

SOUTH WALES CAVING CLUB NEWSLETTER

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Contents

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1. Waun Fignen Felin J.C. Jones
2. Recent Discoveries in South Wales M. Davies
3. Dan-yr-Ogofian Developments A. Coase
4. There But For The Grace of God J.C. Jones
5. Tiger Aven, Ogof Ffynnon Ddu A. Coase
6. Ras Gwyl Ddewi (Race on St. David's Feast) E. Aslett
7. Cambrian Cave Registry (Report) D.W. Jenkins
8. Flash Floods J.C. Jones
9. Fire Hydrant Passage - Pant Mawr E. Smith, D. Clarke
10. Club News

-
- Hon. Secretary J.V. Osborn, Springfield Farm,
Fownehope, Hereford
- Hon. Treasurer J. Bevan, 62 The Greenway, Sutton
Coldfield, Warzicks.
- Hon. C.R.O. G. Glissold, "Silhouette", Staunton,
Nr. Colefield, Gloucs.
- Hon. Records Officer D. Webley, 39 Heol Isaf, Radyr, Glam.
- Hon. Editor G. Thomas, "Greenfield", Heol Sarn,
Llantisant, Glam.

WAUN FIGNEN FELIN

On Sunday, October 17th, a number of people went up to the dig and found some remarkable signs of flooding. The old winch was covered in peat as was the dam and it looked as if the high water mark was 8 ft. above the top of the shaft. The remarkable thing was that there was no debris in the shaft and the bottom of the dig was as clean as a whistle.

The site is, at the moment, undergoing extensive modifications. A new winch is nearly completed and the shaft has been lined with conveyor belts to prevent the bucket from catching the shuttering; this belting will also prevent anything that does fall from knocking out shuttering. A trap door is being constructed at the dog-leg to enable work to continue in safety when the bucket is being raised and a telephone line has been installed from pit bottom to the winch.

From this you will gather that after the slow progress of recent months we intend to press on with Waun Fignen Felin.

Why?

The answer is obvious:- there is a cave down there and we mean to find it. This is an easy enough statement to make but we do have a number of interesting facts to encourage us in our efforts. Time is also on our side - we have plenty - remember it took seven years from start to finish to get into Gwm Dwr Jama.

The facts which make the dig so interesting are:-

- (i) The water connection has been proved with Dan-yr-Ogof and the hole takes a considerable amount of water in flood.
- (ii) In winter a strong draught goes in at the excavation and the shaft gets covered in ice. In wet summer conditions the draught comes out but after a long dry spell the direction is reversed.
- (iii) The excavation is at the foot of a vertical limestone cliff. The rest of the edge of the peat bog has gently sloping sides.
- (iv) The excavation has been entirely through limestone boulders. No grit or sandstone has been found.
- (v) The peat bog is underlain by a grit fill. This grit is stranded from the main grit (see Fig. 1.)

The most puzzling feature is the draught. This is going the wrong way. It should be coming out at the dig in winter if this is the highest point in the system. Fig. 7 illustrated one possible mechanism. A is Dan-yr-Ogof and D is the excavation, the two points being connected by the river cave. Two outlets B and C are proposed on ground higher than D and a sump at E is situated in the river cave between B and C. In winter the draught flows A to B and D to C and in summer when E is sealed the draught reverses. After very dry summer weather when the sump is broken, the draught flows from A to E, C to D.

A sequence of events which have led to today's structure in the area could be explained by the other facts mentioned earlier. The significance put on these facts in this article is obviously biased towards there being a cave where we are digging.

The hypothesis is that long before the bog and in a period when the grit cap extended well north of its present position, a cave ran E.W. passing through the present day excavation. This gave rise to a large shake hole. (See Figs. 2 and 3). This idea was first put forward by T.M. Thomas when he explained the reason for the grit underlaying the peat bog.

This shake hole now became one of the main drainage centres of the area and rapid erosion of the more soluble limestone boulders caused the lowering of the grit beds to almost their present position. At the same time a considerable amount of organic material was being brought into the collapse as were boulders of old red sandstone. The peat bog slowly built up and the original grit boulders disintegrated leaving behind only the more insoluble particles to form a water impervious underlayer for the bog (See Fig. 1).

With the passage of time the grit retreated to the south leaving the hole exposed for more rapid erosion. This resulted in the gradual disappearance of the sides of the shake hole and the formation of gentle slopes down to the peat. This happened all around the bog except above the part of the cave still in existence. There erosion was from both top and bottom of the shake hole wall and this has resulted in the retreat of the vertical wall as opposed to its being replaced by a gentle slope. (A good example of this is at Porth-yr-Ogof).

Hence the place to dig is against this vertical wall and provided that only limestone boulders are found in the excavation we should be digging in collapse and not fill.

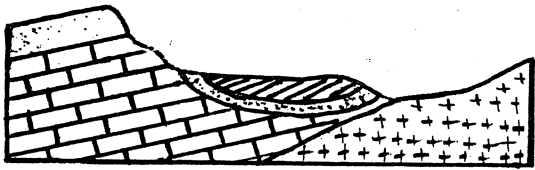
The size of the surface depression at the excavation is an indication that the cave below is a big one and the deeper we have to go to reach it, the bigger it will be. This is because boulders contain a high percentage of voids and the deeper the seat of the fall, the smaller the surface depression.

A final word on shuttering. A number of people have expressed anxiety about the shuttering as they are under the impression that the load the shuttering has to take increases considerably as the shaft gets deeper. This would be the case if we were digging through a more fluid type of fill, such as clay, sand, small pebbles or a mixture of these materials. It is not the case digging through clean rectangular boulders. These "bridge" and the load is transferred to the valley sides and cliff face. The load on the timbering is very little different at the present level than it was near the top of the shaft.

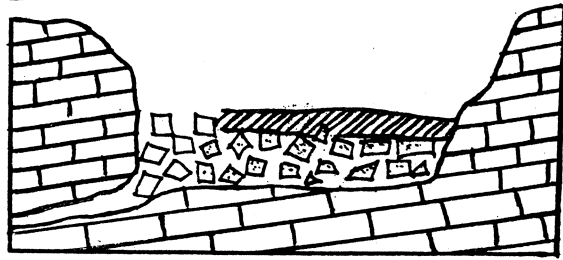
The shuttering has stood up remarkably well for the first 2 years and, provided the same standard is maintained, there should be no trouble from run-ins. It is important that a large part of the timbering is braced; just putting four pieces of wood around the shaft is pointless. Each piece which is to take a load must be held by a second piece, placed end-on in compression. As much as possible of the space in the immediate vicinity of the timber must be packed with stone and the whole round must be in compression before it is considered complete.

J.C. Jones.

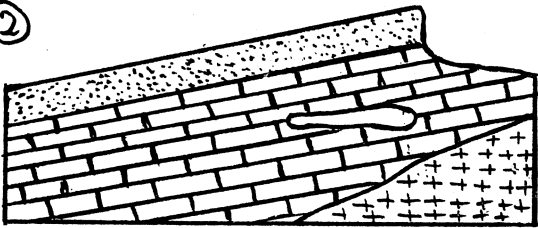
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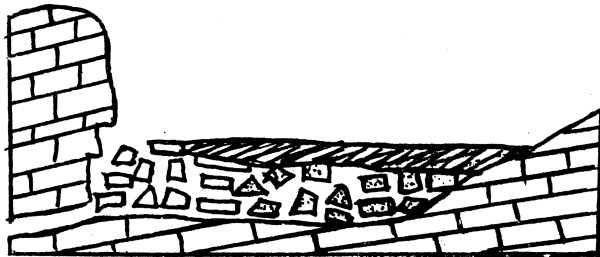
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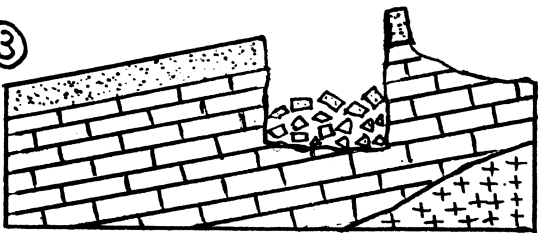
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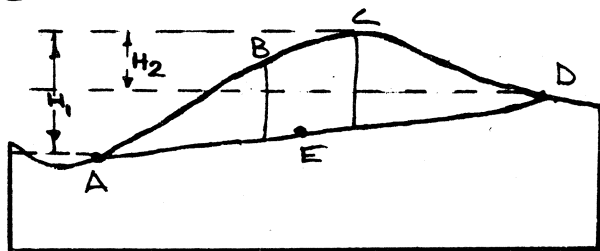
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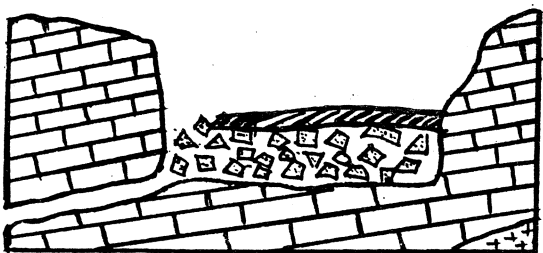
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Key

	Grit
	Limestone
	Peat
	Old Red Sandstone

J.C. Jones.

RECENT CAVE DISCOVERIES IN SOUTH WALES

This article deals with 12 new caves, and 1 important Roman mine, which have been discovered by the British Nylon Spinners Speleology Section since the publication of "Caves in Wales and The Marches". Exploration of these caves as usual has been by B.N.S. members of S.W.C.C., and various non-club enthusiasts under our guidance.

With 2 exceptions, (see below) this is the first published report on the caves. The descriptions are brief; it is hoped to issue detailed reports elsewhere.

1. OGOF CIL SANWS 2.

This is now the second cave in Dan-y-Darren Quarry at SO/025089. Discovered on 23rd August 1964 by R. Sullivan, B. Loaring and myself, it runs for about 120 feet. Mostly crawling, there are some cave pearls and one aven, and it is expected that a few feet will be lost due to quarrying. The cave follows the dip southwards and seems to have no connection with Cil Sanws 1.

2. OGOF Y GIGFRAN. (Raven's Cave)

Before the discovery of this cave by R. Sullivan and myself on 1st August 1965, there were 2 caves already known on the summit of Carreg-yr-Ogof hill at SN/778215. The one giving the hill its name lies 50 yards NE of the summit, and runs 80 feet to quite a fine grotto. It is allotted one line in the book mentioned above. The second cave was known to Clive Jones and others, and may be found about 200 yards South of the summit. It is only 20 feet long and has not been mentioned in the literature previously. The new cave runs Eastwards from a shallow swallet with a rock face, now marked by a cairn on a hillock nearby. It descends steeply from an archway absorbing a draught on a hot day, then levels out into a flat crawl. A false floor was hacked out on the 6th August to give access to what turned out to be the terminal chamber 60 feet from daylight. This was 15 feet across and 7 feet high with a stalagmited boulder pile at the far end. The destination of the draught could not be located.

3. LLANELLY QUARRY POTHOLE.

This Easternmost of South Wales potholes was discovered by me on the 21st July 1963, and part of it has been described by Jill Tuck in the B.E.C. Journal. The initial drop is only 12 feet, but this is followed by a pitch of 30 feet which was only opened after three digging trips. It leads directly to a stream passage which debouches within 200 feet into the main pot requiring 68 feet of ladder. This was first bottomed by a joint B.N.S./S.W.C.C. party on 1st September, and disappointment was keenly felt when the way on was found to be completely blocked by large boulders in the floor. These absorb all the water and a strong draught, so persistent digging here should reveal a way on. In 1964 a consortium from the B.N.S., Axbridge and Chelsea Clubs crossed the 68 foot pitch using maypoles and ladders, and explored two short passages on the far side. Both contain draughts and one at least could be dug. The entrance of this pothole (SO/225124) emits a strong draught on a hot day. A survey and a dye test have been carried out. The dye failed to reappear in Shakespeare Cave as expected.

4. OGOF PONT-Y-MEIRW. (Bridge of the Dead Cave).

Half a mile up the Taf Fawr gorge from Cefn-Coed-y-Cymmer there is a bridge connecting two halves of a cemetery. 50 yards further, on the West bank, lies the cave named after the bridge, (SO/025084). It was discovered on 6th September 1964 by R. Sullivan, T. Pinckheard and myself, and we were stopped at first, 30 feet from the entrance, by a boulder choke. When this was cleared a stream passage was revealed with the water rising from a sump pool only 120 feet from daylight. It was surveyed a fortnight later, but no way on could be found (thus breaking an honourable tradition among surveyors), and nothing more was done until 27th March 1965. On that date we joined forces with the Cave Diving Group, when D. Savage and M. Wooding, supported by C.O. George, W. Clarke and C.O. Lloyd, dived for an estimated 102 feet from base. Oliver Lloyd was undaunted by the length of the sump, and on 26th September, together with P. Allen, he pushed to 250 feet from base.

Six air spaces were encountered in this distance, and, as the sumps are getting shallower, the "free" passage may not be much further ahead. Another dive is planned by Lloyd, helped by ourselves, for 21st November, when it is hoped to push Pont-y-Meirw over the 370 foot mark.

5. OGOFAU FOEL FRAITH.

In an escarpment $\frac{1}{4}$ mile North of Ogof Pwll Swnd, at SN/761189 there are some openings which I first spotted on 24th December 1962. These were examined more closely on 18th July 1965, and 4 of them were explored by R. Sullivan and myself on 1st August. (A fifth was found to have been explored by J.F. Matthews at an earlier date.)

No. 1, numbering from the West, like the others is situated a third of the way up the scarp face. It is entered on hands and knees, and one is stopped by a fall within 6 feet. To the right there is a scalloped passage running for some 15 feet, becoming too low at end. No draught was detected.

No. 2, When first seen this was just large enough for a cat to enter. Digging revealed a pothole 10 feet deep, the floor being blocked with slabs. Because of the digging, the pothole is now open to the sky.

No. 3 and No. 4. It was not obvious that these two would connect, but both had a fluctuating draught, i.e. strongly inwards, then strongly outwards at irregular intervals of a few seconds. (This phenomenon may well be a sign of two entrances comparatively close together and at the same altitude.) A few slabs were cleared away then R. Sullivan crawled into No. 3 on hands and knees. He reappeared within 5 minutes from No. 4. About 30 feet of well-scalloped, phreatic passage was revealed with standing height near the middle. There was a dry film of stalagmite on the walls.

No. 5 (Matthew's Cave) is the Easternmost and most obvious of the entrances. A 15 foot hands and knees passage becomes lower, then suddenly opens into the floor of an upper passage which is blocked by a roof fall. There is no draught.

In conclusion it may be said that there is no chance of these caves connecting with Ogof Pwll Swnd or Dolphin's Hole. The Sawdde springs,

lower down and to the East, hold more promise for the diggers, but it is difficult to predict which area the springs drain because of the proximity of a fault to the East. The area South of the springs, i.e. the Southern slopes of Foel Fraith and Garreb Las, is of considerable interest hydrologically. The River Llynfell sinks at 762174 and this could be a promising dig unlike other swallets in South Wales, because exposed in the wall of the swallet is the remnant of a pothole, probably formed when the swallet floor was 20 feet or so higher than at present. A dig could therefore lead directly into a continuation of this pothole. The resurgence for the water of the swallet is not known, but it is probably at Ffrydiau Twrch. W.H. Little first suggested a connection between the Llynfell and this magnificent rising several years ago.

6. BROCKWELLS QUARRY CAVE.

This cave and the next three described lie within the Forest of Dean outcrop. Brockwells Quarry (or Caerwent Quarry) at 31/475895 is one of a series in Monmouthshire and West Gloucestershire regularly patrolled by B.N.S. members in search for new caves. Several solution holes can be seen in the quarry face, which is still being blasted. One 15 foot cave was in fact entered on 24th February 1963, but it soon disappeared. On 1st March 1964 a hole was pointed out to R. Sullivan, T. Pinckheard and myself in the quarry floor. The hole is generally covered over by a flat slab for safety, and is within 20 yards of the working face. The entrance is only 2 feet square and a short drop led directly into a chamber with scallops on the walls. There was a huge mound of boulders under the entrance, and the quarrymen admitted that debris by the lorry-load had been tipped into the hole for months. One worker was finally located who had entered the chamber when it was first revealed. He reported two passages leading off in opposite directions, but the entrances to these are now obscured. It seems unlikely that either passage will again be breached by blasting, but permission could be obtained to dig from the chamber.

7. TINTERN QUARRY CAVES, 31/547978.

This prolific 3 tiered quarry is approached from the B4228 road via a turning marked Walton Gooddy Aggregates Ltd., (from whom permission should be sought), at 553983, and it provides panoramic views of the Wye Valley. Cave No. 1 was discovered by R. Sullivan and myself on 2nd March 1963 in the top level of the quarry. The entrance, 6 feet wide and 2 feet high, had obstructions which took about one hour to clear. There was no noticeable draught but 85 feet of passage was revealed. It runs down-dip for 30 feet to a collapse chamber which has standing height; a cutting in shale debris follows made by a small stream now dried up. The end was a bank of shale. This was dug on 10th of March, but a boulder fell out of the roof blocking the way on, and work was abandoned except for surveying.

Cave No. 2 was found by N. Tuck using binoculars from the other side of the Wye on July 5th 1964. Because of rapid blasting a photo was taken in July and again on 29th November when exploration started. The entrance was 35 feet down the 128 feet face (middle tier), and a pneumatic drill was used to make holes for belay points. The cave ran only 30 feet to a clay and boulder choke, with a section decreasing to 4 x 4 feet near the end. The walls were scalloped and decorated with stalactites. A third hole was spotted a few yards South of No. 2 but 55 feet from the top of the face. This too was scalloped, and, furthermore absorbed a large draught,

but the entrance was too narrow for a body. Further blasting may well reveal a wider section.

The third and lowest tier of the quarry, now disused, contains two sites of cave genesis. About 50 feet off the ground there is a region of scalloping and clay deposits which has not been reached, and a few yards to the South lies an entrance 40 feet off the ground which was found to be narrow, but could, perhaps, be entered after hammering.

Other caves have been explored alongside the disused railway line some 100 yards South of the quarry. Being easily accessible they may have been entered by local people. The largest runs 70 feet to a constriction, but is 12 feet high and 2 feet wide at the entrance. Its neighbours are blocked with clay within a few feet.

8. SHORN CLIFF CAVE.

This was shown to us by a forester at 542991, roughly on the 500 feet contour bordering Tidenham Chase and with inspiring views of the Wye at Tintern. It was actually opened up by a Forestry Commission bulldozer, and is adjacent to the 'roadway' between Shorn Cliff and the Devil's Pulpit. The first exploration was by R. Sullivan, D. Dudley and myself on 27th October 1963, and we found a passage only 50 feet long, high and narrow at first, which opened into a chamber 30 feet high and 5 feet wide. Its walls were coated with white and orange stalagmite flows and there is one 4 inch eccentric. Bats had also discovered the new cave as evidenced by fresh guano on the floor. It should be noted that this cave is best reached from the junction on the B4228 mentioned in item 7 above.

9. OGOF PIODEN (Magpie Cave).

A swallet cave discovered at 22/949139, roughly 1 mile East of Ystradfellte Church, and $\frac{1}{4}$ mile North East of the Ordnance Survey Station (No. 2168) on Gwaun Cefn-y-Garreg by R. Sullivan, T. Pinckheard, B. Loaring and myself on 15th August 1965. The entrance is situated in the North West end wallet on a line of swallets and leads directly to a hands and knees crawl of 50 feet. Daylight from another swallet is then seen, but the way on is downwards. A 30 feet muddy crawl peters out, and a second passage was too low to enter without excavation, but seemed to hold some promise.

On the same day a resurgence cave was noticed at 938138 below Garreg Fawr Farm. Although unrecorded in the literature, it was found to be non-virgin for the date 1958 was smoked on the wall of the dry final chamber. It is 70 feet long and the terminal sump seems to be impassable. The volume of water emerging is considerable and cave divers should try to find time to look at it. Permission (from the farm) may be difficult to obtain. The suggested name is OGOF GARREG FAWR.

10. NANT-Y-MAELOR CAVES.

These are in a small disused quarry 2 miles North of Pontypool at 32/283046. There are 3 entrances, 2 of which were found to be connected. They are remarkable only because the limestone is impure and attenuated. A few yards away there is an active, but muddy, swallet. $\frac{1}{2}$ mile down the valley there is a reservoir, and at its Eastern corner a shaft leads to some artificial tunnels under the reservoir. One of these has breached a

cave chamber containing vandalised stalactites, in a zone of grey limestone. The stalactites are shown intact on a 100 year old plan of the tunnels held by the Water Company manager. Leading to the reservoir is a $\frac{1}{2}$ mile long artificial water adit which has also broached small, usually clay-filled caverns.

11. OGOF BLAENGWYNLAIS.

A new opening was discovered in Blaengwynlais Quarry (31/144839) on the 18th October 1964 by R. Sullivan, T. Pinckheard and myself. Exploration on the 25th revealed an entrance chamber 20 feet wide by 5 feet high with a somewhat shattered roof. A passage ran 80 feet leftwards ending in two little chambers. Straight ahead a squeeze over lumpy clay led downwards to a constriction emitting a draught. Further blasting is awaited because a larger passage was visible beyond.

12. ROMAN MINE, DRAETHEN, MACHEN.

A preliminary report on this important find by Norman Tuck (B.N.S. & Wessex C.C.) has appeared in Volume 42 of "The British Caver". Over 500 feet of galleries are now known, and finds include a shard of carinated bowl dated A.D. 75 - 110, a bone comb probably of the 7th century, and an undated hearth. As usual it is difficult to get archeologists to come inside to make observations at first hand, but arrangements have been made by Tuck and other B.N.S. members to protect the contents of the mine, and the entrance has been gated, with permission from the Forestry Commission. One section with a very unhealthy roof has not yet been entered.

On Sunday 19th December Phillip Jones, Russell Pope and myself of the I.C.I. Fibres (formerly B.N.S.) Speleological Section were directed to the top bench of Penderyn Quarry by one of the workmen.

He reported that quarrying had opened a new cave a few weeks previously. At first we could not see the entrance and climbed to the top of the face for an 'aerial' view. All we could see was a suggestion of a crater in a slope of blast - induced slabs. On scrambling to the crater we found ourselves looking down into a hollow 20 ft. across with a shattered, 10 ft. high archway at the bottom. Beyond this was the blackness of a huge passage. Regular patrolling of active quarries had paid off again!

After hurrying out to don our kit we explored, taking extreme care to note particularly those features which are destroyed by even one set of footprints. Bat guano was completely absent hence it is unlikely that the cave had ever been open before. A Swiss-village type clay formation was carefully skirted and on the second visit it was taped off. The draught blew steadily inwards (temperatures outside were falling to within one or two degrees of zero), and the time was 4 p.m. A small stream flowed inwards. Stalagmites up to 2 ft. high were in evidence and there was one flowstone formation on the northern wall that must have been 15 ft. high. It may stem from a passage yet to be reached, and it ends in a row of stalactites which are all snapped off. This is believed to have happened before quarrying. (cf. Cil-yr-Ychen described in "The Speleologist", Volume 1, 1965).

In size the passage is 50 ft. high, of thick-stemmed wine glass cross-section, 20 ft. wide at the lip. The roof is flat due to cavern

breakdown; whether this is of pre-quarrying age has not been determined. 200 ft. from daylight the collapse has blocked the way on in the upper part, although there is an aven which has not been climbed. Underneath the choke it is possible to crawl into the base of the wine glass for 20 ft. The draught is very strong and digging is in progress among the boulders.

It is interesting to compare this cave with the cave Dr. F.J. North described so well in 1940 (see Powell Daffryn Review No. 43. July 1940). Slides and a survey kept at the National Museum - Wales have been examined and one slide showing the old entrance taken to Penderyn for comparison. The known part of North's cave has obviously been quarried away, but it seems possible that the new cave is an extension of the old. The cross-sections are very similar except that North's cave was half the size. About 8 years ago, so a quarry driller told me, a lofty cave was broached and blown in again within 24 hours. It was approximately in the plane formed by North's cave and the new one.

The new cave should prove to be more permanent because it already extends to the quarry's easternmost boundary fence. Some 30 photographs have been taken of the interior and of the entrance. The name is to be OGOF TWYN-Y-GLOG.

Melvyn Davies,
Cwmbran.

'Dan-yr-Ogofian Developments'

This article is partly intended to refute the suggestions made at the A.G.M. concerning the Dan-yr-Ogof "talent" spotters. It should also provide a summary of much of the last 18 months activities in the cave. Regrettably no such record seems to exist between 1940 and July 1964!

A grade 4 plan has almost been completed of the major parts of the cave and in interim copy produced. It is hoped that a good copy will be completed by Christmas. This grade was selected as ideal for a relatively quick survey and would probably have been completed by now but for the numerous extensions and exploratory trips which have become the rule rather than the exception. Selection of grade 4 was also made because other members had already started a grade 7 survey. Regrettably this foundered in Lake 1, while an equally high grade survey of the show cave reached only the Parting of the Ways.

Of the numerous finds and extensions the most significant (and most unpleasant) is probably that of Siphon Series. Entry to this series has already been described in full (in Speleologist No. 3) so only a brief summary should be necessary.

The series was entered by siphoning a pool in a passage beyond and to the left of Lake 3. A short inclined passage led to a longer and muddier pool with an airspace varying between 3" and 6". Straight through this a further pool was encountered (Mud Sump) which at first could not be passed. Later, however, a minute airspace was found, two small airbells followed and the "sump" gave. Two short but hectic digging trips led back to the river in the form of two lakes, 6 and 5. The latter is nearer 4, and was found almost immediately after 6 by the first "visitors".

Three diving attempts have so far been made here, Charles George passing through the sump at the end of 6 on the first. This is some 40 feet long, quite broad and deep, with a gently dipping but very angular roof. Beyond he penetrated a further 70' to the end of his line where he was able to stand on a shingle floor in 4' - 5' of water. Here the passage is about 30' wide with an airspace exceeding 6' in places. On the latest dive, (October 1965), by Charles and 'self, a more thorough examination was possible. This revealed a fork just before the passage again summed but despite several dives by Charles no major airspace could be reached. The major passage to the left descended quite steeply and again contained many pendant obstacles. The one to the right proved to be a very tight and unpleasant bedding plane. Two points of note:- visibility is almost nil and the flakes, pendants and ledges are all extremely rotten and give way very easily.

Unfortunately activity in the cave during this summer was curtailed by numerous floods. Much energy has been devoted to finding a way around the lakes but as yet an escape or alternative 'dry' route has not been developed. One possibility does lie in Siphon Series for a muddy tube leads off the Second Pool and then turns abruptly into a sharp rift passage (Razor Passage) very similar to one leading off the show cave. Razor Passage ends in a very interesting clear sump of some 6 feet by 4 feet but is too long for a free dive. A connection with the sump at the Parting of the Ways seems quite likely. Communication by hammer blows was made between Razor

Passage and Knockers Passage, off Western Passage in the Show Cave. The latter was so-called because of the obvious similarity (?) of our efforts to those of a muscular J. Arthur Rank employee and also because we felt the name bore a very close resemblance to what seemed most endangered by the sharp projections! However, even if a physical connection can be made between these two passages the value will be somewhat limited for in very severe flood the entrance to Siphon Passage is almost certainly sumped.

Another possibility, Alferebag Passage has for the time being been allowed to rest. This is a higher possibility, leaving By-Pass Passage (i.e. the Loopway round Lake 1) and passing over the roof of Lakes 2 and 3. A small but fast stream is encountered which enters Lake 3 at an undetermined point. The main passage is blocked by very solid calcite but the stream can be followed via a very tight rift at the top of a small waterfall. The way on is so narrow, however, that only one person has progressed beyond a squeeze just beyond the top of the 'fall.

A further diving 'find', by Oliver Lloyd, was written up in the last newsletter but as well as this newly proved connection between Pot Sump and Lake 3 another, between the former and Lake 4, was recorded by G. Platten before the war. Another "pre-war area" re-visited recently was the chimney above Pot Sump. Here are 2 - 3 well decorated small chambers but with no obvious possibilities of extension, although on the half-way ledge a crawl through a pool leads to a squeeze which would easily yield to a slim caver.

Determined attempts have been made to pass almost all of the numerous boulder chokes in the cave but there has been very little success. Most progress has been made through the one on the ledge above Cauldron Chamber where literally hours of chiselling finally permitted access into a second, very small and unstable looking chamber faced again by a vast and ominous choke. Nearby on the ledge a sand-filled passage is rapidly being cleared and while at first this seemed to be heading directly for Red Chamber it now appears to be aiming elsewhere. Two similar but mud-filled tubes enter By-Pass passage from approximately the same area. These and the size of the cauldron choke suggests something large exists in this area and as it is readily accessible when the lakes are not, a concentration of effort here during the winter could prove very rewarding.

A maypoling programme has so far covered the more obvious climbs but in general the results have been disappointing. The most recent climb was in Craven Aven, a small aven found by a visiting club when they passed a constriction near the Blue Stal Passage. At the top of the Aven a low crawl was entered and this in turn led via a very tight squeeze into a small rift-like chamber which was choked. A similar result was obtained after maypoling into the avens at the beginning of Boulder Chamber. This programme has also included the Pot Sump Aven, Red Chamber and two passages in the Round Chamber immediately above the scree slope.

The Upper Series, which was only very hastily explored before the cave was closed, has revealed quite a lot in the last 18 months. Of the two passages maypoled, one, now called Pearl Passage, had been entered previously. It contains some very interesting sand fills, some good helictities and at the far end a delightful nest of very small pearls ensconced in a crystal pool!

Beyond the original entry to the Upper Series (via Upit Chimney) progress has been made on all forks. Those to the left recently led into a series of tight passages and 'dome pits', whilst keeping to the right leads into August Passage. This, the first real find after the cave re-opened, was first entered by a small Exeter Univ./S.W.C.C. party and contains several promising digs, some good grottoes and at the end some very delicate brown helictites. In the same area is a grotesque rival to the Little Man of Reeds Cavern, surely Dan himself? This passage runs along the roof of Wigmore Hall and it would appear that there are numerous small tubes between the varying levels in the cave. Possibly it is through these that a way may be found around the enormous (and ancient?) chokes.

One such tube which offers excellent prospects is that of the Long or Endless Crawl to which more attention has been paid in the recent dry October. Here the draught is far stronger than in any other part of the cave and there is a strong legend of the "river" being heard here before the war.

Many other seemingly minor finds have been made including two sanitary developments. These resulted from a closer acquaintance with the siphon known as Lavatory Dan and from the penetration of a remarkable mud passage beneath Wigmore Hall, known as the Descending Colon. Details of such minor finds are to be found in the log book at H.Q. Regrettably too few finds seem to be recorded therein and this of course leads to duplication of effort.

Too many members have been responsible for the above developments to name but I think mention should be made of the efforts put in by the 5th and 6th Formers at Hinckley Grammar School who have done a great deal particularly in the surveying field. Much valuable help, apart from the provision of "talent", has also come from the cave company, to whom we 'Dan-y-ruffians' are greatly indebted.

Alan Coase.

THERE BUT FOR THE GRACE OF GOD

After every rescue I feel a twinge of conscience when I realise that I was not fully prepared when the call out came. This results in a rush to repack my rescue kit and for a short while I am ready for almost any rescue call out, but, as time passes I pilfer bits and pieces for caving trips, then when I am heading for a rescue operation instead of thinking what I should be doing I am spending time wondering what small but essential item is missing from my packs. Time is lost in feverish search for that spare tin of carbide or whistle and this is not good enough, as every minute counts.

It is no comfort to me to find that a large number of club members have no kit at all put to one side especially for rescue. The next time it may be me and I want to appeal to you all to be ready to come to my aid, please.

For example, you are having supper at Penwyllt one Saturday evening after a hard day's caving in Dan-yr-Ogof or Ffynnon Ddu. Your wet caving clothes are in a heap outside and you have just bolted all the food you have brought with you, your lamp has still to be put on charge and it is dark and raining outside. Someone rushes in to report an accident in Pant Mawr - help is urgently needed. There are only a few people at the club and the responsibility falls on YOU. You either have to wear your clean clothes or put on wet clothes and borrow a lamp, which you cannot be certain is 100% charged, from the rescue room. If you are first on the scene and the accident is a long way underground you could be 8 hours or more in the cold before you get a supply build up to provide you with food and warmth. You are now as big a problem as the person being rescued.

The same thing applies when someone calls you at 3 a.m. at your home. You spend an extra fifteen minutes collecting things together and so do the other two being picked up and forty-five minutes are wasted.

Be Prepared.

It is difficult to always have rescue kit available if you have not got your own transport. These days however most people have a car and for my sake and your sake I suggest you have the following items always in the boot.

- Pack I. Caving clothes and spare warm clothing. Lamp, helmet and boots.
- Pack II. Food for two days, some form of stove, mess tins, tin opener, knife, fork and spoon.
- Pack III. A small pack for taking underground, containing:-
 - a. Spare lamp - carbide is the best bet here as it is light and small.
 - b. Spare carbide.
 - c. Candles and matches.
 - d. Whistle.
 - e. Sling and at least two crabs.
 - f. Notebook and pencil

- g. Food - either emergency pack or sweets and chocolate.
- h. If you smoke - cigarettes or tobacco.
- i. Knife and string.
- j. Small first aid kit.

Obviously you can add to this list with experience but as the list stands it is a minimum. A tent and sleeping bag ready to be picked up are useful, as is a 120 ft. rope, digging equipment and a compass.

Remember when you are called out you may have to spend several hours on a wet, windy mountainside - do not rely on others to provide food and warmth - if you can, go prepared to provide for others but above all go prepared to be of use and not a liability.

If you go caving you are obliged to be prepared to help other cavers in trouble as they are prepared to help you.

J.C. Jones.

TIGER AVEN - OGOF FFYNNON DDU.

On July 25th Noel Christopher, Derek Holt and ourselves made our way into Waterfall Series with the object of having a close look at the Crystal Pool/Annexe/Canyon areas. The latter parts were not reached however for after examining every possible way out of Crystal Pool Chamber we made our way through a tight squeeze into a small rift chamber. This lies parallel to and north of C.P. Chamber and had been entered by one person (who?) previously. The footprints noted went only a few feet while we pressed on to a finely decorated aven. This we rapidly climbed and found its attractions to increase rather than otherwise for although the calcite is a muddy grey-brown, near the top it lightens and there are many fine curtains, erratic columns, pearls and small grottoes. The height to the top was estimated at about 50 feet and the climb was pleasantly sporting, though descending is somewhat "hairier".

At the top we were able to squeeze between a boulder and some fine gours into a well-decorated passage containing a striped curtain which is partly responsible for the name of the aven and passage. This continued for about 100' before a halt was enforced by a constriction. At the same time we became aware of a rapid increase in every source of water and we beat an extremely rapid and very wet retreat down the Aven.

A hurried dash back to Upper Flood Passage confirmed our worst fears, the route was waist deep in pounding, peat stained water. A quick consultation and we decided to make a dash for Lowe's passage. Initially progress was only moderately difficult but the added flow of water from Waterfall Series made us rope up with our waist lengths. Progress was then limited to one man moving and three clinging on. Eventually a particularly straight, smooth-sided stretch was reached where progress became impossibly dangerous so we attempted to return. Unfortunately we seemed to have reached this point at the peak of the flood and return proved equally impossible. Traversing was out of the question so we climbed up to a convenient hole and waited. A fairly rapid seeming four hours passed and we were then able to progress to the chain and had reached Roundabout Chamber when we met the rescue party - to whom our thanks and apologies.

Two weeks later the two of us returned with Neil Anderson and a lump hammer. The latter proved more useful in penetrating beyond the constriction though Neil who returned to C.P. Chamber helped us to determine the relationship of the high rift which we entered with the chamber below! Our height above the floor seemed again to be about 50' and we were able to look directly down into C.P. Chamber. Above us the rift continued for at least 30' and a ledge could be made out. We quickly examined the more obvious inlet passages but again time was running short and the major part of the rift was left unclimbed. The rift was later named Re-Resolution Rift by Bryn Thomas.

This was the object of our next trip on the following day when with Neil, Eileen Davies and John Bevans, we rigged a ladder from the rift into C.P. Chamber. 49' was required for the descent from the lower ledge but 30' more is required for a good belay. (N.B. A rawlbolt has now been fixed at the top of the pitch.) Whilst John and Tony were climbing via the original route to ladder the pitch, Neil followed Eileen through a tight bedding plane into a small but beautifully decorated chamber (E1 Chamber).

Once up the ladder we found the rift easy to chimney and quickly reached the top ledge. At one end was a small circular chamber with two passages entering from opposite sides. Each led to small chambers, one (E2 Chamber) with fair possibilities of extension and the other (Truncheon Chamber) containing fine stalagmites and pools in which the crystals are large and botryoidal.

Other passages were found at varying levels but their examination has so far been rather superficial. A traverse was also made across the rather exposed top ledge but the far side did not yield any obvious possibilities. The one large way on is in fact still higher up where the rift has narrowed to an aven. This Bill Little and Alan attempted as a straightforward climb on October 3rd, but while apparently possible, the climb is so exposed (some 100' to the floor of C.P. Chamber with a nice ledge to bounce on half-way down), the holds so crumbly and the belay points so few that the attempt was postponed until maypoles can be brought in.

N.B.

The rate at which the water made its way from the sink at Pwll Byfre is worth mentioning. Apparently the storm lasted from 2 - 3 p.m. and we first heard an increase in water flow in Tiger Passage at about 4.15 and on reaching Upper Flood Passage at 5.30 found the flow nearing its peak.

Alan Coase and Tony Iles.

RAS GWYL ODEWI

(Race on the Feast of St. David)

Road walking has died out, without a struggle we have become car bound. And yet, with a little effort, many of us may discover a new recreation which will give us a life-time's pleasure. While we in Wales have a walker's paradise of moors and mountains, in many parts of England one is confined to roads and lanes but, to my mind, road walking is very bit as good as mountain walking - only different. There are men and women in our Club who are better qualified than I to talk about walking, especially on mountains, but I will venture to record what little experience I have gained in walking in general.

However, for the distance, walk as slowly as if you did not mean to stop until you arrive. Stop and rest, by all means, and that before you are tired; nevertheless if you aim at such a pace you will arrive fresher and probably just as soon as if you had gone faster. When experienced in one's capabilities and with proper pacing one should easily manage a twenty mile walk without wanting to rest - similarly in walking up Helvellyn or Snowdon. One is often passed and re-passed two or three times, when going up a mountain, by people who hurry until tired and then rest - they are wasting the day and energy.

For rough walking and scrambling try to establish a rhythm; I am not sure what I mean by a rhythm but I know when I have attained it! I think I mean putting an equal effort into each step or pull up even if these are shorter than is possible - do not stretch or strain if two smaller holds or steps will avoid this. Make the effort continuous and not in strenuous jerks. When in form this rhythm comes naturally for road-walking; the distance to be covered is fed into the computer, the legs go into automatic, setting their own pace and, all you have to do is to sit back and steer - it's a nice feeling. Possibly, part of getting one's "second wind" in running is the attainment of a regular rhythm by the breathing muscles after the initial flurry is over. Sometimes, the breathlessness of running is alleviated by consciously establishing a rhythm of so many breaths to so many paces (on reflection, this is not quite so unphysiological as it sounds although, of course, there is the subjective element too).

Naturally dull, it was quite some time before I discovered that one should point the foot upwards in the direction of the slope and not sideways when walking up a slippery, muddy bank. When walking on a slippery, especially icy, surface lean forward and you are unlikely to slip - particularly going downhill. For walking on boulders I have, to some extent, improved a bad sense of balance by making a practice of putting my shoes on and off, including lacing, while standing on one foot.

If you are in high places with someone who fears heights, keep him moving, his fear will become worse when he stops and he could seize up, refusing to move either way. The worst time in rock climbing (if to be hauled up pitches, cursing and sobbing, is rock climbing - anyhow I call it rock climbing) is the pause for belaying at the top of the pitches.

I was once supposed to be showing two caving tigers around Striding Edge; the height would not affect them, I knew, but it would me. Nevertheless, here, I felt was my chance to impress them (for I had never impressed

them in a cave); you know, a "Naturally, I don't bring beginners here" sort of nonchalance and if we rush it, I thought, and if I keep my eyes half shut, I'll just make it. And make it we did up to halfway, although the leader progressing on all fours might have appeared a little unusual - anyway the other two were upright, you cannot have everything. But at this point, to my horror, these characters sat down and began eating sandwiches. Useless to threaten and implore - "every second counts, this peak is swept by avalanches, we've just passed a DON'T GIVE WAY sign, the monsoon is about to break" - the only one panicking was me. Just as hysteria threatened a heaven sent mist came up, the heights disappeared, the sky stopped turning over and even those two forms steadily consuming their wretched meal were obscured. Gradually the off-green drained from my cheeks, I half opened the other eye and slowly relaxed my passionate embrace around my boulder. And when eventually I rose to my knees to continue my "leading" even the feeling of friendship began to creep back! And it is a fact that height does not affect one in a mist, or, of course, underground.

Boots are heavy and, to that extent, inefficient - you will go further on the fells or on the road in light shoes. Lie on your back and raise the extended legs to the vertical and down again, slowly, first in heavy walking boots and then in shoes and you will see what I mean. I wear boots (1) for extra exercise, (2) for scrambling because of the 'commando' soles, (3) in snow, or perhaps to keep the socks dry, (4) to look important (red laces, too).

If on a long walk your footgear begins chafing stand in water until the leather is softened, to some extent also the water in the sock will act as a lubricant. Better still, half wring the water out of the sock and then rub soap into it where it chafes until it is almost stiff - this is very effective and if your footwear is anything like new or untried it is worth carrying a bit of soap in the haversack. I sometimes carry a spare pair of shoes, I think the feet appreciate a change on a really long walk. Also different shoes are unlikely to chafe in the same places. It is claimed that boots prevent "sprained" ankles; I found that I stopped getting "sprained" ankles (to which I had been prone) when I started rough walking - but in shoes. Exercise must strengthen the muscles and ligaments which guard the joint. If I do "sprain" now the discomfort is only momentary.

Road walking appeals because one gets more sense of progression perhaps than in rough walking. To my mind the walk should be an all day affair, it is then more adventurous - fifteen miles out from base with rations but no money for the return and one has a sharper sense of identification with one's surroundings and the elements. However, why analyse what one likes? Give it a trial but - long walks. And if you miss the last bus home then walk through the night; if you have not done that yet you have missed a great deal.

Especially since the advent of the car many of us take far too little exercise, possibly less than nature requires for our future health. "No time" is no excuse; a trot of a mile round the block will take less time than a cigarette. You can always run to the bus and to the post - eventually it will all add up to improve your caving endurance!

One can always find good roads or lanes for walking but, let's

face it, in the summer, many roads which were so remote and beautiful now become sleazy, petrol fumed tracks for the motorists. As if on a conveyor belt, they pass endlessly in their hot, little boxes, transistorised, conformist and constipated - what sense of identification can they feel with their surroundings? "No, I told you. Snowdon was last week, this is the Lake District". "Well, they ought to build more cafes." "We can't stop, I want to tell the whats-its-name that we did all the lakes in one day". To a large number the Lake District is just somewhere to drive; I think coach people appreciate scenery, if only part of the District could be limited to these and to local traffic and kept more or less as it was. You will not be allowed to listen to the streams or to the wind in the trees for long because one of those "Just look at me" types with a carefully amplified exhaust note (apparently one can buy specially noisy exhausts) will want to draw your attention. Anyhow why only exhaust noises as status symbols? Why not the noise of sewing machines, typewriters, toilet flushes - the lot?

However, let us try to be tolerant, maybe some of them will venture to get out and walk eventually.

To all club members

I suggest a 20 mile road race from Brecon to the Club headquarters on March 5th, 1966. Coffee and light refreshments at the Castle Hotel at 9.30 a.m. Start the race at 10.15 a.m. Car drivers will be wanted to ferry cars back to our headquarters. Ordnance survey 1 inch map, number 141.

Route: Along A40 out of Brecon.
First turning on left after passing the A470 turning to Merthyr.
Proceed along this road up over Mynydd Illtyd until it meets the B4559 at right angles.
Turn left along B4559 for $\frac{3}{4}$ mile and then turn right for Heol Senni road and follow this Heol Senni.
Go through the village of Heol Senni and over the bridge. After crossing the bridge bear right where the road divides - it doesn't divide into three as the Ordnance Survey map suggests.
Carry on along this road until it strikes the A4067 at the Cray reservoir.
Turn left along A4067, past Tafarn y Garreg and the Gwyn Arms to the lane on the left leading up, past the Y Grithig turning, to the Club headquarters.

Study the 1" O.S. map. You will cover the route in the car driving to Brecon.

No short cuts. Walk, run or limp.

May I invite all members who finish the course to dinner and drinks at the Mimosa Cafetha same evening at 7.30 p.m.? All those who ferry the cars back are also invited. I suggest one driver for every 3 or 4 walkers. I think I can arrange for dinner for more than are likely to accept but I must have the names of those contesting and drivers before the 26th February, both to arrange for the refreshments at the Castle Hotel and for dinner at Ystrad Gynlais.

Girls are, of course, particularly welcome; I have an idea they may be very good. And most welcome of all will be those who finish last - both for having the gumption to compete with poor chances and for bashing on when there is no stimulus for the lead.

All this goes against what we have discussed about 'leisurely pacing' but to hell with protocrat! This is a race, chaps, flat out.

E. Aslett.

Cambrian Cave Registry.

At a meeting held at the South Wales Caving Club headquarters on December 4th further steps were taken to set up the Cambrian Cave Registry as outlined at the Cambrian Cave Conference.

As a result of letters sent to clubs interested in caving in Wales representatives from the following clubs were present:- I.C.I. Fibres (formerly B.N.S.), Cardiff Civil Defence, Chelsea Speleological Society, University College, Cardiff, Gloucester Speleological Society, Shrewsbury Caving Club, Shropshire Mining Club, North Wales Caving Association, Royal Forest of Dean Caving Club, South Wales Caving Club.

To start the meeting W.H. Little was appointed chairman and D.W. Jenkins, Hon. Secretary and Treasurer. Area registrars were appointed together with John Hartwell as Literary Registrar and Ann Williams as Registrar of maps.

Considerable time was spent in discussing a letter sent to the Hon. Secretary from the Gloucester Speleological Society in which they wrote that they felt that it would be better for the Gloucester to act as an autonomous body creating its own registry. Fears were expressed by a representative from the G.S.S. about loss of copyright. It has since been learnt, with regret, that the Gloucester Clubs have decided to set up their own registry although at the same time it is pleasing to note that the closest co-operation is to be maintained.

The financial position was discussed and it was decided that a letter should be sent out to all interested bodies appealing for funds. It was realised that the whole project would stand or fall by the result of the financial appeal. (At the time of writing the result has been far from satisfactory - money is urgently needed. D.W.J.)

The next meeting will take place, if the weather permits, at the S.W.C.C. headquarters (many thanks) on February 19th. Then it is hoped that all the registrars will be present so that exact administrative areas can be worked out and also details of the record sheets. It is then possible for the Registry to start functioning.

D.W. Jenkins.
January 1966.

FLASH FLOODS

A number of cases have been reported of cave and mountain streams rising rapidly when the rainfall is comparatively light. One of the more recent examples is reported by Terry Moon who took a party from Swansea University to Pant Mawr. There was light rain during the Friday night and this continued on Saturday morning as the party made its way to the cave. The stream was a little higher than normal when they reached the bottom of the ladder pitch but it rose rapidly before they got to the third boulder choke. They beat a hasty retreat, expecting to find that there had been a cloud burst outside, but the weather conditions had not altered. The rain was still light but the sink to Pant Mawr was in full flood.

On two occasions when digging at Waen Fignen Felin in light rain I have seen a flood stream rise from no flow to a stream several inches deep in about 10 minutes.

At first sight the reason for this flooding seems obvious. The rain is soaked up by the soil until a saturation level is reached and then starts to run off. This means that the streams have little water in the first few hours of rain then they start to take all the water which is being precipitated.

However the ferocity of the flooding which occurs seems to warrant some further explanation. I have not made any measurements of water flows during flooding at Waen Fignen Felin but I have noticed that the flood is heavy for a short period and then slows down considerably, even though the rainfall has not altered.

This "flash flooding" could be of importance in cave rescue as it is likely that a number of peaks and troughs occur in the rate of water flow and if we can get an understanding of the mechanism it may be possible to predict when they will occur.

With this point in mind I would like to venture upon the very wildest of suggestions as to why this flash flooding takes place, but first let me make sure of the definition of flash flooding.

"During prolonged, steady rainfall there appears to be periods when streams in certain areas flood rapidly and then fall. These floods are considerably heavier than can be attributed to normal run off and are flash floods."

Flash floods could be associated with peat bogs. Peat is made up from millions of small fibres and these fibres are water repellent. This can be proved by drying out peat and then seeing how difficult it is to re-wet the fibres. Due to this water repellency the water in the peat is present as tiny globules and not as a continuous medium. This means that the water is trapped by the peat and drainage rate is very slow. However a point is reached when there is sufficient water present to overcome the water repellency and the fibres are wetted. All the globules coalesce, the water becomes a continuous medium and as soon as this happens the drainage rate increases rapidly. During drainage

a point is reached when the water repellency again takes over and the water becomes separate globules slowing down the drainage.

The important point is that the phase change points could be different in the two directions. If flooding starts at 95% water content in the peat and stops at 90%, a very large quantity of water can be released in a short period of time.

Light rain at a rate just above the drainage rate slowly brings the water content up to 95%, this causes a phase change and the water content drops rapidly to 90% giving rise to a flash flood.

The difference in bog water content of the two phases change points determines the volume of flash flood and this difference could be a function of rainfall rate. If this hypothesis has any truth I feel that the difference will be greater for light rainfall than for heavy rainfall and we will then get bigger flood variations in the light rainfall period.

J.C. Jones.

FIRE HYDRANT PASSAGE - PANT MAWR.

Tales of the extinction of acetylene lamps in this passage have persisted for a number of years, and I've had first hand experience of this a number of times.

Over the past 18 months, John Aldridge, Stuart McCreadie, Denis Clarke and myself have made several gas sampling trips to Fire Hydrant Passage, but only on the last expedition have we been satisfied with the samples collected. On this occasion Malcom Shaw accompanied me into the passage to do the sampling. Denis has analysed the samples and his results and deductions are recorded in the following article.

R. Smith.

The Mystery of Fire Hydrant Passage.

Samples of air were taken in Fire Hydrant Passage at the point where the flames of acetylene lamps tended to become readily extinguished.

Two samples were taken in stainless steel tubes which had previously been evacuated to a pressure of less than 1 m.m. of mercury. The gas samples were examined with a mass spectrograph to show the constituents and their relative quantities. The composition of the two samples and that of normal air, which is practically constant, are as follows:-

	Sample A	Sample B	Air
Oxygen	14.92	15.10	20.95
Nitrogen	83.34	83.19	78.09
Carbon Dioxide	0.73	0.70	0.03
Argon	1.0	1.02	0.93

Quantities are expressed as percentages by volume.

The outstanding difference between the samples and normal air is the reduced concentration of Oxygen and consequent increase in nitrogen. There is also a significant increase in the concentration of Carbon Dioxide, but this is insufficient to retard the combustion of acetylene. The answer to the burning question is, without doubt, the low proportion of Oxygen.

Acetylene will not burn in dry air containing less than 10% Oxygen at ordinary temperatures (20C). At lower temperatures as would prevail in a cave, a slightly higher concentration would be required as a minimum, although sufficient data to calculate the actual requirement is not available. The presence of water vapour sufficient to almost saturate the air would also retard combustion but only to a small degree. Essentially it would not be expected that an acetylene lamp would burn properly in air containing only 15% Oxygen.

The significance of the two samples is important. They were taken in stainless steel tubes which were fitted with unions enabling

them to be connected to the mass spectrograph. The tubes were evacuated some 24 hours before the samples were taken, the vacuum being held by needle valves. The sample tubes were taken into the cave and the valves opened in Fire Hydrant Passage at a point found by indications from an acetylene lamp. The sound of an inrush of air indicated that the vacuum had held. The valves were then tightly closed, and the tubes brought out of the cave. The actual gas analysis was carried out some 48 hours later.

The main difficulty in obtaining a representative sample was the leakage of the needle valves before and after sampling. Leakage beforehand would have meant that the tube was partially filled with normal air and thus the sample would have been diluted. Leakage afterwards would have allowed diffusion between the gas sample and normal air. In either case, or both, the composition would have been intermediate between cave air and normal air. The fact that both samples show similar composition supports the view that the samples taken were representative of the air in the passage.

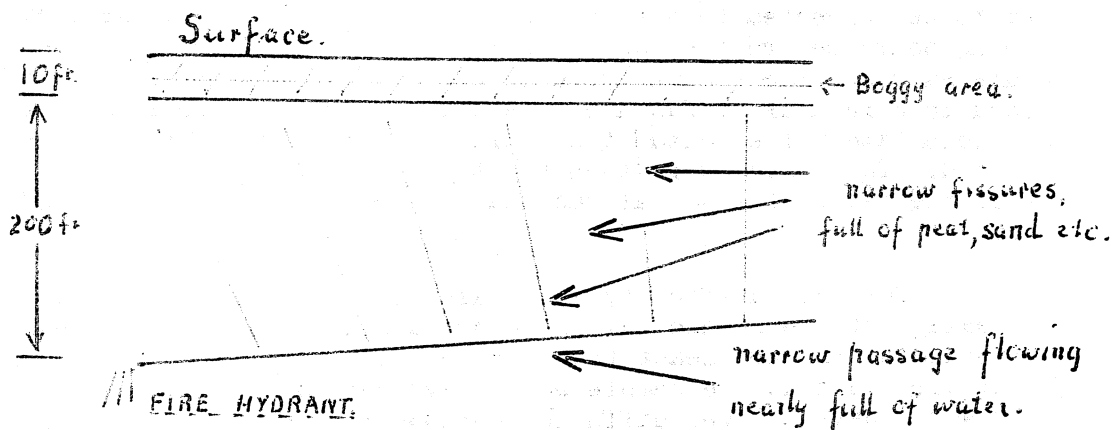
The reason for the low Oxygen concentration is open to conjecture. Various facts may help in finding a solution. Of the gases present in air, Oxygen is the more soluble in water. As a result, water devoid of dissolved air will, on exposure to air, dissolve a greater amount of Oxygen than Nitrogen, leaving the air, with which it has been in contact, comparatively reduced in this component. It can be calculated that 1.3 ml. of air free water shaken in 100 ml. of air will leave the latter with only 15% Oxygen. It is difficult to visualise how water in a cave system would loose its dissolved air however. Water lacking dissolved air is found in the lower reaches of polluted rivers from which it is removed by biological action, and in static water supplies such as bogs. The former can be ruled out, and the latter is unlikely to supply a sufficient quantity of water, though it does leave room for thought. The rate at which Oxygen is being removed from the air must be quite high. Although the air from which the samples were taken is static, or nearly so, diffusion would continually dilute this with adjoining air in the passage. Thus unless the air at this point was continually being replenished by air deficient in Oxygen, the composition would rapidly return to that of normal air.

Having shown that the air in the inner reaches of Fire Hydrant Passage is deficient in Oxygen, the field is wide open to views on the subject. Future work may support the foregoing ideas. It may be that the solution to the problem is of a chemical nature associated with cave formation. Other hypotheses should prove of interest and a challenge to the ingenuity of cavers.

D. Clarke.

Constancy of the Water Flow in Fire Hydrant Passage.

This point has been noticed by many people. The water flow appears to be the same in both winter and summer. It must be emphasised that no quantitative measurements have been made. In order to give the subject a stir after Denis Clarke's article I propose that the following may be the solution:-



In the sketch, the maximum variation of water in the bog is assumed to be 10 ft. between winter and summer. This allows a variation of the head of water between bog and the water in Fire Hydrant Passage of between 200 and 210 ft., i.e. approximately constant flow takes place.

The figures used are fictitious and only used to illustrate the point.

To support the above theory is the fact that air in Fire Hydrant Passage is deficient in Oxygen. This indicates that the water has not been flowing in free air but in a confined space perhaps. The boggy area could provide the air free water for Denis Clarke's theory to hold.

Perhaps between us we have built a house of cards. If so, who'll give it the first push?

R. Smith.

CLUB NEWS

Correspondence

Poulnagollum (Slieve Elva) Co. Clare, Ireland.

This cave is now closed to all parties. Mr. Cosgrove of Cahir Bullog will not allow any parties down the cave. While I was in Co. Clare earlier this month Mr. Cosgrove called on me to explain why he had taken this step. Mr. Cosgrove alleges:-

1. An English party consisting of three men and two women were in the area during the latter part of September. They had a black Morris Minor with some form of roof rack. This car was seen standing on the roadside on the two occasions when the damage complained of was done.
2. The party is alleged to have opened up a cave which had been closed (This must be Pollardua) and left a shaft about 30 ft. deep open. Mr. Cosgrove had to put the covering stones back.
3. On the second occasion the party is alleged to have broken down the boundary wall round the pot and to have left the gap open and a cow got in through the gap but by great good fortune did not fall down the pothole.
4. The party was later challenged by Mr. Cosgrove and he alleges that they, unlike English parties, did not own up and denied that they were responsible.

If the party can be traced then it is hoped that suitable action will be taken by them to put matters right with Mr. Cosgrove so that cavers can once more visit the longest cave system in Co. Clare.

From another source I also learnt that another English Caving party has done a grave injury to caving in Co. Clare. The party had the use of a cottage at a nominal rent. In the course of their stay the party did irreparable damage to a fine article of furniture stored in the cottage and left without saying anything. This cottage is no longer available for renting for visiting parties.

It is hoped that this information will be widely circulated.

E.K. Tratman.

Badger Hole (or not)

I have come across the following reference to a cave in the Transactions of the Cardiff Naturalists Society for 1876. I am not sufficiently acquainted with the area concerned to make a positive identification and David Jenkins thinks it might be Badger Hole, but it seems to be too far up the slope. Perhaps one of the other members can tell us where the cave can be found.

"- - - Mr. J.A.P. Price and a Mr. H.W. Davies of Brecon visited a cave near Penwyllt Station, - - - the cave being very near to

a place called Craig-y-Rhiw-Arth. The cave extends backwards about 50 ft. and then turns sharply to the right. It is situated about 30 ft. above a small stream that runs into the River Tawe."

The cave was apparently dug by Davies who found charcoal, human bones and, as Davies was in the course of obtaining permission to explore from the owner, it must just have been noticed.

Melvyn Davies.

Changes of Address.

Charles Joy, 18, Maple Road, Leytonstone, E.11.

Laura Stratton, (Now Mrs. Jeffery), Flat 8, Church Road, Upper Norwood, London, S.E. 19.

Pete. Linforth, 73, Chatsworth Mews, Elmwood Road, Wordsley, Stourbridge, Worcs.

Correction.

Alan Stevens, 65, Dan - yr - Graig, Pantmawr, Whitechurch, Cardiff.

Congratulations are offered to the following:-

Bill and Jill Birchenough on the birth of their son.

Alan and Joan Coase on the birth of their daughter.

Laura and John Jeffery on their recent marriage.

Colin Baglin and Pat Harris on their recent engagement.

We welcome the following new members to the Club.

David Judson, Glenfield House, Cradley Heath, Birmingham, 30.

Captain John Parr, Army School of Education, Wilton Park, Beaconsfield, Bucks.

Stuart Kirby, 19, South Park Crescent, Ilford, Essex.

M.M. Shaw, 5, Grangaer Terrace, Pontypridd, Glam.

Annual General Meeting.

Members are reminded that the amended Constitution as accepted at the EGM is now in force. This will be circulated before the AGM but I should like to mention the points which are relevant now.

The new subscriptions are due on March 1st. Members who are more than four months in arrears are deemed to have ceased Membership.

Nominations for the offices of President, Vice-President and Hon. Life Members, signed by two Members, must be received by the Hon. Secretary at least six weeks before the meeting, to be included in the Agenda.

Any proposal of alteration to the Constitution must be sent, in writing and signed by two Full Members to the Hon. Secretary, at least six weeks before the General Meeting called to consider it.

Hon. Secretary.

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Articles are required for the next Newsletter, so take up
. your pen and write.
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Please draw all diagrams for Newsletter in BLACK INK and
. LETTERING IN PENCIL.
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E.L. Jones, Printers, Cardigan.

