BOY

FOR six dramatic hours, rescuers inched their way along narrow underground passages yesterday, hauling to safety an unconscious teenager.

The teenager, Bruce Wilkins, had fallen backwards while exploring Swildons Hole Caves, deep in Somerset's Mendip Hills, with a party of six potholers.

Two of the party immediately surfaced and ran for help. The others stayed with Bruce.

Strapped

And soon three members of the Mendip Rescue Organisation, Dr. Donald Thompson, Howard Kenny and Peter Riches, reached the spot.

Last night Mr. Kenny said: "Dr. Thompson at once did what he could for the boy.

"Then we strapped him into a carrying sheet, and with ropes began the slow job of hauling him to the surface.

"We had to be careful not to bump him. He was unconscious all the time."

Last night, Bruce, 18, of Frankley Beeches-road, Frankley, Worcs, was in Bristol Royal Infirmary with a suspected fractured skull.

Daily Sketch

Fifty men in cave rescue

A YOUNG potholer who lay badly injured for six hours after a fall in a cave 300ft. below the ground, was still unconscious in hospital last night.

Bruce Wilkins, aged 18, of St. Bartholomew's Vicarage, Wambley, Birmingham, fractured his skull when he fell 10ft. inside Swildon's Cave, Priddy.

Fifty members of the Mendip cave rescue organisation took six hours to bring him to the surface.

A doctor who helped carry Wilkins out of the cave said: "It was a serious situation, and if he had been left there much longer he would have died."

Wilkins was one of six potholers led by Mr. David Robertson, of Magdalene College, Oxford.

Evening Post 22nd June 1964.

Stalagmite smashed by cave visitor

A stalagmite which took 48,000 years to grow was broken in a second at the week-end.

It happened in Wookey Hole Caves, near Wells, and the owner, Mrs. Olive Hodgkinson, said last night: "It was a deliberate act of vandalism. I am going to bring an action against the man who did it for malicious damage.

"The man had to climb under a barrier to break off the stalagmite. He risked his life to get at it Had he slipped he would have fallen down a narrow ledge. If he had hit his head he would have had it."

Mrs. Hodgkinson said that the man belonged to a party of cave visitors whose guide left them to take out one of the party who felt ill.

For a girl?

"The other guides heard this tremendous snap which reverberated round the cave and there the man was with it. He said he admitted full responsibility.

"Whether he did it for his girl friend or not I do not know. I am taking the action as a deterrent to other hooligans. One must protect property against vandalism of this sort, otherwise we might as well leave the caves open."

Mrs. Hodgkinson has reported the incident to the police.

26.6.64 Depression 5696 5132. Rookery Farm.

Large Shallow depression with heavy undergrowth around the edges but sparse in the centre. This has a thick clay base and is very suggestive of being water filled during heavy rain. Lies very close to the H/Slate - ORS boundary - probably on the H/stone.

Depression 5758 5139. Rookery Farm.

A shallow depression of great archaeological importance in that 4 pigs of lead of Vespasian era were found. Dug by the MNRC under H.W.W. Ashworth from 1956.

Depression 5691 5157. Rookery Farm.

Old Iron mine - filled in. Enormous quantity of deads on the surface - depression is too shallow for it to have been an iron pit. Rusted wire hauling cable seen on the surface - very much fine calcite and ironstone visible on the surface.

Depression 5734 5103. Rookery Farm.

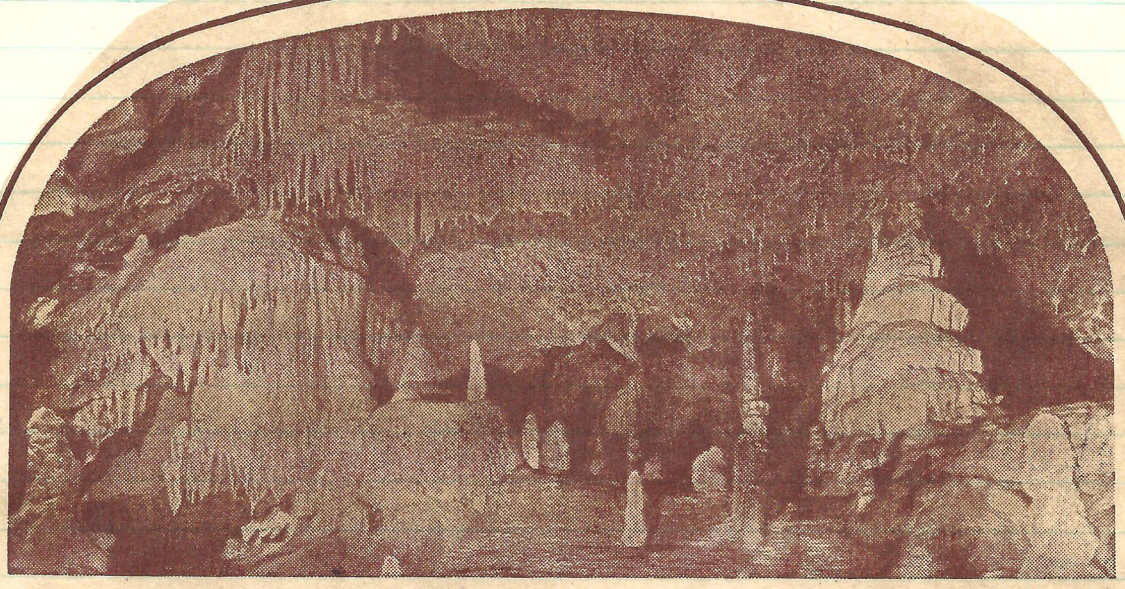
Large shallow wooded depression unusual in that it does not contain a pond neither does it look as though it ever contains much water or takes much water - many others in the area have ponds. less soil than others in the area.

Resurgence. 5740 5186. Tor Hole Bottom.

Water rises in two places within two feet. a). on the right through a stone casement into an iron pipe and tap.
b). on the left through a bank of earth.
Catchment area is Rodney Pits and Forge Hill plantation areas. Water drains into a roadside grid drain.

Torquay Wednesday 17th June 1964.

Bag advertising Kents Cavern.



TORQUAY'S FAMOUS CAVES

KENTS CAVERN

OPEN DAILY THROUGHOUT THE YEAR

WELLSWOOD, TORQUAY.

TELEPHONE 4059

Potholers in touch

Berger Expedition 1964.

Evening Post 18/8/64

CAVERS PUT PHONE IN FOR RECORD BID

The 12 members of the Nottingham cave exploring team, which races a Manchester team for the world underground depth record in the Berger pothole near Grenoble, in the French Alps, returned to the surface this morning after their first preliminary night underground.

Preparing for the start tomorrow, they spent the night installing 20 telephones

Meanwhile, members of the Manchester team of 30 led by Mr Kenneth Pearce, a 31-year-old metalurgist spent the night camped on the Sornin Plateau, about four miles from the pothole entrance in the Vercors Massir

They enter the world's deepest pothole on Saturday.

The record: About 3,680ft. set up in 1956 by Grenoble photographer Joe Berger

DODGING THE FLOODS IN DEEP CAVES

Evening Post 20/8/64.

Telephone contact was restored today with British potholers cut off from the surface in two parties yesterday by flooding deep in the Berger pothole in France.

Messages relayed to the surface said the men in the 24-strong team were all well and not unduly worried at the flooding.

One potholer on the surface said there was no danger to life.

The potholer said nearly all the team, led by a Manchester engineer, Kenneth Pearce, were still trapped underground at depths of 1,600 and 2,500 feet.

Swollen streams and underground lakes dividing the two parties prevent them from reaching each other.

MORE RAIN

The Pearce party is expected to make an assault on the 3,681ft. world underground depth record very shortly, the potholer said.

Torrential rain continued to fall in the Alps today, raising fears that the men would be cut off from the surface for a considerable time.

But they have enough food to last for a month. Mr. Peter Watkinson, leader of the 12-man team from the Nottingham Pegasus Club, who are leaving Grenoble today after abandoning their bid in the same cave, said the 24 men were camped in relatively dry caves which were never flooded out.

Abbé extraordinary

THE ABBE BREUIL, PREHISTORIAN: A Biography by Alan Houghton Brodrick (Hutchinson 30s)

By SIR MORTIMER WHEELER

THE ABBE BREUIL died in 1961 in his eighty-fifth year, after holding for more than half a century a unique position in the world of learning. More than any other scholar, he was responsible for the introduction of order into our picture of man's "progress," in Western Europe and beyond, during the long latter half of the Old Stone Age.

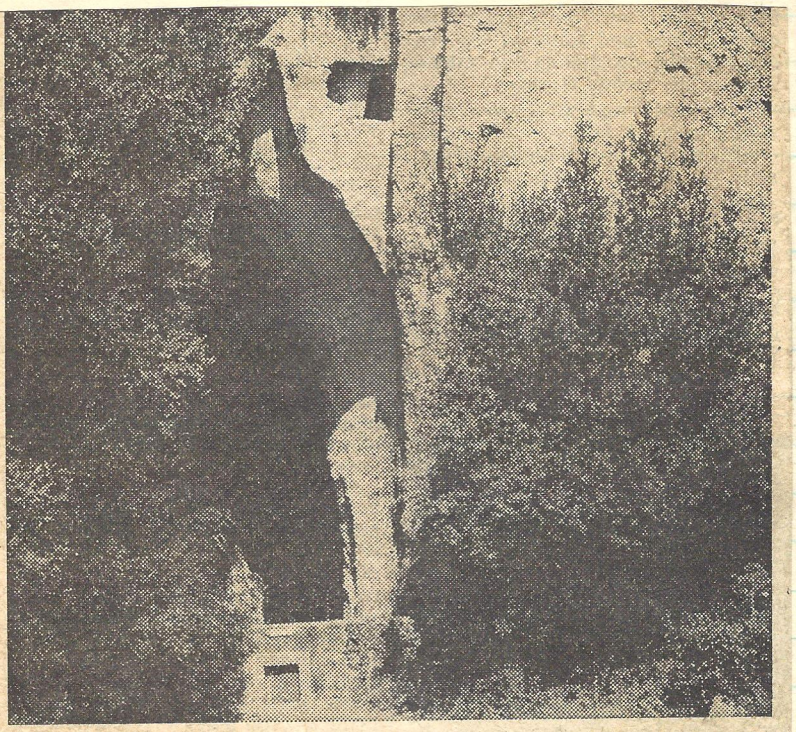
He was a genius. He became a legend while he lived. In his thirties he was already a pundit with a world-wide reputation for infallibility that was sometimes its own undoing. The first occasion on which I encountered his shrewd, fox-like face and piercing brown eyes was in 1912, when he had just returned from the caves of Gower with the news, announced a little pontifically, that he had found previously unsuspected traces of Old Stone Age painting there. "The Times" followed with a leading article by no means complimentary to the local antiquaries, past and present, who had thus been bypassed.

Breuil was in fact wrong; the "painting" was a purely natural staining. But it was an index of his greatness that he, like Petrie and Evans, could survive his mistakes unscathed.

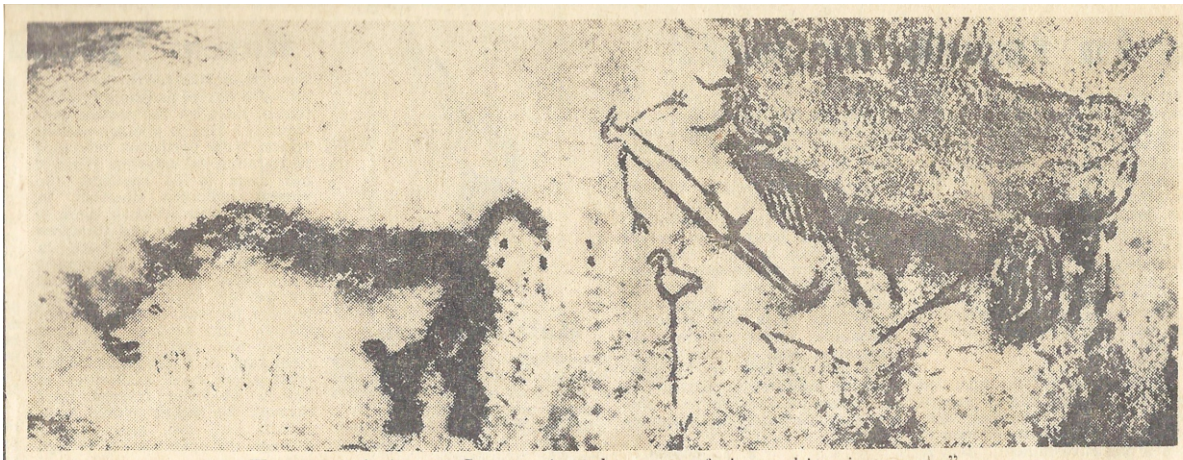
Again, on the last occasion on which we met, Breuil, after filling my menu-card with delectable drawings of cave animals as an accompaniment to unpausing talk, suddenly anticipated the coffee and brandy by covering the floor of the French Embassy with sheet after sheet of records made recently by him in South-West Africa. In the midst of them was his famous "White Lady of the Brandberg," which he surprisingly regarded as an unknown Cretan princess who somehow had found her way across Africa about 1500 B.C. No one except himself, I think, believed this, but no one could forget the charming and inspiring spectacle of the venerable little savant in his cassock leaping and scrambling about the floor with his eyes alight, pouring out a stream of assured and incisive comment.

The author of this timely biography has presented a very readable account of Breuil's long, productive and not unadventurous life, with sufficient background-material to enable the non-specialist reader to appreciate the nature of the major problems which Breuil set himself to solve —though "solve' indeed is probably the last word that he himself would have used, at any rate in private. "Science observes, ascertains, it does not explain," he remarks in one of his rare justifications of his free and objective approach to the old problems of religion and science. The chapter on "Breuil and Religion" throws a new but not unexpected light upon a little-known aspect of this remarkable priest who as a scientist took the world for his parish.

The Abbé Breuil: Prehistorian, by Alan Houghton Brodrick—A briskly discursive, occasionally contentious biography of a great man whose character, sharp and idiosyncratic, comes across with entertaining vividness. The Abbe's wide-ranging scientific activities are described without condescension or jargon. (Hutchinson 30s).



The first bug—the cave at Syracuse called Dionysius's Ear. Legend says Dionysius built a room above it for eavesdropping.



The cave-paintings at Lascaux in "the crypt of the prehistoric tragedy."

OUT-OF-DOORS: BY JAMES FISHER

The logic of Lascaux

IN THE wonderful cave of Lascaux, the Sistine chapel of early human art, the ancient hunters of Périgord in France portrayed their prey, inspired by the needs of magic, education and perhaps even science.

These images were hunting-lists; of course, Stone Age pictures are the first published lists of anything, if surviving portrayals constitute published documents. I have twice been to Lascaux; have allowed a biologist's interest in the fauna to be overwhelmed by sheer aesthetic delight, amounting ultimately to exhaustion, at the dynamic technique of the master-artists, who chose every irregularity of the rock walls of the famous cave to enhance perspective, who saw their designs and scenes as a whole and ordered their animals in balanced groupings of swimming deer and horses in file. I had also read the text-books, and being neither professional archaeologist or palaeontologist accepted the general view that Lascaux was painted by Magdalenians or late Aurignacians, or both, some time between about 25,000 and 14,000 years B.P. (before the present). The one published carbon-dating from Lascaux may mean that somebody lit a fire in the cave 15,516 (plus or minus 900) years ago; it does not date the paintings.

The Lascaux pictorial fauna includes a bird, a man, a wolf, cave bear, cave lions, horses, a rhinoceros, giant deer (*Megaloceros*, the giant "Irish elk"), red deer, aurochs (or urus, the ancestor of domestic cattle), bison and ibex. This was a woodland-savannah fauna, a warm-temperate fauna such as persisted in France for a few periods in the times of Stone Age man: at least it would have been were it not for the woolly rhinoceros.

Just over ten years ago, in a short letter tucked away in the journal "Man," Dr F. E. Zeuner, Professor of Environmental Archaeology at London University, suggested that the Lascaux rhinoceros (there is but one, in the specially mysterious "crypt of the prehistoric tragedy") was not the woolly rhinoceros but another prehistoric rhinoceros — Merck's rhinoceros, which was a woodland animal closely related to the surviving rhinoceros of Sumatra, which is hairy, not so much as woolly; tubbier, more stubby horned and with less high withers than the woolly rhino.

At the time alleged by most authorities for the Lascaux paintings the local fauna was really boreal in character, and ice stretched far over Europe. The fauna was dominated by mammoth, saiga antelope, woolly rhinoceros and a race of wild horses close to Przewalski's race that still inhabits Outer Mongolia. Neighbouring decorated caves, like that at Font-de-Gaume, show this fauna. None of these animals is figured at Lascaux, if we accept that the rhino is not woolly. In his remarkable and most interesting new book,* "A History of Domesticated Animals," Zeuner is convinced that the many horses on the walls are not Przewalski's horses, but the lighter forest tarpans, a race occupying quite a different habitat from the steppe-living survivor of our domestic horse's ancestor.

With the key-log of the rhino pulled out, the other members of the fauna fall into place. The bison on the Lascaux walls are huge superbison with longish ascending horns. Authorities had said: "European bison, plus artistic licence." But huge superbison of another species (*Bison priscus*) belonged to a much earlier fauna (with Merck's rhinoceros), and had at that time ascending horns. The red deer on the Lascaux walls are nearly superdeer, with vast antlers and very many points: again, either artistic licence or an earlier, more magnificent, ancestral race of deer which is also known from fossil record.

* *London, Hutchinson (February, 1963), 84s.*

✦ ✦ ✦

WHEN was there, at the latest, a woodland-savannah with a warm-temperate fauna with Merck's rhino, *Bison priscus*, tarpans and superior red deer? Unfortunately carbon-dating is no good over 40,000 years, and other techniques of radioactive dating are not much good under 500,000 years. For dating events between, the most useful tool, still perhaps in need of refining, is the correlation of periods of ice advance and retreat with calculable changes in the solar radiation received by the earth's surface. Through the main part of the Pleistocene or Ice Ages—the last million years—there have been a dozen marked ice advances (with retreats between) each of which can be linked with a pronounced radiation drop.

If the Lascaux fauna really represents what it looks like, it is one that could only have existed between the penultimate ice-advance and the one before that—those that are called Last Glaciation 2 and Last Glaciation 1 by Zeuner and others in Europe generally. A reasonable date for the warm conditions that interposed between these two glacials is (on the astronomical correlates) 80 to 90,000 years ago! It can be readily understood that the majority of archaeologists have found it hard to read this logic of the faunal walls of Lascaux.

If the artists were good, and hunters and naturalists as good as they were artists (and for proof of this, look), Lascaux is not only the greatest gallery of prehistoric art, but by far the earliest known, first opened to magical Aurignacian hunters' rites in the days when our species still shared the forests with the more primitive Neanderthalers—who became extinct at about the same time as Merck's rhinoceros.

Between the key animals in the Lascaux crypt—between Merck's rhino and a superbison —reposes, incidentally, the world's first essay in ornithology: a dead hunter with a bird-mask, and by him a bird-crowned stick which is probably a dart-thrower but may possibly be a totem.