

CLUB NEWS

At meetings held on Saturday 6th and Sunday 7th July, the Committee formally accepted a tender of £2,895 from Messrs. C. Packham (Contractors) of Timsbury for the erection of the shell of the Club's New H.Q. Upper Pitts. After the necessary formalities have been concluded with the builders and Department of Education and Science, it is hoped that work on the site will start following August 1st. The contractor estimates that the construction of the shell should take about eight weeks. S. Causer is the only Club member authorised by the Committee to consult with the site foreman and labourers during the contracted building programme. All other members are urged not to interfere with the smooth running of the construction works since we are hoping that the job will be completed by mid-October next for members to inspect prior to, or after, the Club Annual General Meeting. Please co-operate.

This year's A.G.M. will take place on Saturday 19th October at Priddy Village Hall, starting at 3.0.p.m. prompt. Attention is drawn to Club Rules Nos 5 and 18, which state:-

"5 That the affairs of the Club shall be conducted by a Committee which shall consist of a Chairman, Honorary Treasurer, Honorary Secretary, Honorary Assistant Secretary, Gear Curator and nine other members who shall retire annually and be eligible for re-election, and that the Honorary Secretary of any group within the Club be eligible to attend a committee meeting in an ex officio capacity, and may nominate a substitute to any meeting which he cannot attend personally. All members standing for office or for membership of the Committee must be nominated by two members of the Club. The Committee shall fill any casual vacancies. An Honorary Auditor shall be appointed each year at the Annual General Meeting."

"18 That notices of motions for discussion at the Annual General Meeting shall be received by the Honorary Secretary not more than two weeks after the posting of the notices of the meeting. Such notices of motions must have the names of the proposers, and be circulated to members at least seven days prior to the meeting."

Since this announcement is the official notification of the A.G.M., under the terms of Rule 18, notices of motions for discussion should be posted to the Hon. Secretary to arrive not later than Saturday September 7th 1968. Full details of the A.G.M. including the Hon. Secretary's 1967-68 Report will appear with the October issue of this Journal.

The Annual Dinner of the Club will take place on the evening of Saturday 19th October at the Wookey Hole Cave Restaurant, 7.30.p.m. for 8.0.p.m. An insert is enclosed with this Journal for member's convenience in applying for tickets for The Dinner. Further details will be published in the October Journal with the final notices of the A.G.M.

Amongst the business to be transacted at the A.G.M. will be the further use or disposal of our existing Hillgrove and Eastwater huts once Upper Pitts is habitable, Constructive ideas from members would be appreciated, and so you are invited to pass any personal comments and proposals to the Hut Warden or Hon. Secretary so that the matter can be considered in detail by the Committee in preparation for the A.G.M.

Another Club Jumble Sale will be held at 2.30.p.m. on Saturday 21st September at Wells Y.M.C.A. Chamberlain Street, in aid of the Hut Fund. Your help, and jumble of course, will be most appreciated on this afternoon. The more we have of both the easier and more profitable will be the venture, especially as we have a good reputation in Wells for Jumble Sales. Jim Hanwell will co-ordinate the arrangements, but since he has limited space to store jumble, it would be appreciated if the loads could be taken to 50 Wells Road, Wookey Hole, in the week prior to the sale, or preferably to the Y.M.C.A. direct not later than 2.0.p.m. on 21st September. Please notify him of your willingness to serve on a stall, if only for the first "crush-hour" or so up to 4.0.p.m.

The Club have been able to get further stocks of ex-N.C.B, Nife cells with headlamps. As these are in great demand, members are urged to get their orders in as soon as possible to Steve Causer, The Cottage, Rectory Lane, Timsbury, Nr. Bath. Since it seems to be becoming a matter of first come first served, as it did the last time these were available, your orders should be despatched without delay. The complete cells cost 30/- each as announced in the last Journal.

We have received a communication from Mr. A. McLaggan of Merthyr Mawr House, Nr. Bridgend, Glamorgan, concerning access to the Merthymawr Warren Caves (see article by John Jones in W.C.C. Jnl. No. 117 Vol. 10 June 1968 pp. 82-84. Mr. McLaggan writes:-

"A number of your members have recently come to visit the caves in the grounds of this house. I would be obliged if you would make it clear that, while permission to visit will normally be given to accredited members, it must be applied for in writing or by telephone (Bridgend 2038) at least 72 hours in advance on each occasion. Casual cavers are liable to be refused."

We welcome the following new members to the Club, elected on 7th July 1968:-

R. Cayless.	12 Fairholme Crescent, Hayes, Middlesex.
C. Hanham.	33 Hounslow Drove, Street, Somerset.
G. Hopkins.	43 William Norris House, London W.6.
B. Smethurst.	2 Oak View, Knutsford, Cheshire.
R.H. Whiteley.	Shaw Clough, Pinfold Lane, Scammonda, Huddersfield

Members are reminded that, should they wish to organise or join a private caving trip to any system on the Mendips or elsewhere, they can write to the Caving Secretary, Roy Staynings (address page 97) who may be able to help by putting you in touch with other members contemplating similar trips. It appears that many members would prefer their caving to be arranged in this way. Do remember that if your proposed trip away from Mendip requires Club tackle then you should apply to Jim Hanwell (address page 97) who holds the tackle store for "away fixtures". The Hillgrove stocks are for trips on Mendip only. Any members away from the Bristol area who would like to join forces to become familiar with rescue work are encouraged to do so, and should also write to Roy Staynings.

The Index to Volume 9 of Wessex Cave Club Journals is inserted with this Journal. We are grateful to Peter Cousins for its preparation.

CLUB MEETS

Please give the leader prior notice of your intention to join a trip

<u>Saturday August 17th.</u>	1400 hrs	<u>Smaller Caves of Central Mendip.</u> Leader: D.Warburton, 20 Beverley Court Road, Quinton, Birmingham 32.
<u>Weekend August 17th/18th.</u>		<u>Georesistivity Prospecting.</u> Leader: J. Church, 35 Rayens Cross Rd., Long Ashton, Bristol.
<u>*Weekend August 24th/25th.</u>		<u>South Wales.</u> Leader: P. Duck, 13, Goodymoor Ave., Wells, Somerset.
<u>Weekend 31st Aug/1st Sept.</u>		<u>Georesistivity Prospecting.</u> Leader: J. Church.
<u>Saturday 7th Sept.</u>	1100 hrs	<u>Lamb Leer.</u> Leader: H. Pearson, 129 East Dundry Rd., Bridge Farm Estate, Bristol 4.
<u>Wednesday 11th Sept.</u>	1830 hrs	<u>G.B. Cavern.</u> Leader: R Woolley, 64 Devonshire Rd., Bristol 6.
<u>*Weekend 14th/15th Sept.</u>		<u>Agen Allwedd.</u> Contact: R.J. Staynings, 8 Fanshawe Rd., Hengrove, Bristol 4.
<u>Saturday 21st Sept.</u>		<u>Jumble Sale at Wells Y.M.C.A.</u> Organiser: J D Hanwell, 50 Wells Rd., Wookey Hole.
<u>*Weekend 12th/13th Oct.</u>		<u>South Wales.</u> Leader: P. Davies, "Morley", Silver St., Nailsea, Nr. Bristol.
<u>Saturday 19th Oct.</u>		<u>The Annual General Meeting</u> at Priddy Village Hall.
		<u>The Annual Dinner</u> at The Wookey Hole Cave Restaurant.
<u>*Weekend 23rd/24th Nov.</u>		<u>South Wales.</u> Leader: T.E. Reynolds, 23 Camden Road, Southville, Bristol 3

* Denotes that Nife cells and wet suits or exposure suits are essential.

<u>Hon. Secretary:</u>	D.M.M. Thomson, Pinkacre, Leigh-on-Mendip, Bath, Som.
<u>Caving and Asst. Secretary:</u>	R.J. Staynings, 8, Fanshawe Rd., Hengrove, Bristol 4.
<u>Hon. Treasurer:</u>	T.E. Reynolds, 23 Camden Road, Southville, Bristol 3.
<u>Subs. Treasurer:</u>	A.E. Dingle, 32 Lillian Road, London S.E. 13.
<u>Hut Warden:</u>	M.W. Dewdney-York, c/o Hillgrove Hut, Hillgrove Farm, Priddy, Wells, Somerset.
<u>Journal Distribution:</u>	P.R. Cousins, 3 Kinver Road, Sydenham, London S.E.26.
<u>Editor:</u>	J.D. Hanwell, 50 Wells Road, Wookey Hole, Wells, Som.

Obituary

DINA PORTWAY DOBSON-HINTON, M.A., Litt.D., F.S.A.

Vice-President, Wessex Cave Club, 1936-68

Before 1934 most organised caving on Mendip was carried out by societies with a well-defined membership, such as the University of Bristol Spelaeological Society, Sidcot School Spelaeological Society, and the Mendip Nature Research Committee. For example, the latter's membership at that time consisted of a very small group of people elected by invitation only. With the interests of the "non-attached" caver in mind, the Wessex Cave Club was formed. From the very beginning we had the best wishes of the existing societies, and this was exemplified by the late Mr. H.E. Balch (M.N.R.C.) becoming our President, and Dr. Dobson-Hinton (The University of Bristol) accepting office as one of the first Vice-Presidents. Both held these positions until their deaths; Dr. Dobson-Hinton being the longest serving Vice-President of the Club.

Dr. Dobson-Hinton was an intellectual in the highest sense of the word, and her interest and connection with the archaeological world was life long. She was author of a well known book on the archaeology of "Somerset" (Methuen), and read a Paper to the British Association on "Pre-Roman Sites in the Bristol District". During her younger days she took an active part in the early exploration of Mendip caves, and her enthusiasm can be judged from the fact that, although expecting a baby within a short while, she was a member of a party led by Mr. Balch to Sump I in Swildon's Hole. Indeed, she was the first woman to descend the Forty Foot Pot, and also the first woman to "bottom" Eastwater Cavern.

While having an interest in a wide range of activities (she was a Justice of the Peace for a number of years for example) she was always helpful to young archaeologists, and gave them a great deal of encouragement and advice. She liked to be kept informed on Wessex matters, and was very keen to hear about new cave discoveries and sites on Mendip.

It was with very great regret that I heard of her death. With her passing we have lost yet another of those pioneers of Mendip Archaeology and Caving, and a good friend of the Wessex Cave Club.

Frank Frost,

President.

General Announcements

Cave Research Group Symposium, March 1969.

A symposium on Cave Photography is being arranged similar to the Water Tracing one held earlier this year. The venue will be Vaughan College, Leicester, once again, and the date Saturday 8th March 1969. Mr. A.C. Coase, the organiser, will welcome offers of help c/o The College of Education, Scrapcroft, Leicester.

Cave Research Group "Manual of Caving Techniques".

This long awaited companion volume to "British Caving" is now in press with the publishers, Routledge and Kegan Paul, and is expected to be out this autumn. As before the various chapters have been written by experts with up-to-date experience, some of whom are members of the Wessex Cave Club. The Editor is the Rev. C.D.H. Cullingford who is a Vice President of the Club.

British Speleological Association Annual Conference, September 1968.

The conference this year will be held at The University of Sheffield on the weekend of 13th/15th September. Full details may be obtained from I.J. Standing, Grove Cottage, Watledge, Nailsworth, Glos. So far the programme includes:-

1. The Rope in Caving. F. Solari, B. Sc., A.F.R.A.^e.S.
2. Causes of Caving Accidents. J.K. Needham, D.C.R.O.
3. A Review of the Techniques Available for Tracing Underground Water, D.P. Drew, B.A., Ph.D. and T. Atkinson, B.Sc.
4. Measuring the Rate of Erosion in Caves. F.K. Hanna, B.Sc.
5. The University of Bristol Karst Hydrology Expedition to Jamaica 1967. D. Ingle Smith, M.Sc.
6. Problems of Getting Deep Down. P. Watkinson of the 1967 Gouffre Berger Expedition, J. Eyre of the 1967 Provatina Expedition, and B. Woods of the Balinka Pit Expeditions.

Speleological Colloquium in Rumania, September 1968.

The colloquium is being arranged by The National Rumanian Tourist Office, "Carpati", "Secteur Congre", 7 Boul. Gen. Magheru, Bucarest, Rumania, from whom full details can be obtained. There will be a nine day coach excursion for about 80 people, from 27th Sept. to 5th Oct., costing \$123.65 (£50 approx), and a post-colloquium train and coach excursion for 30 people costing \$23.23 (£10 approx). Many caves will be visited throughout Rumania on these excursions.

Course on Limestone Geomorphology; University of Bristol Department of Extra-Mural Studies, November 1968. Saturday 23rd November 1968:-

10.30 .a.m.	Assemble with coffee.
11.00.a.m.-12.00. noon	D. Ingle Smith, M.Sc. "Limestone Solution".
12.00. noon-1.00.p.m.	Dr. M.M. Sweeting, "Tropical Limestone Scenery".
1.00. p.m.-2.15. p.m.	Lunch.
2.15. p.m.-3.15. p.m.	Dr. T.D. Ford, "Limestone landforms and Caves in Derbyshire".
3.15. p.m.-3.40. p.m.	Tea.

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First Impressions after the Storms of 10th/11th July 1968

by

J.D.Hanwell

During a ten to twelve hour period from the afternoon of Wednesday 10th July, something approaching three months of normal summer rain fell on Mendip. A succession of deep intense thunderstorms moved across the district from the southwest causing widespread havoc by flooding. The storm tracks appear to have followed what seems a characteristic path across the Somerset Moors, along the southern slopes of the western Mendips, to pass over the hills in the Priddy-Cheddar area. While a party had been down Swildon's Hole that morning, fortunately no one was underground when the main onslaught started late in the afternoon.

The intensity of the rain was such that the greater percentage collected on the surface and severe run-off followed until the early hours of the following day. Apparently, some of the major risings did not appear to rise significantly more than in the periods of high water we are more accustomed to. Short-lived flood pulses seem to have caused the silting in Wookey Hole Cave, and road drainage accounted for much of the earlier flooding in Gough's (Show) Cave. On the other hand St. Andrew's Well was not unusually swollen. Surface valleys became the focus for raging torrents armed with boulders plucked from dry-stone walls, while roads off the hills (mostly following valleys anyway) acted as ideal shutes. Unconsolidated road metal was scoured away near the verges and large sheets of tarmac removed. Gullies up to 20 feet deep scar Horseshoe Bend in Cheddar Gorge for example., Much of this devastation was wrought by incredible mechanical forces as temporarily empounded waters burst their "dams" and surged forward with a battery of enormous boulders and debris. Such "waves" account for the more spectacular cases of damage observed to date. Clearly, we now have an unprecedented opportunity to examine the effects of abnormal flooding on the development of cave systems,, No doubt further observations and conclusions will follow in subsequent issues of the Journal. However, some brief "stop press" news seems relevant just now.

The most unbelievable case has been the removal of the Forty Foot Pot in Swildon's Hole by the excavation of a deep buried channel throughout the Water Rift. It would seem that the whole Upper Series flooded, before this happened, to a point well above the entrance blockhouse. At the moment there is a "walk-in" way through the hollow tree. The effects further down the cave are reported as less dramatic. Barne's Loop became an active oxbow, and many of the pots have been scoured deeper or silted up. Sump I is longer but deeper, while the Ducks and Creeps in Swildon's II currently need diving as well. Curiously, the Sump I guide wire remained in place.

Few superficial changes appear at the already collapsed Eastwater entrance, but the Nine Barrows Swallet entrance has fallen in. The choked flood sink leading direct to the August Hole series in Longwood has been reopened, and a deep shaft near the U.B.S.S. Manor Farm dig has given access to some 200 feet of unsuspected cave ending in a ruckle. Meanwhile, north of where the sweeping road bend at Nordrach was breached, a large collapse in the old minery floor has revealed a clay walled shaft as yet unexplored. At the foot of the bluff adjacent the M.C.G. Blackmoor Swallet dig a large stream sinks. Further down towards Velvet Bottom the "tidal wave" ripped away the gruffy banks to expose most interesting profiles of the tips and old puddles with their complex of conduits. Obviously there are many lessons to be gleaned from this flood by cavers and archaeologists alike.

TO THS MEMORY OF TRIPS IN DISAPPOINTMENT POT

by

DEREK TRINGHAM

"DIS"

Scalloped, dark grey clefts
of winding waters lead
through brown froth-coated walls
to vibrant growing crashing sounds
of thrashing waterfalls.

Boots scrape, slide, slip and grip,
Electron dangles damp.
Light rays dispersed through halo sprays
come flashing from a lamp.

Waters surge through channels
Carved in rifted rock
Man's track goes onwards down the sluice
Hewn by nature's shock.

This is Dis, a world of force,
Man is not at home.
Waters rule, and waters end
this view through rock.....with foam.

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3.40. p.m.-4.40. p.m. D. Ingle Smith, M.Sc. "Mendips, with a bias towards the field excursion"
5.00. p. m.-6.00. p.m. Demonstration of Techniques used in the study of Limestones.

Sunday 24th November 1968:-

A field excursion (9.30. a.m. start) to the Mendips to study features of the limestone geomorphology and some field techniques. Cars may not follow the coach.

Fee: 35/- (including lunch, coffee, tea on Saturday, and coach on Sunday) Apply to A.B. Hawkins, 20A Berkeley Square, Bristol 8.

"Ninety-nine Years Ago"

An Extract from the Diary of Mr. R.R. Green.

Wednesday 21st July 1869 and I drove to Cheddar. Such a dusty road I never before traversed. On our journey we passed through Axbridge a town which particularly took my fancy. The locality is noted for its excellent potatoes. The town appears to consist chiefly of one very long and narrow street but remarkable for its cleanliness. Cheddar is situated at the foot of the Mendip Hills and is 22 miles from Bristol. It consists of four irregular streets with a market cross in the centre. The approach to the cliffs is extremely picturesque, particularly viewing it from the back of Mr. Cox's hotel, where the village brook and waterfall is seen to advantage; backed by a shrubby wood with a few cottages scattered on its edge. As we advance, the rocks assume a more precipitous character, presenting bold and almost perpendicular points, with bare rugged tops several hundred feet above the level of the surrounding country. On gaining the summit which is attained by a carriage road winding for nearly two miles through the cliffs, we have as our guide book informs us a view showing "the wild and tremendous magnificence of the scenery, the rocks alternately projecting on one side, receding on the other, sometimes resembling the ruined battlements and solitary towers of a stupendous castle having their perpendicular fronts partially covered with ivy, and beautifully intersected by verdant ledges, scattered over with the mountain ash and darker yew, intermingled with the crimson mountain pink and other flowers peculiar to this romantic district".

In the distance can be seen Glastonbury Tor, also a capital view of the Welsh Channel. Besides the grandeur of the exterior of the Cheddar Cliffs, they are also particularly remarkable for their interiors which form very beautiful stalactite caverns. There are two chief ones, one kept by one Weekes certainly the larger of the two but not so beautiful as those of Mr. Cox discovered by him in 1839. The chief one of the latter series is from thirty to forty feet high, vested and draped with the most fantastic and beautiful stalactites one can conceive, forming festoons, drapery, pillars from four to fifteen feet in height, and fonts and basins of the purest water. When lighted up with the candles carried by the guides it has a very pretty effect. It has been remarked by many visitors that the interior parts of this cavern resemble the grotto of Antiparos, in the Archipelago. The admission is one shilling. After partaking of tea at Rose Cottage, we returned home having spent a most enjoyable day.

Mr. R.R. Green was the grandfather of my wife on the paternal side.

E. Hensler.

FROM THE REPORT OF THE HON. SECRETARY AND TREASURER OF THE MENDIP RESCUE ORGANISATION, DR. OLIVER C. LLOYD, FOR THE YEAR ENDING JANUARY 31ST 1968

Cave Rescue and Incidents

There were seven of these in the ten caving months, which is a distinct improvement on last year. All but one were from Swildon's Hole, of which four concerned the 40 ft. pot in adverse conditions.

1. Swildon's Hole, Sunday 26th March 1967

Two Derbyshire cavers descended the 40ft. pot on a knotted rope. On their return one of them was too tired to climb up again. Assistance was summoned by members of an Ordnance Survey Caving Group party, who happened to be doing Upper Swildons, and a rescue party of two Sandhurst chaps and six Surrey Youth Cavers, who provided the tackle, carried out the operation without having to call out M.R.O. Eric Corner of the Surrey Y.C. writes of the subject, "Nothing more was heard from him or even a word of thanks. All we know is he came from Derbyshire. How anyone can be so stupid as he, I just don't know. However the knotted rope is in my possession awaiting claim - if any, which will be returned with some pretty caustic comments".

2. Eastwater Swallet, Friday 5th May 1967

A party from Fry's Outdoor Activities Club, Somerdale, Keynsham, was returning from the Traverse Passage into the Upper Traverse Passage, when their leader, Bruce Faux, got stuck. He had entered the smaller of the two holes. M.R.O. was alerted soon after 11 p.m. and a strong party of five cavers from the neighbourhood had contacted the subject by 12.15 a.m. Careful inspection showed what was holding him up, and a little readjustment of his clothing made it possible for him to slip through. He was free within twenty minutes.

3. Swildon's Hole, Sunday 11th June 1967

A party of three Londoners, Timothy Hawkins aged 24, Peter Eswin 23, and Edward Hammond 23, descended the cave at about 10 a.m. They had been caving not too frequently for nearly a year. Hawkins had been down Swildon's five times, the other less often. Their equipment was good, except for the fact that they had no ladders. They were rather good at climbing and descended the 40ft. on a single rope. Hawkins then climbed down the 20 ft. but re-ascended to help one of the others. Traversing across the top to where the ladder normally hangs his hand-hold broke and he fell and fractured his left femur. This must have been at about 11 a.m.

M.R.O. was alerted at about 12.20 p.m. Luke Devonish was out and so Howard Kenney was contacted. He phoned Hunters Lodge at 12.40 p.m and George Pointing went over to Washingpool to collect the equipment. Peter Short did the telephones, since Brian Prewer, who usually does them, was away. Jim Hanwell was called out at 12.50 and did the surface organisation. It was a long operation and did not finish until 6.30 p m.

An advance party went down with ladders, coffee and glucose at 1 p.m., followed at 1.20 p.m. by a strong team of nine from the Shepton with the Washing pool tackle. At 1.30 p.m. the telephone was taken down to the 40 ft. Bob Craig organised the hauling at the 40 ft.

At 2.0 p.m. Howard Kenney and Dr. Don Thomson went down with splints, morphia, plaster of paris, bandages, etc. Meanwhile Luke Devonish had arrived and stayed by the phone to call ambulance and other rescuers, if needed. The latter he found exceedingly difficult. Sunday afternoon is the worst time in

the week for finding cavers. Out of 14 telephone calls he only got two replies, but nevertheless succeeded in mobilizing reserves. Six other cavers were available soon after 2 p.m. At 2.15 p.m. the Police arrived and by 2.30 contact via walkie-talkie and telephone was established from the scene of the accident to Priddy Green.

At 2.50 p.m. a call came for more plaster of paris bandages to make a complete hip spica. The reserves of this material in Mr. Main's house were not known to the surface parties, so six boxes were fetched by Police patrol from Wells Hospital. At 3.20 p.m. this was sent down the cave. At 3.35 p.m. another hauling rope was requested and was immediately sent down. By 4 o'clock the subject had reached the top of the 40 ft. and the Water Rift by 4.30 p.m. Progress was exceedingly slow because the subject was suffering much pain. But he did very well and helped the rescue parties a lot. He was out by 6.15 p.m. and the considerable amount of willing help that had arrived in the meantime as a result of Devenish's general call-out was not needed.

4. Swildon's Hole, Saturday 14th October 1967

On this afternoon at about 5 p.m. the 40 ft. pitch flooded due to heavy rain. A member of a team of Bath students (college not identified, but not the University or Technical School) was unable to climb the ladder. Contact was made with a U.B.S.S. party under Colin High who were doing Upper Swildon's. They rigged the pulley over the 40 ft. for hauling with a line and pulley the party had with them. Hauling was done from below and was accomplished without much difficulty. The subject was cold and weak at the head of the pitch, but he was able to get out of the cave under his own steam. M.R.O. was not called out.

Note * In flood it is much easier to climb the 40ft. if it is laddered on the far side of the pitch. There are two fixed eyed rawl bolts there for this purpose.

5. Swildon's Hole, Saturday 28th October 1967

Unexpectedly bad weather brought flooding, and as some parties were known to be below the 40 ft. M.R.O. was alerted by a party staying at Fountain Cottage at 2 p.m. Luke Devenish stood by certain key personnel and waited. At 3 p.m. half of a party of Harrow Moles came out of the cave leaving the other half down there. At 4 p.m. Devenish called out those he had alerted and at 5 p.m. a party of 7 went down the cave. Phil Kingston and Bob Lewis, who were in this party, were instructed to descend the 40 ft. if this could be done safely, contact the parties believed to be below and report back on message pad. At 6 p.m. they made contact with the Moles, led by Mr. John Lucas, and helped them out.

On the surface there was still the difficulty of finding out how many parties were down the cave, but a prolonged search of Mendip, which did not end until 7.45 p.m. showed that this was the only one.

The Bristol Waterworks started their pumps at 5.10 p.m. and relieved the stream of 27,000 gallons per hour. Altogether 13 M.R.O. cavers took part in the operation underground, which was completed at 10.30 p.m.

Note: It is often difficult to know who is down Swildon's, since many parties do not let Mr. Main know beforehand. If no party could get down without first obtaining a key from Mr. Main, then the problem would be easier.

6. Lamb Leer, Sunday 29th October 1967

A party from the University of Surrey Potholing Club was down this cave, led by a member of the M.N.R.C., Brian Tilbury. Patricia March, aged 19, was descending the main ladder pitch when, owing to a misunderstanding with her life-liner, she fell about 20 ft. on a loose line and hurt herself. This was at about 3 p.m.

M.R.O. was called out. Jim Hanwell took charge on the surface and Dr. Don Thomson underground. It was suspected that the subject might have a fractured pelvis, but this proved not to be the case. The rescue was accomplished without incident.

Note: Life-lining is no mere formality. It should occupy the full attention of the life-liner.

7. Swildon's Hole, Wednesday 8th November 1967

A party of 4 from Bath University Caving Club were doing Swildon's I as far as the mud sump. On their return R. Cadwallader, aged 21, cold, wet and tired, was unable to climb the 40 ft. The party had by then split into two and it is agreed that had they remained as one party enough help on the life-line could have been given in the first place to help the subject to climb it.

Fred Davies and Mike Thompson went down the cave, rigged the 40 ft. and hauled him up via the ledge on the far side, where he was given dexedrine and glucose. They had to use the pulley from Main's cottage, because the one over the 40 ft. had jammed solid.

Note: I changed the pulley on 12.11.67 and found that the reason why the one down there had jammed was because it had been inexpertly used for hauling with its gate open. This had caused the block to bend. It is, of course, not known when the damage was done.

Cave Rescue Practices

The policy of M.R.O., which is to encourage clubs to carry out rescue practices under supervision, is paying dividends. Not only is it easier to find cavers who know enough rescue technique to be useful or even to take charge, but as the foregoing records show, rescues are being performed spontaneously without calling out M.R.O.

Clubs wishing to carry out a rescue practice should fix the date well ahead (about 2 months) and notify the Hon. Sec. of M.R.O. They should arrange the time, the cave, provide a team of 8 strong men, a small "victim" and the caving tackle. M.R.O. will provide a Warden or team leader to act as umpire and the special rescue equipment. The most useful practice at present is still that on the 40 ft. in Swildon's and will continue so to be, as long as beginners over-extend themselves there. The reconstruction of the upper lip diminishes the force of the water in flood by 10 feet, but it remains a hazard, as always.

Clubs which establish a rescue team are entitled to have the leader of their team co-opted on to the Committee of M.R.O. The appointment is for a year only, but may be renewed if the team continues to function.

The following cave rescue practices were held:-

26.2.67	Oxford Univ. C.C.	Lamb Leer
15.4.67	Westminster Sp. Gp.	Swildon's
23.4.67	Wessex C.C.	Goatchurch
13.5.67	U.B.S.S.	G.B. Cave
4.6.67	M.R.O. training leaders	Swildon's
1.7.67	Ordnance Survey C.G.	Swildon's
7.10.67	Border C.C.	Longwood
8.10.67	Croydon C.C.	Swildon's
22.11.67	Wessex C.C.	Rod's Pot
21.1.68	B.E.C.	St. Cuthbert's

Cave Rescue Council

This Council was established at a meeting held at Settle on 24.6.67, under the chairmanship of Mr. John Plowes, at which representatives were present from the C.R.O., M.R.O., Gloucester C.R.G., South Wales C.R., Durham C.R.O., Derbyshire C.R.O., together with Mr. Norman Thornber. Not present, but supporting the principles, were the Upper Wharfedale F.R.A. and the North Wales C.R.

The Council is to be the representative body for Cave Rescue Organisations for the purpose of:-

- a) Obtaining national recognition for cave rescuers.
- b) Allocating coverage for areas as yet without effective means of performing cave rescues.
- c) Helping to establish rescue facilities in those areas needing help.
- d) Providing the liaison desirable to supply additional strength to areas, or even countries, in the event of major incidents, and where the areas or countries concerned request it.

Terms of reference:-

- a) The Council shall never become a Rescue Organisation in itself.
- b) It shall have no power to interfere in the affairs of its constituent members.
- c) It shall only act unanimously.
- d) Its members shall only be appointed by the organisations they represent. No co-option is permissible, but any relevant adviser may be invited to assist.

It was further resolved that:-

- a) Mr. John E. Plowes be appointed Hon. Secretary. The Chairman to be elected at each meeting.
- b) Officers to be elected each year.
- c) Meetings to be held at least once a year.

The Hon. Sec. was requested to contact the Irish C.R.O. Also to make representations to the Home Secretary for the purpose of furthering the objectives.

The second meeting of the Cave Rescue Council was held in Bristol on 30.9.67. Dr. Oliver Lloyd was elected to the Chair. Eight C.R.O's were represented, together with Supt. Glendinning of the West Riding Constabulary.

The Hon. Sec. (John Plowes) reported that the Home Secretary had referred him to Mr. J.A. Willison, the Hon. Sec. of the Association of Chief Police Officers of England and Wales, whom he visited on 9.9.67. The discussions resulted in the following recommended procedure:-

- A
- 1) The Cave Rescue Council to confirm base or central control points of Police contact for each Area Rescue Organisation in its membership.
 - 2) Agree allocated coverage of less frequented areas.
 - 3) Establish an inter-area call-out system for additional help if requested by the "Local" area concerned. This would be via the "Central Police Points".
- B
- The Association of Chief Police Officers to deal with the conveying of the information throughout the Police Service with the authority for its inclusion in the "Emergency Instructions" for the guidance of all Police personnel.

Mr. Plowes had summarised the two main concerns of the Cave Rescue Council as:-

- 1) Risk that cave rescue services might not be requested by Police in areas which knew nothing about them.
- 2) Financial stringency.

Discussion of this report resulted in the following recommendations being made by the Council:-

- 1) That the information to Chief Constables should remind them of their authority to reimburse "out of pocket expenses" of the people called upon to assist them.
- 2) The Hon. Sec. should ascertain the Scottish system of Cave Rescue operation.
- 3) Overlapping areas should consult and devise the coverage required. It was estimated that 24 out of the 45 Police Districts would be concerned.
- 4) Co-operate with International Commission.

It was agreed that the Irish C.R.O. was a full member of the Council, but of course it was necessary for them to make their own arrangements with their Police.

The next Cave Rescue Conference would be at a similar time next year, arranged by the Gloucester C. Rescue G. The next Council Meeting would precede the Conference. An earlier one could be called. The Cave Research Group's circular letter about a National Caving Council was noted but no action recommended.

6th Conference of Cave Rescue Organisations

This took place in Bristol on 30.9.67. with Mr. Jim Hanwell in the Chair. The details were arranged by Mr. Chris Dawes for M.R.O., to whom must go much of the credit for the Conference's success.

The Agenda included:-

1. Mr. Plowes' report of the Cave Rescue Council.
2. A report on the International Commission of Cave Rescue by M. Etienne Lemaire, from Belgium.
3. Gordon Glissold on self-help for the South Wales C.C. in Yugoslavia.
4. Jim Hatfield on similar problems in the Gouffre Berger.

5. M. Dimitry Martynoff on the Cave Rescue Organisation in Belgium, which is a highly trained one.
6. On the properties of synthetic fibre ropes by Mr. Tyrrel from British Ropes and by Mr. Mel Davies of I.C.I. Fibres.
7. Concentrated food packs for cavers, by Mr. de Jong of Horlick's.

A demonstration was made of the new M.R.O. exposure bag by Mr. Paul Allen. This has not yet been tried out under cave-sump conditions.

Finance

Considerable expense in equipment (£72) has been incurred this year, mainly on account of new ropes, exposure bag, carrying sheets and telephones. This has been made possible by the consistent support of cavers over the past years so that, although our excess expenditure over income for the year was £51, we still have funds worth £73 in the General Account. The financial support we get is of two kinds, from the caving clubs and from cavers whom we have managed to help. Once again I am glad to be able to mention the generosity of one club which donated as much as £10.

OLIVER C. LLOYD M.D.

March 4th 1968.

PROVATINA ABYSS, 1967

by Carl Pickstone

Mention Greece to anyone and they naturally think of the Acropolis, the Parthenon and countless other masterpieces of the Classical Age which still exist today. Greek mountains too have their place in history, Mount Olympus was the hiding place of Zeus the supreme Olympian deity. Last year the writer visited one of the more remote regions of Greece, which seems to have been in the back of the queue when the pages of ancient history were being written. However lacking in early man-made history it may be it certainly does not suffer from a dearth as far as speleological interests are concerned.

The area in question is the North Western portion of the Pindhus Mountains in the Nomoi of Ioannina. The Pindhus extend southwards from Albania to the Gulf of Korinthos, forming the backbone of Northern Greece. It includes tracts of rounded summits and even rolling plateaux some 6,000ft. high, but elsewhere rugged escarpments and deep ravines score the soft limestone. The area visited was dominated by a broad tabular mass of pure limestone, nearly 8,000ft high, named Gamila. This is drained by two rivers, the Aaos and Vikos, which have cut formidable canyons some 4,000ft in depth. The Vikos is a resurgence, emerging in a deep gorge which nearly annexes a minor peak called Astraka from the main block of Gamila. It is Astraka and the Vikos which have aroused interest amongst English cavers, because of the presence of a huge shaft, hitherto unexplored. The shaft is situated on a plateau at an altitude of 5,850ft. and the Vikos resurges some 4,000ft lower down, two miles away.

The shaft was first entered upon the European caving map by David Heap whilst with an Oxford University Expedition to the Pindhus. It takes the name of Provatina from the fact that it was located in a place known to the Greek shepherds as "the place of the sheep". Since then the area has been visited by various parties, the only serious attempt being made by a party led by Ken Kelly in 1966. It was on this visit that Jim Eyre of the Red Rose Pothole Club discovered that it was more than "just another hole"; he descended 500ft down the shaft, only failing to reach the bottom because of insufficient ladder. He reported that the shaft was 100ft by 80ft with an estimated depth of 570ft to a snow covered ledge, also that possibly another pitch followed.

He resolved to return the following year with an expedition of his own. The 1967 Provatina Expedition consisted mainly of members of Northern Caving Clubs. The assault was to take place in July/August when it was hoped that the snows would have melted sufficiently to enable a safe descent to be made. Throughout the winter and spring the expedition slowly gathered momentum. Training meets were held down most of the big Yorkshire pots to get the feel of airy pitches. A lifelining winch was constructed to aid in climbing the pitch. It carried 1000ft of wire rope which was thought to be adequate for any pitch which followed the initial drop. It was proposed to use ladders throughout, with an additional 600ft Spunstrom rope for emergency use.

Transport consisted of a hired twelve-seater Bedford Minibus and an aged Diesel Landrover with trailer. The final arrangements were for the Minibus to carry twelve people with as much kit as was possible and for the Landrover to carry four people with the rest of the equipment and food in the trailer. The payload of the Minibus was 25cwt and that of the Landrover 28cwt. At Ostend, however, the Landrover was protesting and more weight had to be taken by the already overlaid Minibus. Some of the food in the trailer had to be committed to the still waters of the harbour.

The 2,500 mile journey to Papigon, the village nearest to Astraka, was commenced on Saturday the 14th of July, going by way of Belgium, Germany, Austria and the Yugoslavian Autoput. Along its 1000 miles of mostly straight boring road a large number of wrecked lorries spoke of the consequences of falling asleep at the wheel. At the Greek border a two-hour delay was incurred whilst unravelling the Greek variety of red tape. The Athens road was followed, through Thessalonica, down the Aegean coast to Larisa, passing close by Mount Olympus.

At Larisa the busy highway was left to the hurrying Athens-bound tourists and the quieter route inland was sought. The road to Ioannina lay over the dreaded Metsoven Pass, scene of bitter fighting during the last war. There were 70 miles of unmade road, riddled with potholes and at frequent intervals large sections of the track had disappeared down the hillside. To complicate matters further the pass was crossed in the hours of darkness, with the drivers having to peer through clouds of white dust thrown up by the vehicle in front. After five sleepless hours the lights of Ioannina were seen, twinkling from across a large lake. The party finally turned in at the camp site in the town just as dawn was breaking, only to be driven out at 8 am by the heat of the sun. The journey to Ioannina had taken seven frustrating days - three days longer than anticipated.

As Proventina lay in a military zone, close to the Albanian border, permission had to be sought from the Army. This had been done before leaving England. All that now remained was for the general in charge of the area to endorse the necessary documents. Unfortunately the party had arrived at the beginning of the weekend, also the papers were written in English, which to a Greek probably looked as bad as Greek writing does to the average Englishman. Jim Eyre's first sortie did not get him past the "armed doorman" at the entrance to Army H.Q. However, after roundabout parleying, involving the local bookie, a policeman and an array corporal, he managed to get inside, only to be told that it would have to go through the usual channels. It was simply "not done" to go up to a general and say " 'ere mate, can I 'ave yer stamp on this bit of paper", especially as there had been a military coup in which the local Militia were particularly active.

The by-now flagging image of Greece was uplifted somewhat on discovering that the local fire-water could be obtained for the equivalent of threepence a glass. Ioannina also possessed a very impressive show cave which was duly visited and photographed.

On Monday afternoon permission was finally granted and the last stage of the journey up to

Papigon was commenced. After passing through the check point the main road to Albania was forsaken for the dusty unmade road up to the village. It was on this road that Astraka the mountain mass that contains Provatina was first seen. It looked very formidably with its almost sheer walls, rising nearly 3,000ft to the summit plateau, towering over the village. The arrival of the vehicles caused quite a stir as there was only one other car in the village and that belonged to the doctor. The usual mode of transport is by donkey.

By nightfall the vehicles were unloaded and the equipment divided up for transportation up the mountain. Donkeys were to carry most of the heavy gear and individuals their own personal equipment. The night was spent in the scorpion-infested cloisters of the village church.

At 5 am the next morning the advance party consisting of Chris Sheppard (Kendal Caving Club), Ron Bridger (Red Rose Pothole Club), Jim Farnworth (Happy Wanderers) and Carl Pickstone (Wessex Cave Club), set off up the mountain, their task being to drill the holes for the winch and to find water.

An unmade road led from the village to Upper Papigon and from there a donkey track wound its way up through stunted trees towards a ridge, which afforded access to the plateau. Once above the tree line the donkey track was left and a traverse made across heavy scree under the face of the cliffs, then up steep grass and rock slopes, over the top of a large gully which cut back into the cliffs. The crossing was by way of smooth, steeply sloping slabs with a high degree of exposure. Once we passed this obstacle the plateau was reached over easier ground. The climb up to the plateau took five hours.

Provatina lay at the top of another deep gully in the base of a cliff. The shaft was approximately 50ft wide by 80ft, going back into the cliff face. From a distance it looked like a large cave entrance. However, when a stone was casually thrown down the shaft it was found to be very much a pothole. The stone took six silence-filled seconds before hitting something. Someone started to comment about its depth but was cut off by a further boom, followed after an interval of silence by yet another deeper rumble. Another stone was produced and an accurate timing taken. The stone took six seconds, followed by five seconds, then a further five to a large boulder slope. It was known that a ledge existed at a depth of 570ft so this was presumably the first striking point of the stone.

There was a stunned silence and someone suggested heading for the Adriatic Coast, but (alas!!) the plot was foiled by the strident voice of Jim Eyre, urging the rest of the unsuspecting party up the mountain with the immortal phrase "If yer not 'ard yer shouldn't 'ave come!" Reluctantly everyone got down to the job in hand.

Bolting the winch down presented a problem as the bedding of the limestone around the entrance was horizontal, in beds of about 1½ inches in thickness. While this problem was being overcome a search was made for water. A small seepage was discovered oozing from a shale bed in another gully, ten minutes away from the camp. After the removal of a few

frogs and a little more work it was possible to fill a bucket in a couple of hours. Soon the rest of the party arrived in the searing heat of the midday sun. More equipment was to be brought up later in the evening from the donkey dump at the base of the cliff.

Next morning the remainder of the gear was ferried up from the donkey dump and a start made at clearing the ledges at the top of the shaft. 700ft of ladder was put down the shaft and the telephone connected up. Jim Eyre was to make the first descent to the ledge in order to examine the possibilities of laddering the next pitch. He stepped into his harness, clipped on to the end of the winch wire and then began to clamber over the lip of the shaft. The top 20ft of the shaft consisted of ledges and it was necessary to run the winch wire over guide pulleys to reduce friction. Below this the ladder lay close up to the wall for approximately 300ft and then hung free for the remainder of the shaft.

The atmosphere on the surface was tense, the silence being broken only by the squeaking of the guide pulleys as the slender wire slowly uncoiled itself from the drum and vanished into the blackness of the shaft. After ten minutes, as the sixth layer of the wire had disappeared into the depths, the handles of the winch ceased to turn. The telephone crackled into life; Jim had arrived at the ledge. He found that it was covered in snow which funnelled down at 65 degrees to the head of the next pitch and this also appeared to be deep. Complications arose because of the extra length of ladder that had been put on to ensure that there was enough to reach the ledge. It hung down the next pitch pulling the main ladder away from the slope. The only place that it was possible to get off the ladder was on the extreme edge of the lower pitch where there was a six-inch wide ledge. Jim managed to pull up the extra ladder and secure it with a piton before returning to the surface. Chris Sheppard went down in the evening, armed with an entrenching tool, to cut a working platform in the 40ft high snow slope. In four hours he managed to cut a snow hole big enough to house three people.

On Thursday morning Peter Faulkner (Bradford Pothole Club) and Ian Carruthers (Red Hose) descended to cut a trench at the top of the snow slope. This was to enable Rawlbolts to be driven into sound rock in order to belay the ladder for the next pitch. Later in the day, as more working space became available, Nigel Beattie (Shropshire Mine) joined them. Meanwhile Jim Newton (Red Rose) and Jim Farnworth went down to the village, by way of the gully at the side of the shaft, for more food. They were to return the next morning, as everyone was required for the attempt on the lower pitch.

As the Rawlbolting party were being winched to the surface it was noticed that the winch wire had developed an acute kink close to its termination. As this weakened the wire considerably it was decided to reverse the whole wire on the drum and to use the other end of the wire which also had a thimble end. After some investigation the cause of the kinking was discovered. The winch wire had a slight tendency to untwist under load over the 570ft length. The presence of a person on the ladder prevented this but as the length of wire became shorter the degree of twist was increased. The cable was under tension until the top ledge was reached so that the twisting was not noticed since the ladder was against the wall in its upper stage. When the tension was eased off to enable the ladder climber to negotiate

the edge of the ledge, the wire quickly relaxed into a large twisted bow. Usually the ladder climber's thoughts were upon other things at this stage and he would not notice this. When the cable again came under tension, the twisted bow remained and the cable became badly deformed. The problem was overcome by using a pulley with a spinning shackle. The circumstances were very similar to those which occurred when an attempt was made to recover the two bodies frozen to the North Face of the Eiger. (H. Harrer. 1959.).

To continue with the plot, the Friday morning saw Jim Newton, Bill Holden (Red Rose), Jim Eyre, Chris Sheppard and Jim Farnworth ensconced in the snow hole and slit trench, busily laddering the lower pitch. A 300ft length of ladder was lowered down the rift, the idea being that Jim Eyre would go down to the end of the ladder and report back. A good ledge would have to be found within the limits of the winch wire. The 1000ft length limited the party to finding a ledge within 400ft of the snow ledge. The snow ledge was not considered to be suitable for good lifelining operations.

Up on the surface the weather had taken a turn for the worse. The clear blue skies had given way to heavy, ominous clouds. It began to rain heavily and with the rain came the distant roll of thunder. The underground party was alerted and told to sit tight until the storm was over. As a precaution a couple of hundred feet of the main ladder was withdrawn and the telephone disconnected. The storm grew nearer and nearer and the darkened shaft was being lit up every few minutes by the flashes of lightening which flickered amongst nearby peaks. Thunder also made the fullest use of the shaft's acoustics. The underground party were by this time being subjected to a barrage of stones which had been dislodged by a small stream cascading down the normally dry shaft. The occupants of the snow hole had to bear the brunt of this onslaught as they had no cover whatsoever. It was small comfort to them to hear the stones whining down the shaft for a few seconds before impact. Their period of grace was probably spent in praying!! Fortunately nobody was hurt physically and they were winched out in a somewhat shell-shocked condition when the storm had passed over. It was decided that the bottom shaft would be attempted the following day, weather permitting.

In the morning the altimeter showed a drop in pressure so the second lifelining party consisting of Ron Bridger, Bill Bates, Russell Cox, Alan Brittain (Bradford) Carl Pickstone descended in haste to try once more, before the expected storm could strike again. The writer found the pitch really exhilarating; the top portion was as rigid as an iron ladder, due to its weight, as it hung within an inch or so of the rock. In the roof of the shaft an inlet passage could be seen which possibly connected with a snow cave higher up the mountain. At a depth of 200ft two more inlets of considerable size entered in the gully side of the shaft, unfortunately out of reach of the ladder. At this stage the shaft was much larger, being some 100ft by 80ft. There was a steeply sloping snow covered ledge on the far wall at a depth of 300ft.

Here the shaft's tremendous size could be seen in its entirety, giving a very high degree of exposure. Upwards, the squat silhouette of the guide pulley could be seen against the azure Greek sky. The harsh cries of the choughs which nested above the shaft were plainly heard

as they wheeled and turned in the narrow patch of sunlight, no doubt annoyed at this intrusion on their privacy. The ladder could barely be seen as a thin silver line against the dark rock of the shaft, whilst the slender winch wire was lost altogether in the gloom. Below, the ladder twisted its way downwards into the semidarkness of the shaft. Far below could be seen a smudge of whiteness, upon which four glow-worms were moving about their business. The muted sound of someone talking floated past but the words were lost in the underground vastness. The blows of a hammer echoed up the smooth black walls as yet another piton was driven into the rock.

The descent continued but now the ladder swung free some 15ft from the rock. Another 200ft and things became much clearer and the ladder dropped into the top slit trench. Viewed from above the habitable portion of the ledge looked most uninviting. However, upon alighting in the deep trench and clipping himself on to a handy piton, the latest arrival found things much more comfortable.

The ledge was roughly pear-shaped, sloping at 65° down a snow slope towards the small end which formed the edge of the lower pitch, the length being 60ft and the width 50ft. The ladder touched the slope between two buttresses 15ft apart, the left-hand one of which formed the edge of the lower pitch. The narrow trench had been cut in hard packed snow at the top of the snow slope, exposing the rock wall of the shaft. Into this had been driven a number of pitons and expanding bolts, for lifelining purposes. The 4ft high parapet of the trench overlooked the snow hole 20ft below. Access to this was by way of deep steps cut into the face of the slope, down the side of the left-hand buttress. The snow slope continued up beyond the right-hand buttress for another 40ft at the same angle. A few feet below the snow hole the walls narrowed to form a slit, 8ft wide, which looked out into a tremendous rift. The rift ran at right angles to the direction of the major axis of the shaft and in the same direction as the gully. The rift was 20ft wide and extended beyond the limits of vision on either side of the slit. There was a 15ft wide inlet in the far wall, opposite the slit.

A stone dropped immediately beneath the ledge produced a bang after five seconds and took another five seconds to reach a large boulder slope. If a stone was flung to the right in the rift a delay of eleven seconds produced a deep rumble on impact. This was presumably a large boulder slope.

Whilst Bill Bates and Ron Bridger were being winched to the surface Russell Cox and I attempted to plumb the pitch. The only things available on the ledge were a reel of telephone wire and an entrenching tool. With these a plumb-line was rigged up and lowered down the rift directly beneath the slit. The plumb-line snagged on something a good way down and refused to go any lower. The line was marked and then reeled in, to be measured later.

Meanwhile Jim Eyre had descended to the ledge and had secured himself to the additional 600ft lifeline in preparation for a look down. He proposed to go down 300ft to see if there was a ledge within reach. In a few minutes all was ready, the surface winching party were alerted and the descent began. The acoustics of the rift were even better than those of the

entrance pitch and every word could be heard perfectly. He descended to a depth of 200ft and could see a further 100ft. He reported that the wall opposite the slit continued straight down, along the whole visible length of the rift, while the wall beneath the ledge began to bell out gradually, giving a little hope of a ledge within reach. The rift curved out of sight on either side of him with smooth walls. He returned as there was little point in continuing.

As the party were being winched out of the shaft the long-expected storm broke around the ears of the surface party, causing them to winch up much faster than usual, to the extreme discomfort of the person climbing the ladder. The only time his feet were allowed to climb the ladder properly was when the winching party became tired and another team had to take over. This procedure was repeated five times on the way up. As the last person was hauled out of the shaft, water cascading down the pitch caused some concern by dislodging stones and also by loosening up the snow on the ledge half-way down the upper shaft.

After a really foul night Sunday dawned bright but a glance at the "storm predictor" revealed that the same sort of treatment was in store for us later in the day. Ian Carruthers, Peter Faulkner and Dave Stevenson (Shropshire Mine) descended to take photographs and to de-ladder the lower pitch. They also plumbed the lower shaft to verify the first measurement of 705 ft to a suspected ledge and dropped a flare down it. The flare did not ignite properly so that it did not illuminate the rift as expected. However it did bounce off a sloping ledge a long way down before dropping into the blackness of a huge chamber and going out. During his stay on the ledge Dave Stevenson was hit by a small stone which penetrated his boiler suit and layers of woollens, causing some pain. He recovered the offending object after a search - it was the size of a large pea!!

The storm clouds gathered once more and it began to rain heavily, sending streams of water down the shaft. This dislodged huge chunks of snow from the top ledge. These hurtled down the shaft at terrific speed and burst into thousands of fragments upon hitting the ledge. The de-laddering party were all brought out without incident.

Scarcely had an hour passed, however, when the malevolent Greek Gods delivered their farewell message in the form of a flash of lightning. It came completely unexpectedly, without any prior warning rumblings, just as the entrance ladder was being hauled up and coiled. It struck the ground a mere couple of hundred feet away, with the earthing currents passing along the 600ft of ladder strewn over the ground around the shaft entrance. In doing so ten people received shocks of varying severity, the worst hit being thrown to the ground. Ian Carruthers sustained partial paralysis of his arm and burns to his fingers, which fortunately cleared up after a few hours.

That night Jim Eyre and Chris Sheppard gave Astraka best, and retired down to the village to organise the donkeys for the morning. A Tyrolienne was rigged up, using the winch wire, to drop gear from the shaft entrance 1000ft down the gully. It took all of the next day to ferry the equipment down through the hazardous stone-racked gully to the village. After a riotous evening, during which Anglo-Greek relations were firmly cemented the party retired

very much the worse for wear.

On Tuesday evening the nine members of the three-week party set out for Ostend in the Minibus, leaving the remainder to follow in the Land Rover. A thirty four hour journey brought the Minibus up to Ljubljana in Northern Yugoslavia. A leisurely drive followed, reaching Ostend on Saturday night, in time to catch the ferry back to England.

CONCLUSIONS

The unfortunate choice of the Diesel Land Rover for transport completely disrupted the programme of the expedition by causing five days of the three-week visit to be wasted. Its low cruising speed and doubtful reliability told a sorry story over the 2500 mile journey. By arriving in Ioannina three days later than was expected, another two days had to be spent waiting for permission over the weekend.

The five days wasted severely curtailed any investigation on the Astraka plateau, other than at Provatina itself. It had been hoped to look at the Vikos resurgence and also to search for other shafts in the area - one report told of a shaft with a fifteen-second drop. However the six days spent up on the plateau were very fruitful indeed. The shaft was found to be far deeper than expected, in fact the 570ft to the snow ledge and the 705ft plumbed in the lower rift, without the unknown portion of the rift being added, proved the shaft to be deeper than the 1135ft entrance shaft of the Pierre St. Martin, the previous deepest known shaft. Tests carried out since returning from Greece puts the eleven-second free drop of the stone in the rift at approximately 1600ft. This makes Provatina Abyss the deepest known shaft in the world, with an estimated depth of 2200ft to a large boulder slope.

Every member of the party descended to the Snow Ledge some two or three times. The lower rift was probed to a depth of 300ft and a ledge of sorts located at 705ft. The rift had an estimated depth of 1600ft to a boulder slope. The 1600ft depth could be disputed, as the timing was taken with a sweep second hand of a wrist watch. A one-second error would make quite a difference in depth. (The writer hopes to publish an article on the topic in the near future). The entrance shaft and snow ledge were photographed and the whole of the shaft examined with a view to a further visit.

Unfortunately the expedition was not the first to reach the snow ledge. The doubtful privilege of being the first person to reach the ledge fell to Ken Kelly who led a much-publicised "do or die" attempt a few weeks previously. They succeeded in getting three men down before retreating as they considered it was "too dangerous". The lower rift was not sounded or probed by them, in fact the only indications of their visit was a pile of ironmongery lying around the shaft entrance and a lot of bad feeling in the village, due to their behaviour. The villagers had to be convinced that the second British party to visit Provatina had nothing to do with the earlier one led by Ken Kelly, before normal relations were resumed.

FUTURE PROSPECTS

The depth potential of the shaft is tremendous due to its position of over 4000ft above the only resurgence in the area. The Vikos emerges as a river 20ft wide and up to 6ft deep, welling up through boulders in the 4000ft deep canyon which cuts into Astraka. The area is very heavily faulted and information gleaned from a French geologist conducting field work in the area suggested that Provatina was on a huge fault which ran in the same direction as the gully and the rift in the shaft.

The depth so far plumbed accounts for half of the drop to the resurgence. What the remainder consists of will only be revealed after reaching the boulder slope at the bottom of the rift. Being a fault it could drop another 2000 feet and then continue as a huge rift to the resurgence or just end in a chamber like Balinka Pit in Yugoslavia.

So much for the prospects, now for the problems! As can be expected the problems associated with a shaft of this size are bordering on the impossible. It will require a very strong team of engineers, rather than cavers, using a motorised winch. For an English party there is the problem of transporting all the equipment 2500 miles to Papigon. This year's expedition came to the conclusion that the route down through Yugoslavia was not the best way. The route through Italy to Brindisi, by ferry across the Adriatic to Igoumenitsa and then to Papigon offers a fitting alternative to the Metsovon Pass and Yugoslav Autoput.

A lesson was also learned concerning transport. The Minibus was capable of carrying as much weight as the Land Rover at a much higher speed and could cope with the road conditions without too much difficulty. If time is a crucial factor it is well worth considering using either a 30cwt Ford Transit van or a Bedford Minibus.

Then there is the formidable task of getting all the heavy equipment up to the plateau. From Papigon the plateau is inaccessible to donkeys but it is believed that they can be brought up from another village on the other side of the Vikos Gorge. A donkey can carry up to 180lbs. if the load is distributed over its carrying frame. At the equivalent of £1 /donkey/day the expense is justified if only to relieve three men of the gruelling slog up the mountain with packs on.

The problem is mainly one of breaking the heavy winch down into packs capable of being carried by donkeys. It may be more easily visualised if the winch wire alone is considered. Without the drum on to which it is wound the cable weighs in the region of 400lbs and can only be carried up in one piece. However there may be a possibility of Greek Army help for any future attempt on the shaft. If helicopters could lift the winch up to the plateau it would save a lot of time and effort and could make all the difference between success and failure.

After managing somehow to convey all the equipment up to the plateau, there remains the problem of getting someone down the shaft and back again in one piece. When the ladder was withdrawn from the lower rift it was winched up in one length from the surface and it

gave indications that it may be possible to drop down past the snow ledge to the suspected ledge at 1275ft. To do this it would be necessary to construct a gantry along the left-hand buttress at the entrance to the shaft. This could be done fairly easily as there are ledges on to which the frame could be bolted. An outrigger would be required at -1275ft to enable the cable to pass the ledge and reach the boulder slope at 2200ft. The shaft spirals down in three stages.

There are also problems associated with the weather likely to be met during the short period when it is possible to gain access to the plateau. Hazards are caused by the electrical storms which occur very frequently in the area. After all, what better lightning conductor is there than 2000ft of wire rope stretching down inside the mountain? In addition Snake bites have accounted for four deaths in the village in the past few years. A helicopter is on permanent standby during the summer months for medical services!

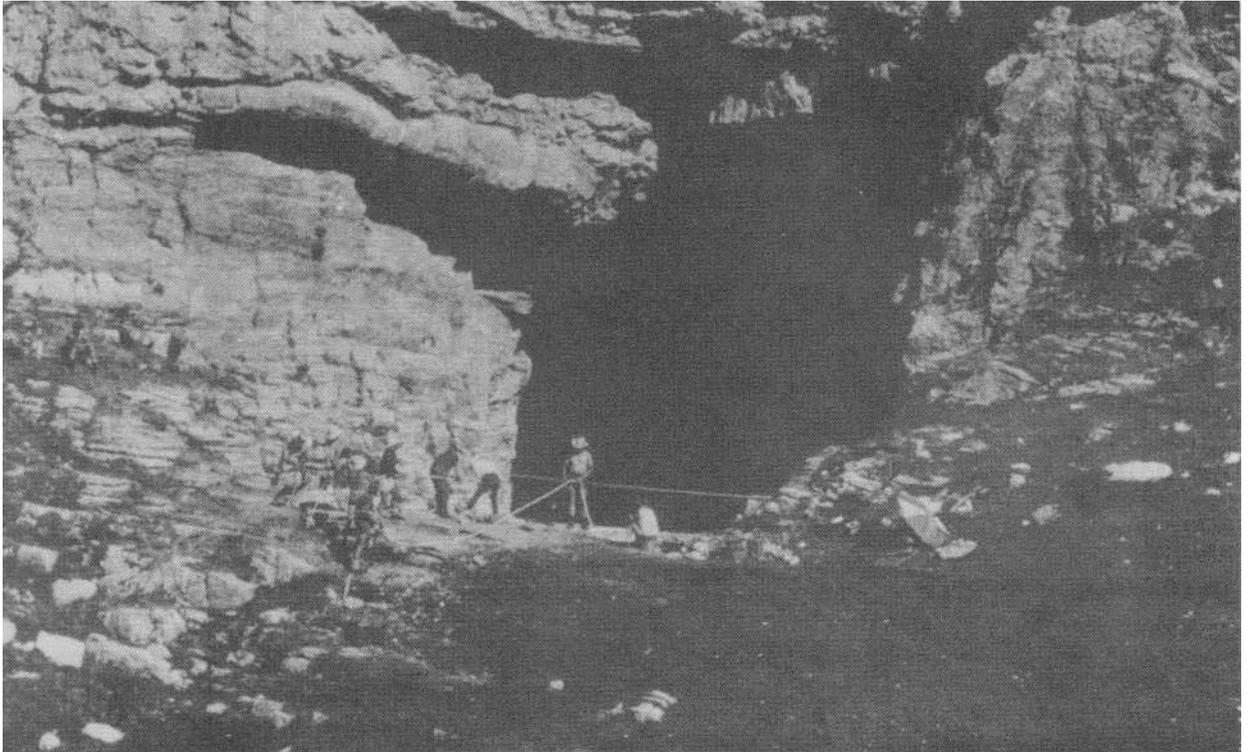
On reflection the writer thinks the visit was well worth all the effort put in by the members of the expedition and hopes that this personal impression of a visit to Provatina will perhaps fire the imagination of caving engineers somewhere, to design a winch capable of dropping someone down the shaft whilst still being portable enough to be transported up to the plateau. Further attempts on the shaft are being made by different expeditions this summer. Meanwhile Provatina waits as it has done for the past few million years. Perhaps it will not yield its very well kept secrets until rocket man-packs have become part of caving equipment!

REFERENCES

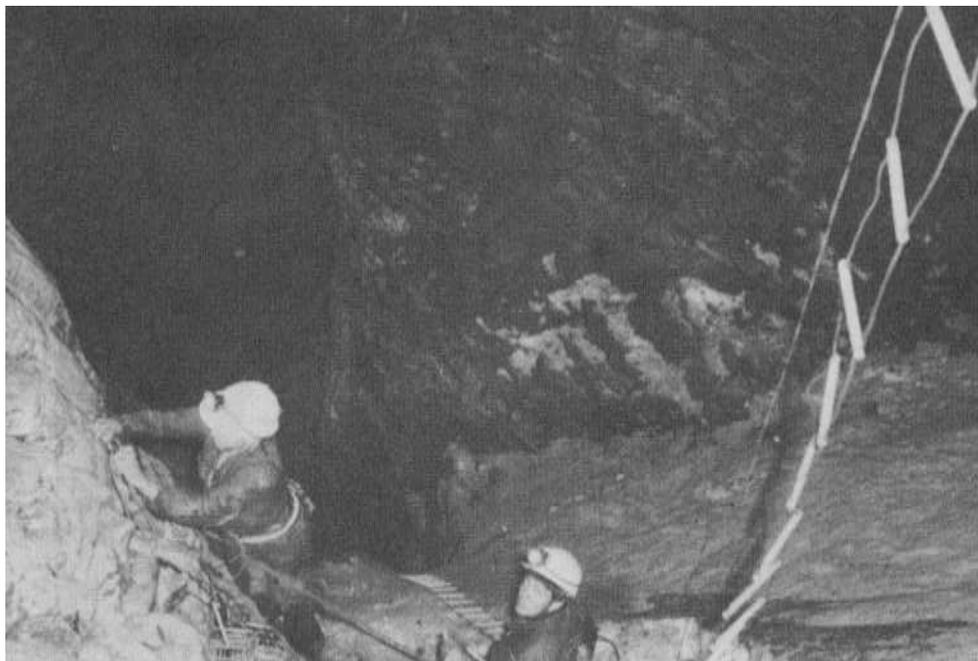
Harrer, H. *The White Spider*. (Rupert Hart-Davis) 1959. A translation from the original German edition by Hugh Merrick (1958).
Heap, D. *Caving Beneath The Pennines*.

See also:-

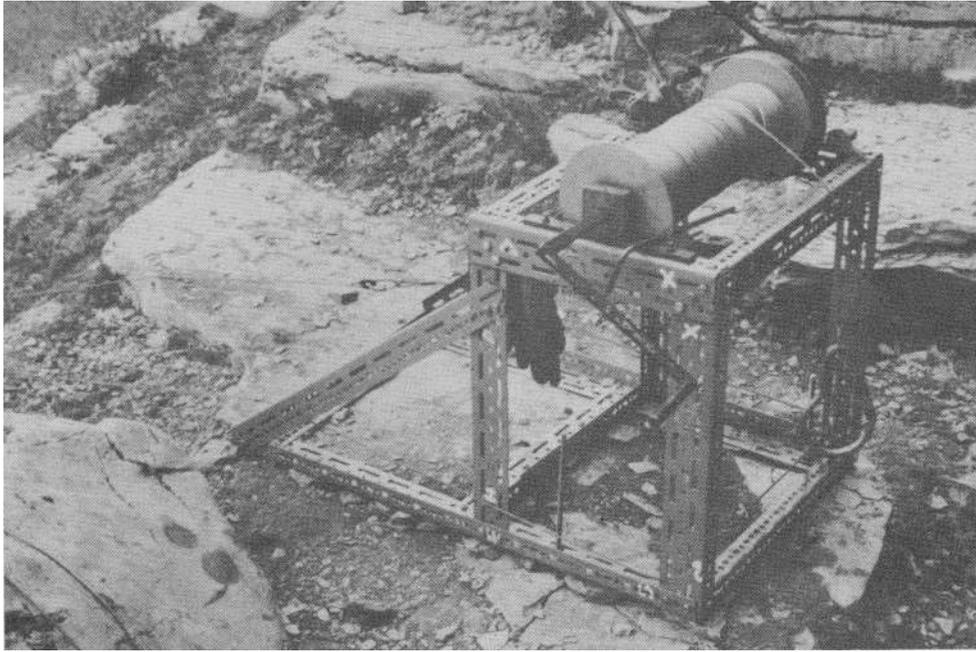
CRG. Newsletter No. 104 December 1966.
CRG. Newsletter No. 109 December 1967.



The Entrance to Provatina Abyss.
Photo by Russell P. Cox



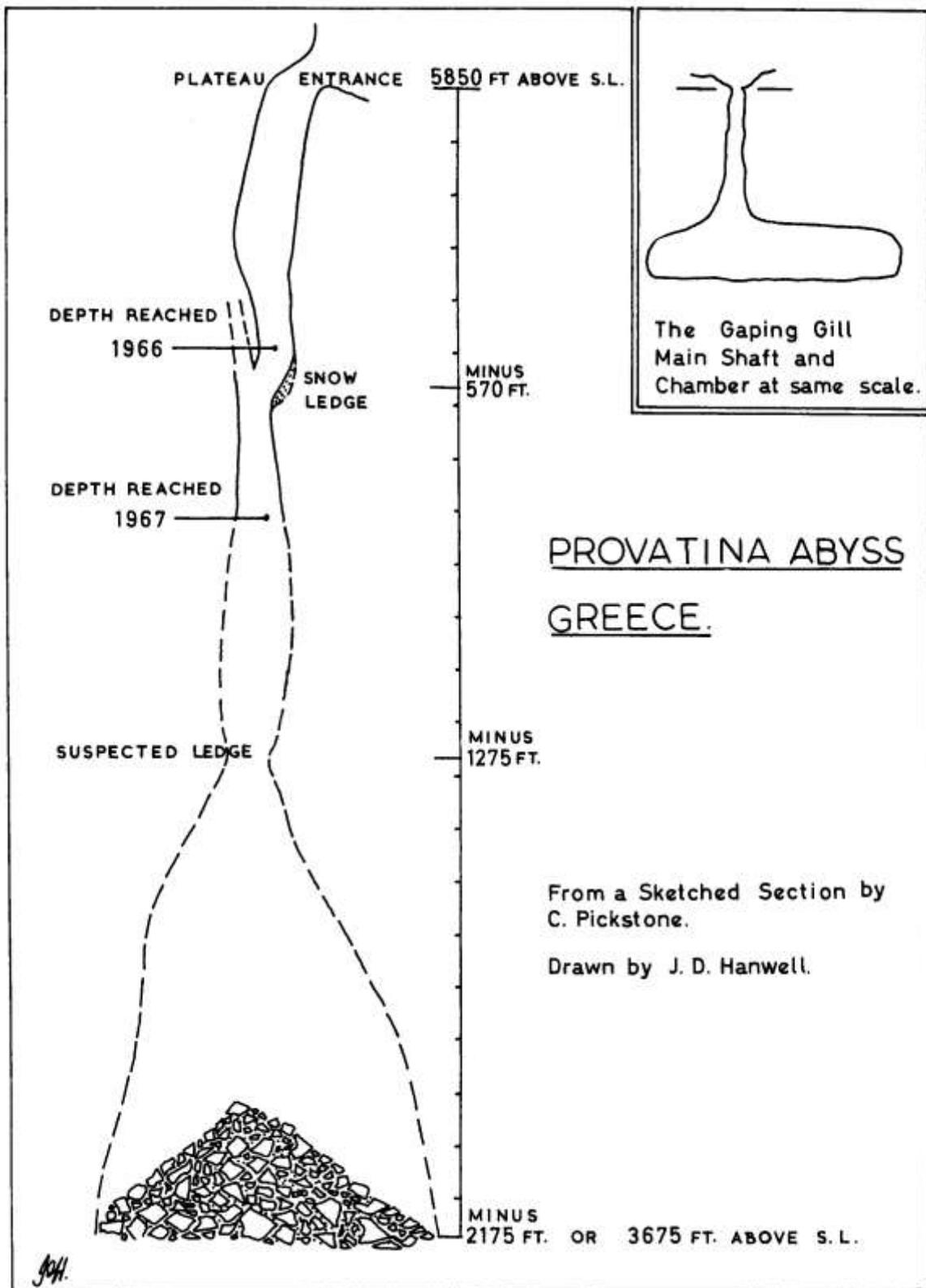
Laddering the Second Pitch
Photo by Russell P. Cox



The Hand Winch
Photo by Russell P. Cox



The Lip of the Entrance Shaft
Photo by Russell P. Cox



Mendip Notes

by Schizomycetes

Within a stone's throw of Hillgrove

While John Cornwell has decided to give himself, his diggers and Hillgrove Swallet, a rest for the time being, it is understood that Dallimore's Hole across the road has been reopened yet again. John plans a new attack in the autumn with the help of Alan Fincham whom we welcome back to the south.

Over the weekend ending June last a subsidence occurred in the roadside verge at Green Ore. The Somerset County Council's Highway Department at Wells invited some cavers to inspect the shaft that appeared later. On Tuesday 2nd July, Michael Ferraro of the Axbridge Caving Group, with two friends from the Cotham Caving Group, investigated the site and reported a nine feet wide shaft about 120 ft deep. It was of course an old mine which had been capped. The descent was filmed by the regional T.V. newsreel team. (The shaft has since been substantially re-capped, so it is hoped that the Mendip Cave Registry will be given a description and exact grid reference for the record).

It is understood that the Severn Valley dig nearby is progressing slowly but surely.

At Wookey Hole

Over the past months Dr. E.K. Tratman has been conducting full scale archaeological excavations at sites between the paper mill and the cave. Meanwhile, the Cave Diving Group Hut, Crook's Rest, has been removed to improve the decor of the car park and make more space available. Where do the divers change nowadays?

A short while ago, Dr. Oliver C. Lloyd celebrated his 20th year at the Bristol Medical School by holding a dinner party for his University colleagues inside Wookey Hole Cave. We gather that the after-dinner entertainments involved guided tours, and a showing of the recent film about the cave. It must be unusual to see yourself diving into the same water that you are sitting by!

While on this topic, O.C.L. and Dave Savage recently came to the conclusion that, since many cave divers now train and "relax" in "open" inland waters and the sea, it was essential that the appropriate life saving techniques be part of their repertoire. For this reason they have taken the bronze medallion course of the Royal Life Saving Society. They report having learnt a lot more about the problems of carrying out rescues on diving operations; so much so that O.C.L. is going to run a course this autumn at Bristol for other who wish to do likewise.

The Speleo Drain

Dave Drew is the latest caver to leave us and swell the ranks of "the professionals" in Canada. Suitable celebrations were held at "the Wookey Hole Inn" on July 20th! He takes up an appointment at the Department of Geography in the University of Saskatchewan, Regina, (in

The Prairies!) almost in time for the start of the next long winter "freeze up". While he will be much nearer Derek Ford's new stamping ground in The Canadian Rockies, we understand Dave has his sights set towards establishing a Tropical Karst Field Centre somewhere in the sunnier Caribbean. Clever stuff! Nevertheless, he plans to return as often as possible to dig Pirate Chamber, which is probably as good an excuse as any.

There are strong rumours that newly graduated Tim Atkinson is to take over Dave's Mendip Karst Hydrology Research Project next September in the Department of Geography at Bristol. It's rapidly becoming a matter of "The King is dead, long live the King!"

Vendetta

Tony Dingle has finally consolidated the loose footings of the Cuckoo Cleeves entrance shaft. Earlier, a "run-in" while he and Tony Oldham were down the cave occasioned a false alarm M.R.O. call-out (see W.C.C. Jnl. Vol. 10 No. 117 June 1968 p. 78). He writes, "Yesterday, Sunday (19th June), with the help of Dave Everett, Richard Whitcombe and Keith Barber, I completed the brickwork which was required to make safe the entrance. 'Run-ins' under the concrete pipes are now almost certainly a thing of the past". Many thanks to Tony and his helpers.

Longwood Swallet

Some time ago unknown vandals irresponsibly smashed the lid of the entrance blockhouse to this cave. Tim Hodgkinson (Hon. Sec. of the Charterhouse Caving Committee, Oddset, Alfred Place, St. Michael's Hill, Bristol) has temporarily secured the entrance with cemented-in iron bars, so, without a chisel to get in and a bag of cement to seal the bars again, the cave is effectively closed. It is understood that Dave Irwin is to fit a new door shortly.

The Axbridge Caving Group Dig at Nordrach (See report in this Journal).

At the end of June the diggers broke into a 200 feet long tight rift terminating in a fairly well decorated collapsed boulder chamber. Apparently this ruckle has promise, and so work continues apace. The dig has been called Foot and Crutch Swallet. It is close to Nettle Pot and only some 160 feet away from the better known Pine Tree Pot. Pictures of the chamber were screened during regional B.B.C. Television report about the breakthrough during the first week in July.

Expedition to the Andes, Southeastern Peru

It is understood that Dennis Kemp is to join the 1968 Plateriyayoc Expedition from Bangor Normal College of Education Mountaineering Club. The leader, Alan S. Hunt, hopes to get every member of the expedition onto a virgin peak in the 17000 feet Cordillera Urubamba.

Since the region is unmapped and unexplored it looks as if Dennis and his colleagues are in for an exciting time. Let's hope we get to see his slides after he returns on September 9th, and perhaps glean some information about the caving prospects in The Andes!

Northern Notes

by Carl Pickstone

The Whitsun Discoveries in Gaping Gill

The bank holiday period saw the usual hive of activity in the Gaping Gill shake hole as the Bradford Pothole Club winched a record number of people down the main shaft. Taking advantage of the easy access to the system, members of the Bradford turned their attentions to the end of Old East Passage while London University cavers re-scaled the nearby Craven Aven hotly pursued by Leeds University surveyors re-surveying the East Passage-Car Pot link. Amidst all this activity the Bradford party surreptitiously added about 2000 feet to East Passage.

On Saturday 25th May a party led by Gerald Benn investigated the "sump" prior to the Terminal Chamber of Far East Passage, finding well over a foot of airspace. This led to a very muddy pool which had been probed by several previous parties without success. A strong party returned to the scene a week later. Gerald Benn and Alan Britain ducked under a flake with half an inch of airspace and prodded the mud roof at the far end of the pool. A small hole was made and a howling draught started blowing through. A few more minutes work and a hole big enough to squeeze through enabled them to get into a large 10 feet high cross rift. To the right the rift closed down in calcite formations but there was a way on to the left. The rest of the party, comprising of John Green, Mike Bycroft, and Dave C. Brook, (all Bradford members), Christine Davies (Manchester University Speleological Society), and myself, followed. The left hand branch continued through mud banks with 10 feet long straws hanging from the roof. After 100 ft to 200 ft the 15 ft wide meandering passage lowered to a coarse sandy crawl and a junction was reached. Again, the right hand passage closed down after about 100 ft, but the left hand branch led upwards through a further sandy crawl for 120 ft or so whence it eventually dropped into a 15 ft wide passage with the roof going up out of sight. Yet again, the way to the right along this Canyon could not be followed since after about 100 ft it terminated in a large 30 ft high aven named Bradford Aven with a small inlet stream flowing down and sinking in the floor. However, on the way back I noticed a crawl off the top of the drop into the Canyon. This developed into 10 ft wide 3 ft high passage adorned with fantastic helictites and straws. So numerous were the formations that I found it difficult to progress without damaging some. After crawling for an hour or so along the twisting passage the party reached a cairn-like feature called Prudence Cairn because, as lights were getting dim, a halt was called. However, it was found that a tight squeeze led to another junction beyond which was choked to the left with sand but continued to the right along a loftier passage with two 20 ft deep potholes in the floor. At this point I decided to rejoin the party since we had been underground for 10 hours and the Main Chamber was a long way off. On 3rd June Gerald Benn, Alan Britain, John Green and Dick Glover returned to complete the exploration past the potholes. A complex of large muddy boulder strewn chambers with inlets and avens was found. A rough survey was made and photographs taken. It has now been surveyed by Dave and Allan Brook of Leeds University.

The 2000 or so feet of The Whitsun Series bears generally southeast to a point under Clapham Bottoms. It is quite possible that the end boulder choke connects with a shake hole on the surface hereabouts.

Bradford's glory, however, was somewhat eclipsed by the Leeds party finding approximately 5000 feet of cave beyond the static pump in Hensler's Stream Passage a fortnight later. It was reached by blasting through a calcite squeeze in the passage which runs above the sump. It is low and wide with a few pools having very little airspace, and ends in a 200 ft high chamber blocked by boulders. Also there is a 70 ft deep pool in the extension which is thought to be within 300 ft of Terminal Lake in Ingleborough Cave. A large fault line runs across Clapham Bottoms between the two.

It was London University Cavers who really deserved to find something over Whitsun after spending well over 85 hours in Old East Passage re-climbing Craven Aven as well as probing the pool at the end. In fact they got no further than previous Craven and Bradford parties who have attempted to climb the aven. Nevertheless, they are going to try and climb the new Bradford Aven in the Whitsun series before removing their maypoles on the Craven Pothole Club winch meet over the August bank holiday.

Car Pot

When Leeds University Speleos resurveyed the pot through to East Passage in Gaping Gill, they found the Peverol survey to be wrong. Monty Grainger admitted that there had been a discrepancy between Car and Old East, but had assumed Car Pot to be right and so "bent" the survey of East Passage. The latter is more accurately portrayed on the old Gemmel and Myers Key Plan of the system.

Bar Pot

Dr. Farrar has approached the Northern Council of Caving Clubs about putting a gate on the entrance to the pot. Reluctantly, he has decided this because of the continual violation of the booking system. Bar Pot affords the easiest way into the Gaping Gill system, but if two large parties clash at the big pitch the situation becomes chaotic. The Wessex discovered this to their cost a couple of years ago when they and the Chelsea happened to be doing the same trip; a Bar Pot - Disappointment Pot exchange. Recently, a southern club visited the pot, after patiently awaiting for several months for a free date, only to find another large party down who had no right to be there. While this sort of thing has been happening for years, it is now becoming a serious problem as more people take up caving. Matters have been brought to a head by an unauthorised party camping at the bottom of the big pitch over Easter last and leaving piles of refuse and carbide smoke defaced walls. Unfortunately for the vandals their writing enabled them to be traced. Dr. Farrar has their names and addresses, and it is some small comfort that they are not members of any club. Once again it looks as though the majority will have to suffer the consequences of stupid action by an irresponsible few.

As often, such pointless behaviour has further ramifications. In this instance Settle Rural District Council are currently taking an active interest in the problem of pollution of Clapham's water supply.

White Scar Cave

It may be possible in the near future that cavers will be allowed "officially" into the extensions beyond the tourist section. It appears that "persons unknown" have found an alternative entrance, and over a mile of new cave. The prospect of nocturnal wanderings through a "back door" is disturbing the owners of the tourist cave, since to date they have denied cavers access to the system. It seems they may well wisely resign themselves to controlled entry via the easier and safer "front door". Negotiations are taking place with the Northern Council of Caving Clubs.

P. 2. Newby Moss

Roger Sutcliffe of the Gritstone Club has been busy in another part of the shake hole which contains the old Northern Pennine Club dig. He has met with some success having discovered an 180 feet deep .pot ending in a boulder choke.

The Kingsdale Master Cave

The long awaited Leeds Speleos' survey of the system is now on sale. This excellent publication is a MUST for all cavers who visit the north, since it has become another classic ranking with the Lancaster-Easegill System. The survey embodies Simpson's, Swinsto, and Rowten pots, together with the Master Cave, to C.R.G. Grade 4-5C. The surface features are to Grade 5-7. Copies may be obtained from Dave Howitt at 3 Beeston Park, Garth, Leeds 11, at 5/6 each post free, or alternatively through The Wessex Survey Scheme from Tim Reynolds, 23 Camden Road, Bristol, BS3 1QA.

Ireby Fell Cavern

A stile has been erected by the Northern Council of Caving Clubs in the wall which had to be climbed when approaching the pot from the Masongill side. Please use it!

Northerners Abroad

Tony Blick, John Green, and Alan Britain of the Bradford Pothole Club, on a flying weekend visit to Ireland, extended a known small cave near Doolin, Co. Clare, to a length of 3500 feet without reaching the end. The cave is very wet and arduous, and contains a 40 feet pitch. They intend to continue the exploration in August when they will have more time.

The latest news from Gary Pilkington in the Canadian Rockies is that he and Mike Boon have surveyed 12,000 feet of the main streamway of Castleguard Cave in an attempt to locate a lofty aven with the surface. This is to by-pass a long duck which forms the entrance series. Last year Mike Boon and Pete Thompson penetrated six miles along the streamway on a marathon 24 hours trip without reaching the end! Just after they emerged the cave flooded and the duck sumped for a month! Taking a few days off Gary and Mike tried to hitch into the U.S.A. but were turned back as vagrants. That's what happens when you associate with The Shepton!

Ken Kelly has returned once again to the Provatina Abyss (see article in this issue of the Journal). This time his party has a motorised winch with a two-man cage. Also at the shaft are the 16th British Parachute Brigade led by Major Geoffrey Norris. They have reported reaching minus 1300 feet, which will be the second ledge which Russell Cox and the writer plumbed whilst with Jim Eyre in 1967- The second pitch was plumbed at 705 feet to a ledge, with the top pitch of 570 feet making a total of 1275 feet. We estimated the third pitch to be about 900 feet to a large boulder slope, so it remains to be seen whether or not Kelly can bottom the shaft with his 2500 feet of winch cable before Jim Eyre returns in 1969.

The Happy Wanderers are off for a two month visit to Bulgaria this Summer. We trust they will have better fortune than Tony Oldham had last year. (Tony's report of his 1967 trip to Bulgaria will be published in the October issue of the W.C.C. Journal).

Erratum

In the last "Northern Notes" it was inadvertently reported that Harold Lord of the British Speleological Association dug out Pasture Close Pot, when in fact it should have been Harry Long of the B.S.A., and the pot Pasture Gill Pot. Regretfully such slips of the pen can occasionally happen when one is dealing with the vast amount of news in an area as big as the Yorkshire Dales.

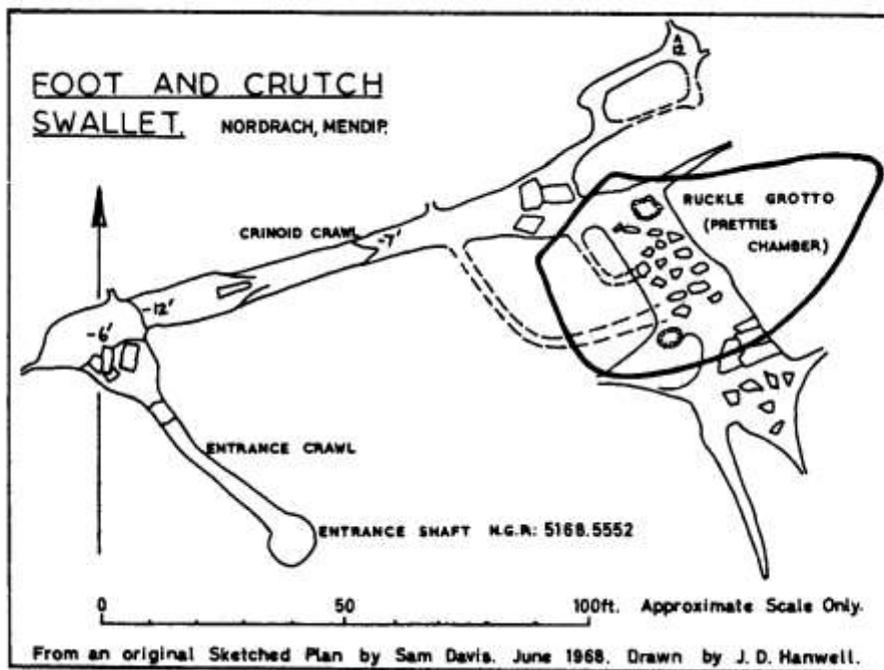
Foot and Crutch Swallet
by Sam Davis

The dig was started by the Axbridge Caving Group in September 1967 to be followed a month later by the Foot and Mouth restrictions. This interlude has given the cave its name.

A large airspace was encountered at a depth of about 17 feet and the cave itself entered at approximately 19 feet on June 19th last. The first trip was made at midnight, after a lift back from The Hunters Lodge with Mike York, and the cave explored to within 50 feet of the entrance. The exploration ceased here because of the late hour and the unstable nature of the rock. However, the following morning the cave was revisited and a rough survey made of the more accessible parts.

On the next day a hole was noticed in the roof of the terminal boulder ruckle. This was gingerly entered to reveal a small but very well decorated chamber, elliptical in cross section and displaying 10 inch straws and small helictites. Further examinations showed that, although much of the rock appeared unstable, it was not as bad as first feared. On the 22nd of June a "tourist" trip of Axbridge members descended the cave and looked around for likely spots to dig. Two excavations were started. A photographic party recorded the formations in Ruckle Grotto on 24th June.

The most northerly of the digs, (after a bit of chiselling) in a tight passage with a Z bend, led into a rift ending with a 12ft aven. It was noticed on the 26th June after a heavy rain storm that there was a small stream at various points in the cave. A week later the entrance shaft was cleared of loose rubble and a gate with a lock installed. It is requested that a 25 ft ladder, belayed to the digging tripod, is used to descend the shaft since the sides are still loose. To date the total length of passage is 200 feet, and the maximum depth 70 feet.



CAVING IN THE SAUERLAND REGION OF GERMANY

by Tony Oldham

Situated on the edge of the Ruhrgebiet - the German equivalent of the "Black Country", the Sauerland is a refreshing contrast of meadows and woods. It is also one of the richest caving areas in Germany, containing over 100 caves, with a possibility of many more just waiting to be opened up.

In a lightening visit during Whitsun week my good friend Herr Egon Perkuhn of Iserlohn took my wife and I on a conducted tour of a representative selection of local caves.

Our first trip took us to the "Felsenmeer", which literally means "The Sea of Rocks" a most apt description for a valley filled with limestone pinnacles intercepted by clefts and abysses up to 20 metres deep.

An explanation for this rocky "sea" is not as simple as it may at first appear. Local geologists advance conflicting theories, varying from cavern collapse to iron mining. Possibly both theories might have some bearing on the matter. Iron mining has been carried out and is certainly responsible for some rock exposures, but many of the pinnacles show signs of water erosion, possibly caused by water in the top soil. Gradually the soil has been washed down into the underlying series of caves. I can bear out the last statement, for when we examined some of these caves we found them to be well blessed for mud!

The cave I am about to describe was designated H. 1. F.M. (Cave No.1, Felsen Meer). This was a typical joint determined cave, formed mainly on north north-west and westerly joints, with lesser development on north and north-east joints. Possibly the most interesting feature was the roof levels indicating 3 distinct levels, to those advocates of water table concepts.

There still remains a lot of work to be done in this area. Herr Perkuhn and his colleagues estimate that so far they have surveyed about half of the known caves, and they still have to collate roof levels etc.

The next cave we visited was called the Excentriques Höhle. It has a rather short history being discovered by the Nazis in 1944. It appears that due to the heavy toll taken by Allied bombing, tunnels were dug into nearby hills for underground workshops. There is no need for me to relate the events which made the tunnels redundant. A brief tour around the tunnels themselves was significant, for though they were barely 24 years old, they contained an impressive amount of stalactite formations; a curtain 3 ft. long and 1¼" deep, and cave pearl nests, to mention but two phenomena. Even the cave pearl formation which revolves around a small piece of gravel is a surprisingly quick process. Egon showed me a piece of gravel which he had placed in a cave pearl nest only 1 month previously. Even in that short time the sharp edges had been rounded off and layers of stalactite were beginning to build up.

At the furthest point which the tunnel penetrated the hill it had broken into a natural cave passage, exceedingly muddy and ending in a roomy but deep sump, as yet undived!

Reverting to the subject of our visit, the Excentriques Höhle, the entrance is situated about 100 metres from the tunnel mouth. The tunnel has bisected a cave passage; in the right hand wall (facing daylight), the cave passage peters out after a short distance, in a muddy choke.

To the left a 2 metre climb led up into an ascending passage which, after a short distance, opened up into a cross rift. Here we could see how the cave got its name, for entwined around a cluster of stalactites were delicate wispy threads of helictites, with the appearance of cotton wool. A few metres along the rift a large hole appeared in the flow, and then followed a desperate section of knee and back work, between smooth stalactite walls beneath a gaping chasm - or so it appeared, as the rift opened out into a lower series, which was 5 metres beneath us. We took a few photographs precariously perched over the pit. All the time I was conscious of just how much gear I use to take a photograph, lens hood, filter, cable release etc., but I managed to take a few shots without dropping anything, so I was spared a descent into the rift bottom, with the promise of an even more difficult ascent out again.

The cave is already showing signs of wear, as it is used by British troops for "character" training. Cigarette packets and spent carbide abound. The only consolation is that the traverse puts off all but the most enthusiastic speleos, thereby affording a little protection to the formations.

Our final cave was the Alte Höhle, or Old Cave. Steeped in history, it is first mentioned in 1477 in the Lubeck Chronicles. In 1813 a Prussian Prince visited the cave and for a time it was known as "Prinzenhöhle". In the same year Pastor Wulfert mentions the cave in an article entitled "Zum Wohle der Fremden" (For the benefit of Strangers). The popularity of this article was such that in the following years the cave was stripped of many of its speleothems.

The Alte Höhle is situated on the east of Iserlohn in a middle Devonian Limestone Quarry, near the village of Sundwig, in a hill called the Perikberg, which contains 7 other caves. Another well known cave is the Heinrichs Höhle. A former show cave it is situated about 300 metres away and at one time it was thought that the 2 caves might connect, but a recent survey shows over 100 metres still separates the known passages of the 2 caves.

During the last war the entrance passage of Alte Höhle was used as an air raid shelter by the local villagers, and illuminated by electric light. In 1952 a new section containing some fine stalactites was discovered by some local cavers. The cave was gated to afford some measure of protection but shortly afterwards the door was broken down and many of the speleothems were damaged.

The main passage is about 250 metres long with an erosion profile of 4-6 metres wide and 2-3 metres high. The passage ends in a mud choke. A dig of some years ago has extended the main passage by a few metres, and Egon hopes eventually to completely dig out the choke as the passage looks certain to continue. Unlike many English caving areas there are still many cave passages awaiting discovery in Sauerland, without digging.

About 80 metres from the entrance is a large, rather shattered chamber. We negotiated a series of tight virtually holdless chimneys, where I was frequently glad of the top rope provided by our

guide. The highlight of the climb was getting into a drainpipe about 3 metres from the floor and 2 metres from the opposite wall. After what seemed like an eternity with my centre of gravity pivoted on the lip of the tube, I managed to overcome my equilibrium and worm my way along the drainpipe.

We were justly rewarded when we emerged from the rock jaws into the "Central Hall" situated 18 metres above the entrance passage and the highest point of the cave. The chamber is 25 metres long and 10-15 metres wide, filled with straw stalactites and dumpy stalagmites. To the west is Säulendon (literally Pillar Cathedral) containing the metre high pillar (photo) but our way on led to the east, first to the Cascade Chamber, which required a short abseil for entrance pitch and then on to the Schichtfugengang (Bedding plane passage). Here another stop was made for photographs. Now, after 5 hours even though we had not seen all of the cave, only 1 kilometre of it, it was time to return.

However, the return journey was not without a little excitement. First there was an airy traverse over a 17 metre pitch, where we were glad of the protection given by some stumpy stalagmites as running belays. It was at this point in 1954 that 2 local cavers were involved in a fall, one of them dying as a result of his injuries. Our guide told us of another incident this time of not such a serious nature. A party were crossing the pit without a lifeline. The leader got safely across but the second man started to slip on the smooth stal. His hands were frantically clutching for a grip when the leader had the presence of mind to stamp on them. His cries of fear at once turned to cries of pain as he shouted to be released. Fortunately by this time the third man in the party was able to come to his assistance.

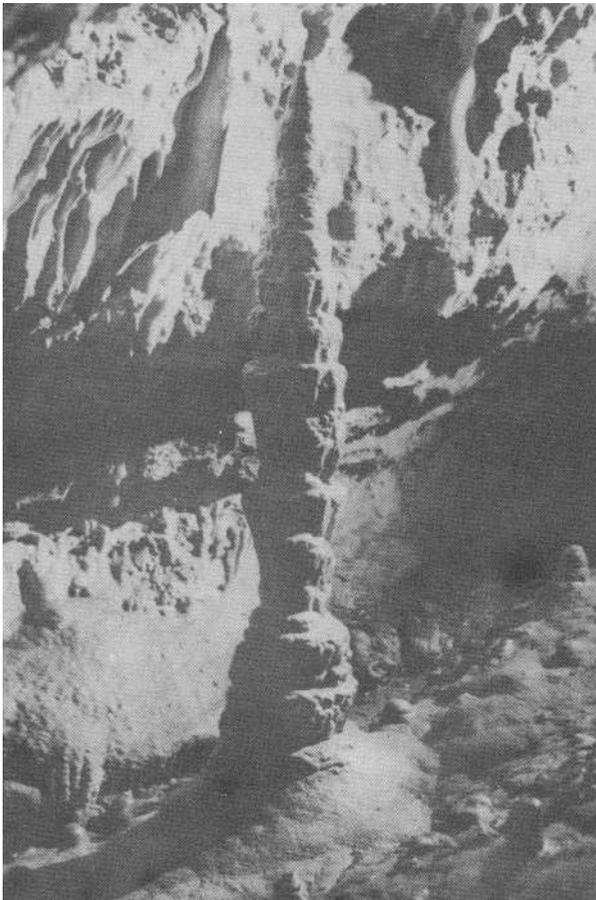
The way down to the main passage was a little bit of an anti-climax after this. A tight chimney, breathe in and woosh, one was at the bottom. A couple of crawls and once more we were out in the main passage, but on the opposite side from where we left it!

Upon making our way out towards the entrance we could not resist a quick look at a short section called "The New Series" which was discovered by our guide and Herr Pielsticker in 1958. A tight vertical squeeze between some boulders followed by a painful crawl finally lead into a chamber 50 metres long, 7 metres wide and 3 metres high containing some very pleasing stalactites. After the usual photographs we departed for the entrance.

The rest of the trip was more sociological than speleological, and involved sampling, in no small measure, the local "brews", but that is another story.



Herr Ergon Perkuhn in the Central hall



Two metre high Stalagmite in the Schichtfugengang.

Photos by A.D, Oldham.

BOOK REVIEWS

International Journal of Speleology. Volume 2 Pt. 4. 1966 (17th March, 1967) Edited by G. Claus, R. Husson, and G. Nicholas. 309-474 pp. 15 plates plus table of contents for Vol. 2. Published quarterly by J. Cramer, 3301 Lehre, Germany, at DM 80 (£7. 4s. 0d.) per annum.

The final part of the second volume of the International Journal of Speleology opens up a new era with the publication for the first time of papers by British Scientists. Of the total of 18 papers presented 8 are in English, 2 in German and 8 in French, all abbreviated to Eng. Fr. and Ger. after the title.

"Quartzite Karst in Southeastern Venezuela" (Eng.) by William B. White (Dept. of Geochemistry and Mineralogy, Pennsylvania State University, University Park, Pennsylvania U.S.A.) Gene L. Jefferson, (Stauffer Chemical Company, Green River, Wyoming, U.S.A.) and John F. Haman (Department of Geology, University of Utah, Salt Lake City, Utah, U.S.A.). Minor weathering forms on the Roraima Quartzite in the Carrao River Basin of Southeastern Venezuela have the appearance of the karren that forms on limestone surface in Karst terrains. High precipitation (up to 7,500 mm per annum) and rock surface temperature of 40° to 50° appear to take the quartzite into solution and deposit it as opal.

"Geographical distribution and validity of the troglobite Asellid *Asellus lusitanicus* Frade (1938)" (Fr.) by Guy Magniez, Laboratory of Animal and General Biology, Faculty of Sciences, Dijon, France. This Asellid is recorded from three caves in the Serra de Aire (Central Portugal) and appears to be a good eyeless species of the "Coxalis" group.

"The Cave dwelling Mycetophilidae (Diptera) of the Biospeologica Collection (IVth and VIIIth series of "Caves Visited")" (Fr.) by Anca Burghel-Balacesco, Institute of Speleology "Emil Racovitza" Str. Dr. Capsa 8, Bucurest 15, Rumania. From 1909 to 1927 Jeannel and Racovitza visited and collected in numerous caves in Europe. The author has studied the collection and presents a list of 30 species including several rare species.

"The faculty of absorbing coloured substances in the cuticle of *Caecosphaeroma burgundum* Dollfus, an Isopod Crustacean, in subterranean waters" (Fr.) by Francois Graf and Claude Marvillet, Laboratory of Animal and General Biology, Faculty of Sciences, 21 Dijon. The discovery, in certain subterranean waters, of "pigmented", brown or black *Caecosphaeroma burgundum*, led to the systematic study of the action of pigmented substances on these crustaceans. The results of these experiments demonstrate that the colorations thus obtained or observed in nature are due to agglutination of coloured substances on the surface of the carapace and, in certain cases, to an impregnation of the cuticle itself.

"An annotated list providing information on the Mammalian fauna of the caves of Banat (Rumania)" (Fr.) by Alexandrina Negrea, Lazare Botoșăneanu, and Ștefan Negrea, Institute of Speleology, "Emil Racovitza", Str. Dr. Capsa Nr. 8, Bucurest 35, Rumania. From about 70 caves the authors list a rich collection of osteological material and specimens of living fossil mammals. A list of the caves is given with details of the identified species for each cave. Under each species the caves which supplied the material are listed. This is followed by an inventory of the osteological material and by observations on the living animals (especially bats). Fifty three

mammal species (fossil and living) were accurately determined (14 carnivores, 6 artiodactyls, 1 lagomorph, 10 rodents 3 insectivores and 19 bats).

"Two new Halacariens from Israel - *Limnohalacarus capernaumi* n.sp. and *Lohmannella heptapegoni* n.sp." (Fr.) by Anelya Petrova, Museum and Zoological Institute, Boulv. Rouski, Sofia (Bulgaria). Two new types of Halacariens are described. They are from a thermal spring (temperature 29°-32°C) of brackish water in Capernaum, Israel.

"*Neobisium* (*Roncobisium*) *allodontatum* n.sg., n.sp. of the Pseudoscorpion Neobisiidae (Arachnides) living in a cave in the Department of Saône-et-Loire, France". (Fr.) by Max Vachon, Museum of Natural History, 61 Rue de Buffon, Paris 5, *Neobisium* (*Roncobisium*) *allodontatum*, a species inhabiting a cave in Saône-et-Loire, France, belongs to a new subgenus of *Neobisium* of which the essential characters are the possession of accessory teeth on the chelae and a relative position of trichobothria recalling that of the species of *Roncus*. A determination key fixed the position of this new subgenus with respect to the 4 other known subgenera of *Neobisium*.

"Underground solution Canyons in the Central Kentucky Karst U.S.A." (Eng.) by Richard A. Watson, Cave Research Foundation, Department of Philosophy, Washington University, St. Louis, Missouri 63130 U.S.A. Solution Canyons are underground voids 1-15 metres long. Floors are stepped, ceilings level and size increases downstream. Their genesis is also described.

"Mosses associated with the artificial lighting in Beatushöhle (Switzerland) together with comparisons from other European Caves" (Ger.) by R. Bernasconi, Swiss Speleological Society, Bern, Mergartenstr 13, Switzerland. A statistical comparison of the flora associated with artificial lighting from Beatushohle and 18 other European caves shows that the habitat is dependant on the amount of moisture and the constituents of the bed rock.

"Further Investigations into Bacterial and Algal Populations of Caves in South Wales" (Eng.) by M. Ann Mason Williams, Department of Microbiology, University College, Cardiff, U.K. Some physical data collected over a period of a year in 7 locations are reported, including humidity, air and water temperature, pH of the water, as well as the organic oxygen demand of the water. It is shown that seasonal variations in the physical constant in this particular cave system are not well marked. Algae and bacteria were isolated from the soil samples and from calcareous deposits. A total of 30 algal species of which 13 belong to the Cyanophyta, 22 to the Chlorophyta and 7 to the Chrysophyta-Baccilariophyceae were found. 38 were heterotrophic and 7 autotrophic bacteria were isolated. The thin films on water surfaces, besides diatoms, contained several flagellates and some ostracods, while some protozoa were found associated with the bacteria and algae in the soft calcite deposits.

"Summary of the Results obtained during a Preliminary Investigation into the Bacterial and Botanical Flora of Caves in South Wales" (Eng.) by M. Ann Mason Williams, Department of Microbiology, University College, Cardiff, U.K. and K. Benson-Evans, Department of Botany, University College, Cardiff, U.K. The results of an investigation into the bacterial and botanical flora of South Wales caves are presented in tabular form. Bacterial counts and species isolated from the caves both from soil and water samples as well as from the air, also the macroscopic

plants found in the photic zone are enumerated.

"A Psychrophilic Yeast from Mammoth Cave, Kentucky" (Eng.) by David Brashear, Ralph F. Wiseman and Thomas C. Barr, Jr., Departments of Microbiology and Zoology, Institute of Speleology, University of Kentucky, Lexington, Kentucky, U.S.A. 40506. Samples collected in Mammoth Cave, Kentucky, revealed the presence of a psychrophilic yeast, tentatively identified as a strain of *Candida albicans*. The yeast is saprophytic on dead animal tissues and exhibits a pale yellow colour when growing in the cave. In vitro, the yeast grows poorly at 37°C and well at 13° and 20°, but loses its pigmentation. It is non-pathogenic in rabbits but appears to show low-grade parasitism in frogs.

"A New Species of *Gomphonema* (Baeillariophyta) from Mammoth Cave, Kentucky". (Eng.) by Sam L. VanLandingham, Department of Biology, University of Louisville, Louisville, Kentucky, U.S.A. In some materials collected from Mammoth Cave, Kentucky a diatom was found which could not be identified with any known species. A taxonomic description of *Gomphonema hotchkissii* nov. spec, is given.

Editor's Note: "Bioluminescence in *Melosira varians* Ag. (Eng.) by G. Claus. Bluish green bioluminescence in a diatom, *Melosira varians* Ag. growing in an abandoned tin mine in Cornwall was observed. Upon microscopic examination the chloroplasts of the algae were found to be very pale but no other feature was seen which could be correlated with the luminescence.

"The Ecological position of bodies of water in caves and rock crevices" (Ger.) by Siegfried Husmann, The Limnological River Station of the Max Planck Institute of Limnology, 6407 Schlitz-Hessen, West Germany. This is the longest paper in this issue (28 pp.) and goes into considerable detail on the various aspects of the ecological study of subterranean waters.

"An Analysis of the diet of the blind cave dwelling fish *Anoptichthys* Gen and the hybride F₁ (*Astyanax* X *anoptichthys*) and F₂" (Fr.) by Georges Thines, Monique Soffie and Erik Vandebussche, Laboratory of Animal Psychologie of the University of Louvain, Centre of Experimental and Comparative Psychology, Pellenberg, Belgium. The Diet of the cave dwelling fish has two phases and the biological consequences of this situation form the basis of a theoretical discussion.

"Evidence of fluorescent substances in the yellow organs of *Caecosphaeroma burgundum* Dollfus, an Isopod Crustacean, in subterranean waters", (Fr.) by H. Descimon, Zoological Laboratory, Ecole Normale Superieure, 24 rue Lhomond, Paris V°, and Cl. Marvillet, Laboratory of Animal and General Biology, Faculty of Sciences, 21 Dijon, France. Chromatic analysis of the yellow organs of the fresh water Isopod Crustacean *Caecosphaeroma burgundum* Dollfus revealed, through observation of the chromatograms in ultraviolet light, the occurrence of both absorbant and fluorescent substances. Among the latter, only isoxanthopterin has been identified. The yellow pigment, which probably has a pteridine nucleus, could not be identified as a known compound and will be the object of

later investigations.

"Algal Growth Experiments in the Baradla Cave at Aggtelek (Biospeleologica hungarica XXI), (Eng.) by Erzsebet Kol, Botanical Division, Natural History Museum, Vajdahunyadvar, Budapest, Hungary. The author kept 108 algal strains (Cyanophyta 53, Chlorophyta 35, Crysophyta 20) of axenic cultures from the Kol-Algotheca in the Botanical Division of the Hungarian National Sciences Museum in the Baradla Cave, at Aggtelek (Hungary) in darkness for 204-420 days under different environmental conditions. The experiments have proved that several algal strains can tolerate well the complete absence of light. Furthermore, that some algal strains shows intensive development even under such conditions. These axenic cultures kept in the cave in metal boxes on inorganic medium have shown that the energy source used by these green coloured algae is not some byproduct of chemotrophic bacteria, nor is it available organic material, but that it must be some kind of radiation which is able to penetrate even the metal boxes.

A.D.O.

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CAVES AND CAVING A guide to the Exploration, Geology, and Biology of Caves. Text by Marc Jasinski, English adaptation by Bill Maxwell. 4" x 6", over 100 photos in colour,, 160 pp. published by Paul Hamlyn, London in the "A Little Guide in Colour" series, at 5/-d. paperback (or 7/6d hard cover). (Obtainable from Tony Oldham, 17 Freemantle Road, Eastville, Bristol, 5. BS5 6SY.)

The first impression is what a fantastic bargain, so many colour photos, all for 5/-d! Perhaps the fact it was printed in Italy is the reason for the low price of this book, but whatever the reason, it is the sort of book that every caver will buy for the photos alone. The text has been very skilfully adapted by Bill Maxwell (Hon. Sec. of the Chelsea Speleological Society) for the English reader. Photos of English caves such as Balch Cave, Dan-yr-Ogof, Agen Allwedd etc., have been included. The book could be subtitled the "Caver's Bible", as a quick perusal of the contents will show. Part one is entitled, "How do you become a Caver?" Details such as items of equipment, exploration techniques, organising trips and cave hazards are given. Part two describes cave formations, Part three, deals with cave biology, flora and fauna, Part four is entitled "Caving Activities" and covers a very wide field from cave photography to cave surveying and water tracing. Personally, I find Part five to be the most interesting section, "Where to go Caving". This gives a potted account of caving in England, Europe and the other continents, and includes gems of information on caves in the U.S.S.R., Poland, Lebanon, China, Laos etc. The book is concluded with a book list for further reading, a brief list of caving clubs, a list of major caves and potholes in Great Britain, and finally the ubiquitous glossary.

A.D.O.

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Adventure Underground by Nicholas Barrington. Published by Robert Maxwell at Pergamon Press (1968) at 2/6 post free from Headington Hill Hall, Oxford.

This 15 page pamphlet is one in the fortnightly series of "Take Home Books" which present factual information about a wide range of subjects written by experts. The annual subscription for being posted the series regularly is £3.5.0. Nick Barrington has prepared a straightforward and well illustrated introduction to the sport of caving which will undoubtedly appeal to both novice and expert. Having verbally conducted the reader around Upper Swildons the author concisely deals with the problems of cave photography, his own forte. Sound advice is given would-be cavers, and the overall impression well befits the title.

A list of general caving books and regional guides is given, and the location of the British show caves appended for those who want, "a good idea of the scenery to be encountered underground but not the difficulty or any idea of the hazards of a real caving trip." The main drawback is the rather high price for such a publication.

J.D.H.

Transactions of the Cave Research Group Vol. 10 No. 1 Jan. 1968.

With the exception of a short factual report of the Leeds University P.E. Department 1966 Expedition to some caves in the Djurdjura Mountains, Algeria, the remaining 35 pages of this issue are devoted to papers by well known cavers who are also members of The Wessex.

Dr. E.K. Tratman's 1966 Annual Address on "Pleistocene Bone Caves with Special Reference to The Mendips, Somerset", ranges over some of the problems in interpreting the stratification of three general groups of bone cave, viz. natural pitfalls, animal dens, and those occupied by man. Using comparative studies he points to the apparent gap in the humanly occupied bone cave sequence in Britain at the first cold phase during the Wurm (Last) Glaciation, and correlates subsequent cultures with the climatic changes which follow. Evidence from Mendip caves in particular is cited. Dr. Tratman concludes with the cautionary plea that cave excavators must maintain the highest standards, and displays the eternal optimism of all diggers in saying, "it is most unwise to think that all the good sites have already been finished".

The second paper deals with Mendip too, being an attempt by Prof. Derek Ford to place the diverse features of the major Mendip cave systems into a single acceptable origin/development model. This was a crucial part of his D. Phil thesis in 1963 and it is pleasing to see parts of this original work appearing in print. Having established a simplified single phase development in which phreatic systems become modified by isolated vadose action, he elaborates on a more realistic multi-phase pattern related to abrupt and substantial falls in the sink-to-rising channels of the known major cave forming streams. Particular cave passage features are used to support the validity of the multi-phase proposals. Five major systems are fitted into the scheme; Swildons and G.B. are correlated with the Cheddar Caves, while the anomalous complex of St. Cuthberts is explained by prolonged structural damming at Ebbor before "leaking" downstream to Wookey Hole. Individual variations within the model indicate a threefold classification of the modern vadose caves. Primary types like the minor tributary inlets of Priddy Green (and North

Hill Swallet) are quite recent, then come the Secondary types like G.B., and finally the more complex Tertiary systems. (These terms of course are not to be confused with those used to identify Eras and Periods in geological time).

Now we know the modern Swildons drains to Wookey Hole, not Cheddar, it is interesting to speculate on the mechanism which could have occasioned the change of drainage line. Is it late underground capture? And, if so, what caving prospects remain on the abandoned former route? On the other hand, might the geomorphic evidence for the suggested Swildons-Cheddar link embody some chance relationship hinging on the amount of cave known to date? How as yet undiscovered extensions to either network would affect the reasoning for such a link must remain the unknown factor. To some extent the answer lies in a correct appraisal of groundwater movements throughout the area. In fact the paper concludes with a discussion on "Water Table Considerations".

The Transactions concludes with the 1967 Annual Address by Eric Hensler on "Some Examples from the South Harz Region of Cavern Formation in Gypsum". A contrast is drawn between the self-sealing nature of the smaller cracks in this gypsum beds (called Gips) and solution processes in limestone voids when under attack by acidified water. Only on the weathered surfaces of Gips is karsting evident. The three types of cave encountered are all shallow near-horizontal systems where there is a constant supply of fresh unsaturated water direct from the surface. Weingartenloch and Grosse Trogsteinhöhle are taken as examples of Cleft Holes, while a group of three caves northwest of Horden, one near Walkenreid and another near Neuhof, are considered Solution Holes (or Laughöhlen). The third type, aptly called Swelling Holes, were not visited by the author on the expedition in question but a survey of "Waldsehmeide" at Blumenberg is added for completeness. These curious features are formed by expansion on hydration of anhydrite beds on or near the surface. The most extensive systems in the region had been converted into munition factories during the Last War and were unavailable for study at the time the author and his Service colleagues were making their survey.

J.D.H.

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Shorter Notice

Transactions of the Cave Research Group Vol. 10 No. 2 May 1968.

This issue contains the papers read at the Symposium on Cave Hydrology and Water Tracing held at Vaughan College, The Department of Adult Education of the University of Leicester, on 3rd February 1968. With the exception of an additional communicated note by Alistair Pitty from the Department of Geography at the University of Hull on the use of calcium hardness measurements, the papers published are those reported by P.R. Cousins in W.C.C. Jnl. Vol. 10 No. 116 (April 1968) pp. 70-71.

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Oldham Mr. & Mrs A.D.	17 Freemantle Road, Eastville, BRISTOL 5.
O'Mahany K.J.	34 Monks Close, FARNBOROUGH, Hants.
Owen P.E.	11 Bayham Road, Knowle, BRISTOL 4.
Padfield M.	21 Fairlyn Drive, Kingswood, BRISTOL.
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Reynolds P.M.	Riverside, High St., Kinver, STOURBRIDGE, Worcs.
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Seer A.R.	18 Illchester Crescent, Bedminster Down, BRISTOL 3.
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Sharpe M.J.	52 St. Mathews Road, Cotham, BRISTOL 6.
Sharpe T.J.	52 St. Mathews Road, Cotham, BRISTOL 6.
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Tomkinson G.	19 Beech Road, Birmingham 30.
Tooth Mr. & Mrs T.J.	410 Wells Road, Knowle, BRISTOL 4.
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 Kings School Mountaineering Society, Kings School, GLOUCESTER.
 Kingswood School Caving Club, Landsdowne, BATH, Somerset.
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 Sidcot School Speleological Society, Sidcot School, WINSCOMBE, Somerset.
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