

# SOUTH WALES CAVING CLUB NEWSLETTER

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## 1. OGOR CIL-YR-YCHEN

N.G.R. 614 163 Swansea Sheet

### LOCATION.

The Cil-yr-ychen and Dinas quarries extend westwards from the main Ammanford-Llandilo road (A 483) a little north of Llandybie. One section of the Cil-yr-ychen quarry system is scheduled as a Site of Special Scientific Interest by the Nature Conservancy because it shows the Lower Limestone Shales (carboniferous) resting unconformably on the Old Red Sandstone at SN(22)616.169 ....(ref.1.) There is a brief description of OGOR-Y-DDINAS in 'The British Caver'....(ref.2.) but I believe it has now been quarried away.

### HISTORY OF CAVE.

While prospecting in the Llandybie area on Easter Monday, 23rd. April, I came across half a dozen openings which looked promising. These were investigated by Russell Sullivan and myself on 29th April, and it wasn't until 6 p.m. that we came to the last one - the wide, bedding-plane entrance to Cil-yr-ychen. After clambering up the 30 ft. grassy slope to the entrance we found a low chamber going down dip with

some passages running for about 100ft. and ending in a steep, narrowing tube. An hour sufficed for a poke into all the odd corners and we started to emerge feeling somewhat disappointed, then Russell noticed a vague blackness behind fallen slabs on one side and immediately a cool draught became apparent as we approached. Thirty minutes work cleared a space large enough for Russell to squeeze through and he disappeared for some 5 minutes. He returned with a description of a couple of hundred feet of passage: walking height and getting bigger.

We went outside to fill up with carbide and within another 2 hours had reached the end of the main passage about 1,800ft. from the entrance.

#### DESCRIPTION

This was written before surveying and distances quoted are pure guesswork. The entrance chamber may be entered at two or three places through the bedding-plane opening, the way on is then through a small pile of slabs on the right and the cave appears to run westwards. At several places there are dense collections of straw stalactites, but there are no large scale formations. Pieces of broken stalagmite are in evidence everywhere and the stumps on floor and roof are suggestive of cataclysmic flooding. Remnants of calcite on the roof show marked re-solution.

Four hundred feet in a side passage dropping steeply to the left leads to a stream-way called "Mud Stal. Passage" about 300ft. long and the same stream-way is seen again for 100 ft. by crawling into a little off-shoot. At 700 ft. a large junction is reached, on the scale of chamber-junctions in Agen Allwedd. Disappointingly the right hand route closes down to the crawls of "Swiss Passage" and only amounts to some 200 ft. A roof climb at the junction leads to the 50 ft. "3-Column Passage" and a small off-shoot leading downwards on the left leads to the 50 ft. "Rocket Passage" (named after a 2 ft. stal. column part of which has suffered re-solution into the shape of a futuristic rocket).

From the large junction the main passage leads to a pool 10 ft. in diameter and at least 3 ft. deep traversable on its left bank. It is fed by a roof drip useful to carbide users.

At 900 ft. comes the pothole, with its walls heavily calcited. A 30 ft. rope is required here and the descent leads to another stream-passage only 50 ft. long due to two boulder chokes.

Above the pothole the way on in the main passage is up an awkward stalagmite slope, where 10 ft. of rope is handy, and the passage then continues with a height of 10 to 20 ft. to a clay choke at the end. A very small stream comes in from a hole in the left wall in the terminal chamber.

"Mud Stal. Passage" contained a small black band in a sand and

gravel deposit and this has been sampled by Mr. E. Evans, Assistant Keeper of Geology at the National Museum of Wales. It may be similar to the larger band found in Blackrock quarry cave (or OGOF CRAIG DDU) by B.N.S. members and identified by the Museum as coal.

Large areas of drip formations in the clay, and small stalagmites have been taped off at three sites.

Entry is controlled very strictly by the General Manager of the quarries since blasting is now taking place in the upper quarry which appears to lie immediately above the further reaches of the cave; a bulldozer shifting loose rock could be heard quite clearly near the main junction on one occasion. The cave air temperature was  $51^{\circ}\text{F}$ . when the outside shade temperature was  $65.3^{\circ}\text{F}$ .

#### REFERENCES.

- (1) Q.J.G.S. Vol.83 pp.64-65.
- (2) British Caver, Vol.28, 1957.

Melvyn Davies.

## 2. GYPSUM IN SOUTH WALES CAVES

Gypsum is a hydrated calcium sulphate,  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ , which crystallises with monoclinic symmetry (s.g. 2.3, Hardness 1.5 - 2, i.e. the gypsum may be scratched by the fingernail). The crystallized form of gypsum is called selenite.

Selenite crystals and flowers are found in two main localities confined to the North Crop. i.e. Aged Allwedd and the Rawl Series of Ogof Ffynnon Ddu. Common features in both localities are the essential dryness of the series and the large amounts of mud and sand present.

Hitherto two main theories have been postulated for the origin of the gypsum:-

1. Decomposition of pyrite,  $\text{FeS}_2$ , an iron sulphide by oxidation, with the formation of the sulphate radical ( $\text{SO}_4^{=}$ ). This then reacts with limestone ( $\text{CaCO}_3$ ) to form gypsum.

Pyrite was originally thought to occur mainly in the shales but there are considerable amounts of disseminated pyrite in the limestones of the North Crop and this could amply account for the relatively small amount of gypsum present in the caves.

2. In the case of the Llangattwg caves the succession directly above the oölite in which the caves are found, contains bands of gypsiferous marl. It is not known whether the gypsum is an original component or whether it has formed in situ due to chemical reactions of the type shown above, or indeed whether it has migrated to its present position from other parts of the limestone.

The occurrence of the gypsum formations in Agen Allwedd has been discussed by David Leitch in the C.R.G. publication No.10. He distinguishes three types:-

a. "Asparagus", a brown needle like growth  $\leq 6$ " in length with compact hexagonal cross-section formed by twinning, usually orientated with the long axis sub-normal to the mud surface. The "asparagus" is generally confined to areas in which are found abundant fallen blocks, (the roof is composed of gypsiferous marl in most places in Agen Allwedd) although they do not in all cases grow from the blocks.

b. Irregular transparent crystals buried in, or lying on, the clay. These are often found associated with the "asparagus". At one time well formed single crystals of this type, up to 8" long could be seen.

c. Wall type - a series of selenite plates covering walls and in many cases giving a glassy veneer over a layer of haematite  $\text{Fe}_2\text{O}_3$ .

In Ogor Ffynnon Ddu, the types found, in addition to b. and c. above, are:-

d. Flowers - aggregates of selenite crystals growing downwards from a roof and curving away from the central part. These formations are very abundant in Ogor Ffynnon Ddu but are very rare in Agen Allwedd.

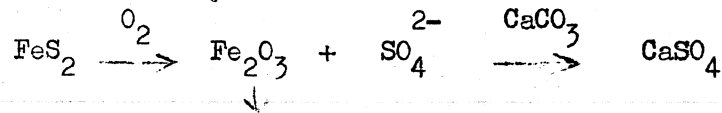
e. Very regular conical arrowhead crystals, usually found projecting from the mud with the apex of the cone distant from the mud surface. (Compare a. above, where the cone apex formed by twinning may be in contact with the mud.

f. Stalactites of gypsum and compound stalactites of calcite and gypsum. Where compound stalactites are seen the gypsum is usually found to be coating the calcite. This presumably indicates that conditions favourable to the growth or deposition of gypsum followed on those for calcite. The change possibly resulting on a lack of water in the series.

These gypsum formations can be divided into two main groups:-

1. The wall and roof formations, flowers etc., which appear to have crystallized by evaporation of gypsiferous solutions in air. Huff (1940) "grew" sodium thiosulphate flowers by evaporation of a saturated hypo solution through the pores of an unglazed porcelain plate. These formations showed a remarkable similarity to the naturally occurring gypsum flowers. In all cases the gypsum is associated and usually glazes a thin deposit of haematite, which covers the sub-jacent rock.

The intimate association of gypsum and haematite leads one to the conclusion that they are genetically related and probably formed as a result of the oxidation of pyrite ( $\text{FeS}_2$ ) with the reaction of the sulphate radical thereby formed with limestone.



There is a possibility that sulphur oxidising bacteria are of importance in this reaction.

2. Floor crystals - these differ from the above in that they are usually larger and better formed, are not obviously associated with a ferruginous deposit and are found on the surface of dried and dry clay fill which was originally laid down under water. This is indicated by the laminated nature of the muds.

And now for some science.

Consider the interface between a crystal phase and a liquid. It can be shown, by a thermodynamic argument, that the smaller the radius of curvature of the surface bounding a phase, the greater will be the pressure inside that phase. Since the chemical potential of any component of a phase depends on the pressure inside that phase, the chemical potentials will vary as the radius changes. Consequently small grains of a solid are unstable with respect to larger ones and a small grain will be more soluble in a given solvent at a given temperature than a larger one. This can be verified by experiment. A very small crystal in the process of growth will have a higher potential than a larger grain and will remain in equilibrium with a solution only if this is super-saturated with respect to larger grains. Thus crystallization may begin only if particles of sufficient size are present, and if these do not form spontaneously by statistical fluctuations, seeds or germs may have to be added from an external source. This may explain the occurrence of large selenite crystals growing from fallen blocks of marl etc. The role of surface tension (surface energy) in crystal growth has been excellently discussed by Verhoogen (1948). Harrison in Leitch (1960) has invoked sulphur oxidizing bacterial action to promote the oxidation of pyrite to sulphate with subsequent reaction to give gypsum as outlined above. The suggested reactions however assume the pyrite to be present in the clay, but there is unlikely to

be a sufficient quantity to account for the relatively large amounts of gypsum present.

The clay can however be regarded as a sediment containing a large quantity of pore fluid as water (up to 50% by weight in some clays). This picture can be further simplified by regarding the clay to be a system containing a solvent, (in this case water) with several minerals in contact with it. The only mineral which concerns us is gypsum, since the other minerals likely to be present are the various clay minerals, quartz, feldspars, calcite and iron ores etc., which, with the possible exception of calcite, are relatively insoluble in water under the physical conditions considered.

Evaporation will be rapid, and consequently crystal growth will be faster, at the surface of the clay, which, although to all intents and purposes behaves as a solid, nevertheless contains a pore fluid. At the surface therefore, small crystals of gypsum will be formed which will be in contact with each other and with gypsiferous solutions in the lower regions of the clay through the medium of the pore fluid. As seen above, large crystals will grow at the expense of small crystals in a saturated solution (this can be experimentally verified quite easily with such common substances as copper sulphate or washing soda) and also there will be a continual adjustment of the composition of the surface pore fluid as more and more material is removed from the solution. Large crystals will grow at the surface and will appear to have grown in a solid environment as indicated by parching and uplifting of the surface layers.

That the residual waters in the drying series were gypsiferous is indicated in shallow depression in the clay fill, where a rim of gypsum is often seen to lie at a constant level around the depression.

To sum up:- it is concluded that there are two environments for the occurrence of gypsum. The first is related to direct stalactitic growth and crystal growth from ceilings and walls, by processes akin to secretion. The second is a growth of crystals from solution (or a solution contained in the pores of a clay or sandy mud) and this explanation is adapted for the large crystals which have deformed the surface mud layers in Agen Allwedd and Ogof Ffynnon Ddu.

#### REFERENCES.

- HUFF (1940) British Caving P.68.  
LEITCH, D. (1960) Ogof Agen Allwedd etc., Publication No.10 C.R.G.  
VERHOEVEN, J. (1948) Geological significance of surface tension;  
Journal of Geology, Vol.56, pp.210-217.

Keith Ball.

### 3. DOWN FURTHER AT OGOFF FFYNNON, YSTRADFELLTE

Ogoff Ffynnon is the cave situated at the far end of the third in a line of swallow holes about half a mile south-east of Porth yr Ogoff, and found in 1947 by E.A. Glennie. The cave is best reached by continuing up the road from Porth yr Ogoff towards Penderyn as far as the first left hand bend, crossing the fence and then heading south-east at a little distance from the grit outcrop at the top of the wall. The first swallow hole reached contains Ogoff Coeden Prop.

Just a word of warning - the same word of warning which appears with all articles on this cave. Like all the holes in the vicinity, it contains large numbers of loose boulders and great care is needed in finding the way through them, particularly in the vertical bits.

A short scramble down the boulders at the entrance leads to the small spring which gives the cave its name, then a left turn into a walkable, level passage about seventy feet long. Then a climb down through some loose boulders at the end leads to a narrow opening where a short length of ladder is useful as footholds on the other side are tending to peel off. The way on is then right, along a passage which gradually closes down till it is only a matter of inches high, but leads into quite a large chamber some sixty feet long by fifteen wide and about twelve high.

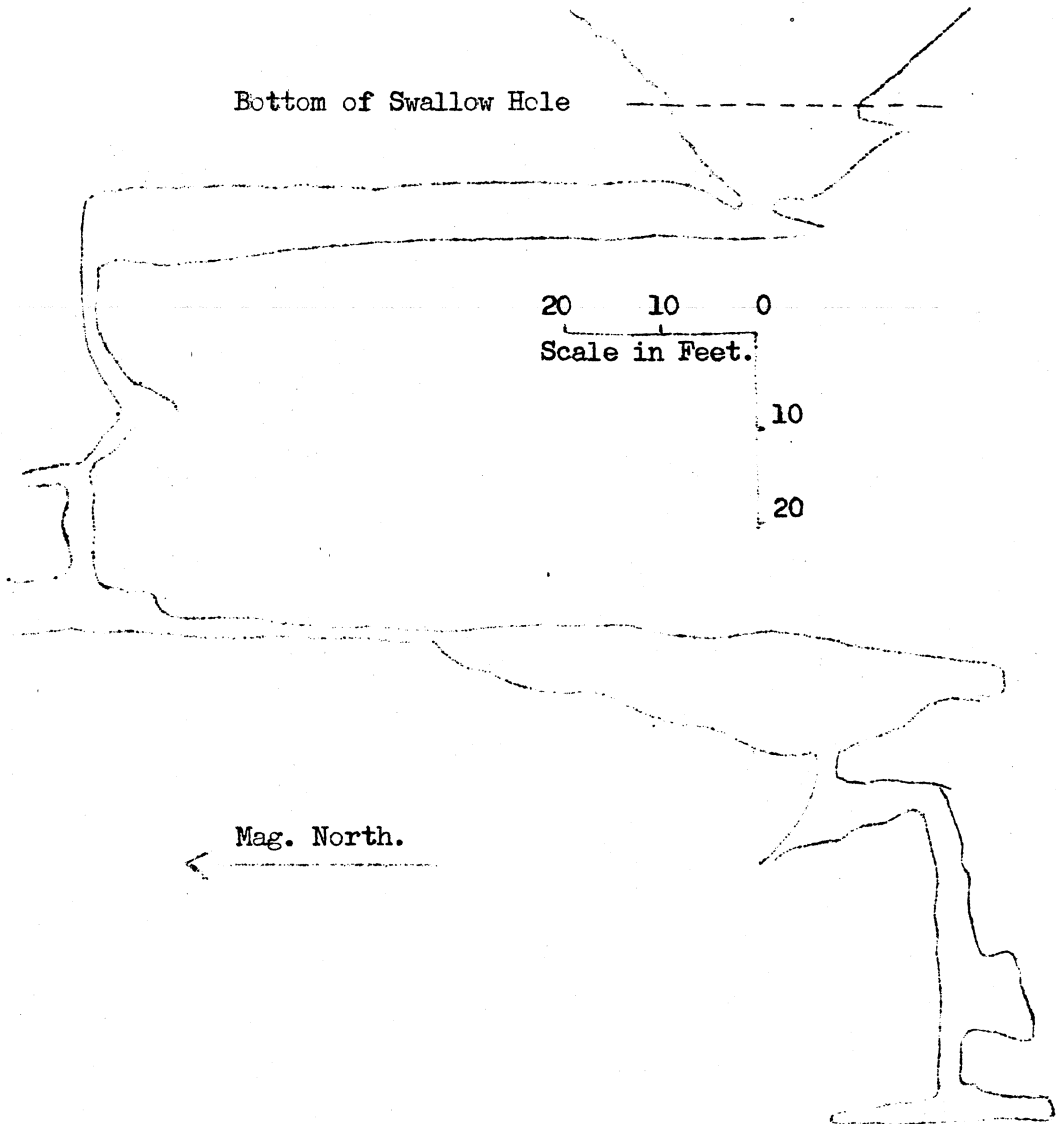
That was more or less as far as things went when David Coombes and I went there a little while back. From the large chamber we wriggled through some holes in the floor into a bit of space beneath but couldn't find a way on until we had cleared some boulders from a dark hole at the back. A vertical bit then which was a bit wet led to a sloping bit ending overlooking another chamber. The climb down into it gave a bit of trouble as it also suffers from "peeling" troubles. A hole in the floor of this final chamber led us to where the water sinks. This is probably the best place to dig in the cave.

The stream present at the entrance flows through the main chamber, accompanies one down the climb into the next one and finally disappears into the boulders at the bottom.

Bill Harris.

OGOF FFYNNON, YSTRADFELLTE

Vertical Section - Grade 3



Bottom of Swallow Hole

20 10 0  
Scale in Feet.

10

20

Mag. North.





#### 4. TOOTH CAVE GOWER

One Sunday at the beginning of the summer, an optimistic crowd consisting of Maggie and Bill Harris, Bill Clarke, John Harvey and myself, tripped through the entrance system of Tooth Cave and eventually arrived at the main stream passage.

After Bill Clarke, using just a dry suit, had made an unsuccessful attempt to force the top, west, sump, we turned our attention to the aven about 1,000ft. further down the passage.

The entrance to the aven was very narrow and had been passed only once before. However, after a little time spent in wildly hammering some very stubborn blocks of limestone, it was made big enough to allow all the party to enter.

The aven is about 60 ft. long and 15 ft. wide at its widest point. The roof is about 40 ft. above the floor of the stream passage. One enters at the centre of the oozing, glutinous mud floor which slopes sharply upwards in both directions.

The possibility of there being any extension to this aven was unlikely, but our wiley friend, Mr. Clarke, noticed on inspection a small opening high up on a wall at the extreme end of the chamber. By clambering up and sliding down for a time between the mud tapestried walls, he eventually elevated himself to the opening. This required a slight modification before he could enter, which was carried out by means of a tyre lever that happened to be at hand.

The opening led into a fairly spacious chamber the floor of which was cleaved by a 20ft. long slot, wide enough to permit easy entry. The boulder filled bottom lay about 30ft. below. Subsequent inspection has revealed the beginning of a low tunnel which would probably join with the main passage not far distant. It is difficult to gauge the length of the only passage leading on from this chamber, but I would say, at a crouching step, it is perhaps 200ft. To our disappointment the passage, which indeed appeared very promising to us when we considered its height above the stream passage(it was thus free from water), ended in a small chamber with a miniature lake for a floor. There was one very inviting looking passage, leading, it appeared, out of the chamber, but this was filled with nice clean water by the pool. Shrewd observation by Mr. Clarke revealed the fact the the pool must dry up at some times to allow the production of the mud-drip formations which cover its bottom. A recent trip to the pool has proved this theory to be correct, but unfortunately the underwater passage only extended for about 4ft. and was then filled with mud. This proved to be the rule governing several possibilities in this extension passage.

There is one other possibility in the form of a boulder choke above the small opening from the aven. This has recently received

our attention, but more work is required on this promising dig before access may be gained to the vast system which must surely lie beyond.

Roy Morgan.

#### 5. A.G.M. 1962. HON. TREASURER'S REPORT.

Welcome to this my 6th Edition of This is Your Money.

I find it difficult to say anything new about the Club Accounts. It's rather like the young man on his first visit to the Middle East: on being pushed into a harem "I know what to do but I don't know where to start".

We'll start with the Statement of Income and Expenditure. The overall cost of running the Headquarters shows an increase of about 40% on our previous year's workings but this is almost entirely due to the commencement of our liability for rates. The other items making up the total show little or no change with the exception of the electricity bill which has risen by over £8. This increase seemed to be related to one particular quarterly period which coincided with the experiments in drying room technique, originally in the hands of our electrical experts but now seemingly taken over by our rocket and projectile division. I must admit that on receiving this one hefty bill I wondered if it would be cheaper to provide everyone with a new set of overalls rather than dry their old ones. This is, of course, not a serious criticism of those who have given a lot of time and thought to this difficult drying room problem.

On the Income side, our H.Q. Fees have once again exceeded all previous totals and this year bring us in even £50 more than last year. The number of bed/nights has risen from 1,463 to 1,944 and this latter total shows that whereas members enjoy about 67% of these nights the percentage attributable to guests is rising. As you will see, the Headquarters are paying their way as predicted last year.

Expenditure under the heading of General Expenses shows an increase of just over £80. This is largely due to the increased amount spent on Club Tackle, with which the Rt.Hon. Member for Aberporth will deal in his Tackle Officer's Report(see N/L No.40.). The full year's telephone charge comes in for the first time and you will see that this is offset to some degree by the £8 worth of coppers extracted from the

box during the year. The item, work on Cave Entrances, covers the contribution towards the cost of gating Agen Allwedd and similar protective work on Tooth Cave where the archaeological finds have been of such importance. The General Expenses are completely covered by the income from Subscriptions, Donations and other small items as shown.

The gross surplus is carried down into the Net Revenue Account where further items of income and expenditure are brought into account. During the course of our conflict with the Valuation Authorities, we have been setting aside in reserve, amounts equal to the original rating assessment on the property. Now that the dispute has been finalised the reserve is brought back into account and the rates due for the rating periods prior to the year are met from this figure. The difference represents the gains our fight has produced to date. Trying to condense two years legal cut-and-thrust into a few sentences is a difficult task. Under an Act of 1843 (to be repealed in 1963) certain ill-defined societies were offered complete exemption from rates. The numerous disputes which have arisen since that date as to who is entitled to relief and who isn't have produced some of the most complex case law it has been my misfortune to meet. Most cases have only achieved finality by going to the House of Lords. The stages through which the cases pass before that final stage become measurably more costly, win or lose, and where small societies such as ourselves are concerned it is really a matter of how much it is worth to establish a principle. In meetings at Somerset House with the Inland Revenue Barristers it was clear to me that despite the trifling sum (to them) at stake, the case was being fought as a test case to settle the lot of countless small societies which form borderline cases in the interpretation of the Act. My attempts to have our case decided by a one-stage arbitration tribunal, for which provision exists, were resisted. The Valuation Authority similarly refused to make any contribution to the Club's possible legal costs.

The Committee was finally faced with a problem, which, reduced to terms of hard cash, appeared to give the following choices. WITHDRAW NOW - No costs. Rates totalling approx. £200 to be paid. PRESS ON - If we win .. Costs say £50. No rates to be paid. If we lose .. Costs stage 1 & 2 say £375 plus rates £200 still to be paid. Reluctantly, the Committee decided not to proceed with the case. The risk of incurring heavy costs (which we could not afford to bear) if a decision at any one stage went against us, was too great to take. Following our withdrawal from the case, negotiations with the Valuation Authority secured a reduction in the rating assessment and applications to the two rating authorities for what is known as Section 8 Relief brought us 50% relief from Ystradgynlais and 33% from Brecon. We are most grateful to those authorities for their help in granting this aid.

Item 2 on the account represents the setting aside from our general balance of a sum of £100 towards a Repairs Fund for the Headquarters.

The next item, Yugoslavia Expedition £35 is, for constitutional reasons, not what it might appear to be. You will all doubtless recall that last year, following the epic dig rescue at Glynccorwg, Bill Little handed over to the Club over £300 which had been received by him personally from donors all over the country. The Committee, on your behalf, felt that the Club's appreciation should be expressed to Bill in some tangible form but by the close of the financial year nothing suitable had been thought of. We considered many items to present to Bill - a writing desk, some sort of pet (but she wasn't willing) until we eventually learned of Bill's strong wish to go on the Club's Yugoslavian Expedition. To make this possible, the Committee subsidised Bill's presence on the trip. It was thought too that since others going were a pretty rough lot, Bill's restraining influence would do nothing ..... but add to the prestige of the Club party.

Overleaf are the much reduced transactions of the New H.Q. Development Fund. The original object of showing these expenses separately was to give those members who had donated so generously to the Fund the details of how their money had been spent. Now that the Fund has virtually been exhausted, it is not proposed to continue this separate record and the small balance on the Fund has been transferred to the Main Account.

The Balance Sheet shows the continued improvement in our financial position. The only item I wish to mention is the figure of H.Q. fees Outstanding. This is quite a reduction on last year's figure and the credit for this is clearly due to the very great co-operation of all members staying at the H.Q., both in promptly paying over their own Fees and in addition collecting Fees from Guests and visiting Clubs. I am personally very grateful for this help.

Looking to the future, it is evident that we are in a sound financial position. Expenditure can be maintained at a high rate next year by running down the Revenue Balances. Provided reserves exist for H.Q. repairs and other contingencies, there is little point in maintaining large cash balances when caving needs so much money spending on it. I have again recommended that H.Q. Fees and Subscriptions remain at the present rate. (Frenzied Applause).

I have been amazed once again, Mr. Chairman, that you Sir, my fellow officers and Committee colleagues have continued to provide their wholehearted support and encouragement and have succeeded once again in making my job very much more pleasant and rewarding.

To members generally, thanks, particularly for your money.

Les. Hawes.  
Hon. Treasurer.

6. CAVE SCIENCE  
An Appeal For Information.

The Committee of the Club has decided to set up a Scientific Sub-committee, the main functions of which will be to foster and co-ordinate all aspects of scientific work on caves which may be carried out in the area. The present members of the Sub-committee are David Cons, David Jenkins, Bill Little, Lewis Railton, and Derrick Webley with myself acting as chairman.

As a first move we have decided to appeal for information, and this is the purpose of the present note in the Newsletter. We should in particular like to know about:-

a. Any work of a scientific nature concerning caves or associated features which members may be carrying out at present or proposing to start in the reasonably near future. Details should also be included of any assistance which may be desired in the way of equipment or manpower and which it may be possible for the Sub-committee to organise.

b. Any member who would like to undertake, or assist in, scientific work involving caves and what sort of work he or she would like to do. It would also be useful to know of any particular experience or aptitude which such a person may have, but this should not put anyone off from offering his services, provided he is keen to help.

The sort of project which it is hoped to undertake will depend on the interests and abilities of those answering this appeal, but the Sub-committee has a number of possibilities in mind. For instance it might be possible to undertake a study, involving detailed survey work, of the relationship between surface features (swallets, shakeholes etc.) and known caves lying beneath them. Such a study should produce interesting results and might provide helpful pointers in the search for new caves. Further developments along these lines might involve the use of geophysical methods if we can enlist the aid of suitable experts and their equipment

Any replies to this appeal will be gratefully received (it may take some time to sort them out and act upon them) and should be sent to me addressed as follows:-

Dr. G.T. Jefferson,  
Dept. of Zoology,  
University College,  
Cathays Park,  
Cardiff.

Other things which the sub-committee hope to undertake include the provision of essential equipment, and advice where necessary, for

those who wish to collect biological material in caves. Such material would, of course, continue to be identified and recorded through the Cave Research Group. It is also proposed to compile a list of scientific experts who can be consulted when necessary. Meanwhile would all budding (or established) cave scientists whatever their interests, please let us have the information we want as set out above.

G.T. Jefferson.

## 7. CLUB NEWS.

### HONORARY MEMBERS.

We must apologise to Dr. North for omitting his name from the list of Hon. Members published in the last Newsletter.

### NEW MEMBERS.

We welcome the following new members:-

John and Rita Squire, 3, Swanborough Corner, Highworth, Wilts.  
Carol E. Thomas, Thistle House, Abercrave, Swansea.

### O.F.D. LEADER'S LIST

John Osborne is now an O.F.D. Leader.

### CHANGE OF ADDRESS

N.L. Paddock, Enville Mount, Enville Road, Bowden, Altrincham,  
Cheshire.

Neil Jones, Half Way House, Bridgenorth, Salop.

### VISITING CLUBS.

Nov.9-11th. party of 30 - London Cave-rescue Group: practice in Pant Mawr (including members of Westminster Speleological Group, Mendip Caving Group and Chelsea Speleological Society.

Hon. Secretary .....C.L. Jones, Llandough Castle, Nr.Cowbridge Glam.  
Hon. Treasurer .....L.A. Hawes, Cribarth, Court Moor Avenue, Fleet, Hants.  
Hon. Editor .....B. de Graaf, Neuadd, Llangorse, Breconshire.  
Hon. Records Officer...D.W. Jenkins, Dinmore, Dyffryn Road, Llandrindod Wells, Rads.  
Hon. Cave Rescue  
Organiser....G.L. Clissold, Silhouette, Staunton, Nr.Coleford, Gloucs.

SOUTH WALES CAVING CLUB

Library List:

Supplement No.2.

Those marked \* require £1 Deposit.

- \*The British Caver. Vol.36.  
Axbridge Caving Group and Archaeological Newsletter. May - September.
- \*British Nylon Spinners Cuttings from 'Signpost'.  
Cave and Crag Club Newsletter 1962 Nos.1,2,3.
- \*Cave Research Group. Newsletter No.84.
- \*Cave Research Group Occ. Paper. No.7. Some Cave Accidents Statistics  
by David E. Leitch.
- Chelsea Speleological Newsletters Vol.4. Nos.7-10.
- \*N.S.S. Newsletters. Vol.20 Nos.4-7
- \*Bulletin of N.S.S. Vol.24. Pts.1 and 2.
- \*Abstract. The Aragonites- Calcite Problem by Rane L.Curl.  
Gloucester Speleological Society. The Journal. Vol.2. No.1.
- Shepton Mallet Caving Club. Series 3. Journal No.3.
- South Wales Caving Club. Newsletter No.40.
- Wessex Cave Club. Newsletters Nos.85 and 86.
- Westminster Speleological Society. Newsletters May, June, July and September.

D.W. Jenkins.  
Hon. Records Officer.

