Friends of Killhope

President: Sir Kingsley Dunham, F.R.S.

MAY 1987

NEWSLETTER No. 8

Already yet another new season is upon us and I make my annual plea to all members to visit Killhope with some friends to see the latest developments on the site. Obviously the Friends' event days would be the best times to meet other members for a chat and perhaps exchange a few words with visitors. Members of the public invariably are interested especially if one is engaged upon work on site and this all helps to make the paying customers feel welcome.

Brian Short's interesting article will nevertheless rekindle an uncomfortable feeling of regret in many of us. How easy it is to put interesting, even important documents or relics from the past in a 'safe place' only to discover too late that they have been the victims of some well meaning domestic purge or misunderstanding. Similarly, it is easy to promise oneself to photograph or survey some feature or site at a future date 'safe' in the knowledge that it will be there for ever, only to find that the years and vandals do take their toll. In this case I suppose the moral is to make time to do the work now before it is too late.

ANNUAL GENERAL MEETING & BRAINS TRUST

Our second A.G.M. will be held in the King's Arms Hotel, in St. Johns Chapel on Wednesday 10th June at 7.30 p.m. After the formal business is concluded there will be a Brains Trust with Sir Kingsley Dunham and Mr. J.R. Foster-Smith. This will be a unique opportunity for Friends to question these leading authorities on our subject. Some artefacts will be on display, and you are invited to bring along your own items of interest to add to what will undoubtedly be another very pleasant evening. Friends are reminded that nominations for the position of all Officers and one Committee Member should be forwarded to the Secretary, Mrs. D. Chambers, 18 Cheveley Walk, Belmont, Durham DH1 2AU, not less than fourteen days before the meeting.

The A.G.M. is your opportunity to influence the running of your organisation. Do please try to attend.

ANNUAL SUBSCRIPTIONS

Subscriptions became due on 1st April. Please renew these as quickly as possible anddo give some thought to covenanting which would greatly increase our income.

(B. Chambers, Newsletter Editor, 18 Cheveley Walk, Belmont, Durham DH1 2AU)
Please note new telephone number 091 3868491

THE DALES PONY

Killhope's own dales pony, Bobby, is back on site after his winter holiday and will no doubt prove as popular as ever with the visitors. The following lines were written at least fifty years ago, but could still be sub-titled: In praise of Bobby! (I understand, however, he is not too fond of being yoked into cart or trap.)

Bring me out my black dale's pony,
Put a saddle on his back,
There's more value for your money
Than in Clydesdale, Barb, or Hack.

Talk of Welsh or Exmoor pony
Shetland, Iceland or what other
Put me on my doughty crony
For to me he's like a brother

Not so big as ponderous Shire,
Not so soft as Suffolk horse,
In him what I most admire
Is his mettle, but of course

Look upon his noble forehead
Note his flashing, rolling eye
Mark his flanks so strongly knitted
Scan his flattened shins forbye

See the bony feathered fetlock
And his stout and ample chest
When I laud, it should not shock
If I say he's of the best

Put him into any harness
Yoke him into cart or trap
Mount him, ride to any farness
You'll be proud of this fine chap

He has blood and he has wild fire
Yet as quiet as a lamb
A Spanish entire was his sire
And mare of Galloway his dam

What d'ye expect of such a creature
What can but such blood avail
There is every solid feature
In this breed of old Weardale.

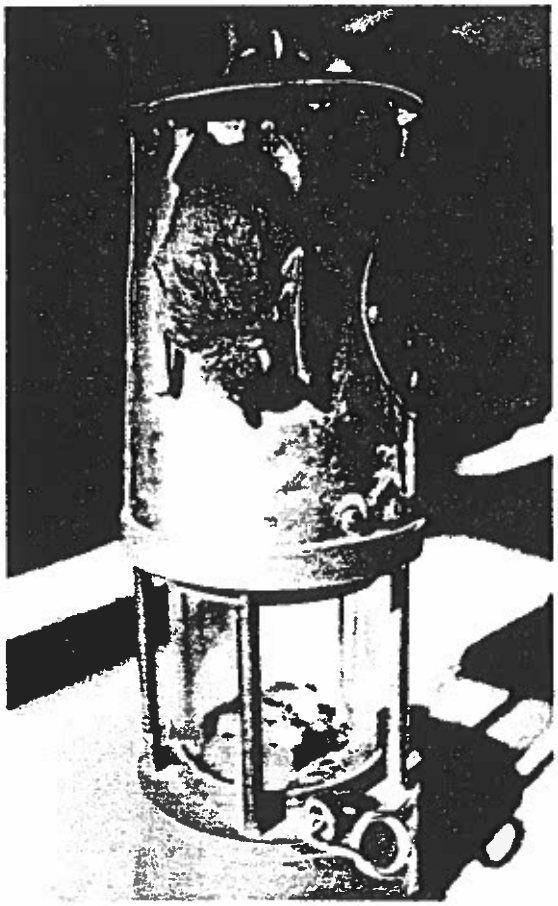
We welcome the following article from Noel Jackson of the Durham Bat Group which not only increases our knowledge of the mines which are the focus of our interest but also will help us to avoid accidental harm to these fascinating (and protected) creatures. The list of do's and don'ts in the article should be added to our Code of Practice published in a recent Newsletter. As a matter of interest a pipistrelle bat was sighted flying near the trees at Killhope two seasons ago.

BATS IN MINES

NOEL JACKSON Durham Bat Group

Forget about belfries, they are far too noisy, draughty and dirty. Bats need a warm roost in the summer in order to breed, and this generally means a hollow tree, a loft or the space between the soffit and barge boards of somebody's house. Their winter requirements are rather different. In order to hibernate successfully, they need a high humidity and stable, low temperature that never falls below 0°C. Caves and mines fill these needs admirably.

Most, but not all, the 15 species of British bat will hibernate underground. The pipistrelle, which is the commonest bat both in County Durham and in Britain as a whole, winters in sites like the cavity walls of modern houses. So any bats that you find in a mine are bound to be interesting.



MINING BAT

This pipistrelle was found 1800 feet underground in the Vane Tempest Colliery. Pipistrelles are one of the few species of British bat that do not hibernate in caves. This bat was probably sucked into the mines through the ventilators.

PHOTO: Media matters

Not all caves and mines are suitable for bats. Some are too dry, some are too wet, some are too draughty and yet others are too dirty. The bats are very fussy about where they hibernate, but there again, it is a matter of life and death, so their caution is understandable. High humidity is essential because the bats' wings are delicate membranes. If they dry out during hibernation, they will tear when the bat tries to fly when it wakes. Sometimes the hibernation sites are so moist that the bats are covered with tiny drops of condensation. But one can have too much of a good thing; we have never found bats in any mines that have water running down the walls.

NEVER SEEN A BAT UNDERGROUND?

Most people have never seen a bat, and this includes people who make frequent excursions underground. There are several reasons for this.

- Bats use mines mainly for hibernation between November and March, precisely the times when sane folk stay by their firesides.
- Bats are very small. Even Natterer's bat, the largest species you are likely to find in a Durham mine, is less than 2 inches long.
- Bats in Durham use individual hibernation sites in small numbers; we think that bats from several hibernacula come together to make up the breeding roosts.
- Bats hibernate in cracks. You do find the occasional bat hanging on the wall of a mine, but most hide in cracks and fissures. They are awfully difficult to find, even when one goes looking for them specially, so the chances of finding one by accident are rather remote.

Bats lay down fat reserves in autumn to see them through the winter and they drop their body temperature in order reduce their energy requirements. If the bat is disturbed, it has to use stored fat to bring its temperature back to normal, so it can react to the disturbance. The danger is that this will not leave it enough fat to last the rest of the winter.

HOW TO AVOID WAKING A HIBERNATING BAT

DON'T TOUCH If you touch a hibernating bat it will wake up and will be unlikely to survive the winter.

DON'T FLASH Bats hibernate in dark places and even torch light will wake them up. Flash guns are evn worse and they have been known to make bat colonies desert some hibernacula for ever.

DON'T WARM The heat from your body is sufficient to warm up hibernating bats, raising their metabolic rate and using up fat reserves that they can't afford to lose.

DON'T SMOKE Bats are efficient smoke detectors. If they smell burning, they wake up in order to try and escape from the blaze. We all know that cigarettes are a health risk to humans; they can be deadly to bats.

DON'T SHOUT Just like humans, bats can be roused from their slumbers by loud noises.

***REMEMBER** - not only is it unkind to disturb a hibernating bat, it is also illegal.*

WHERE DO BATS HIBERNATE?

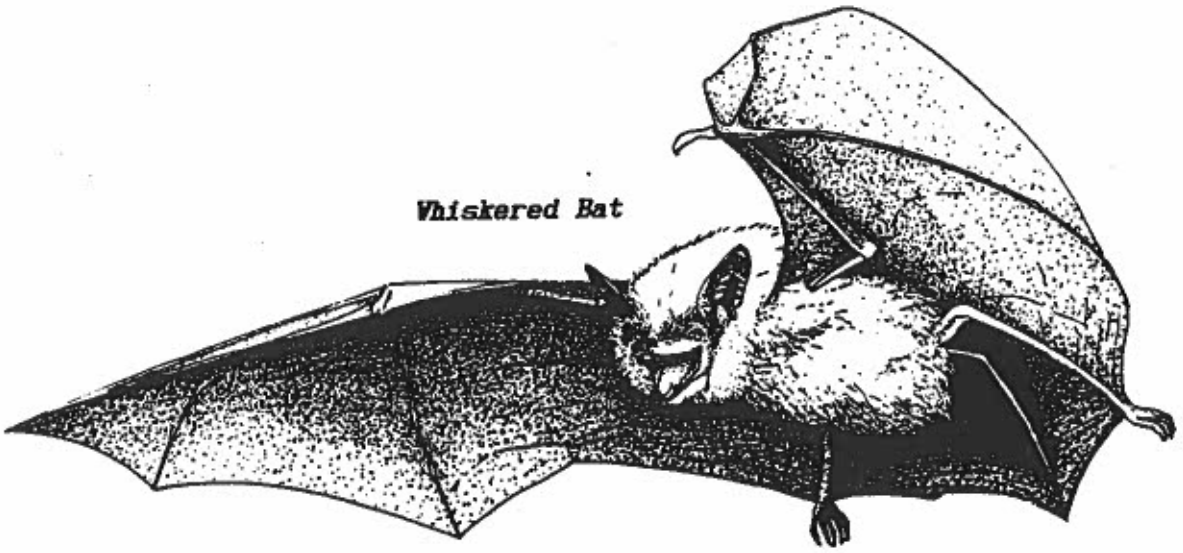
One would expect bats to choose mines close to their feeding and breeding areas but this does not seem to be the case . Durham Bat Group have found as many hibernating bats in high-altitude moorland mines as in mines in sheltered, wooded valley bottoms. In County Durham every mine is a potential bat roost.

WHAT TO LOOK FOR

Bats announce their presence by leaving calling cards in the form of small droppings at the mine entrance. These are dark, dry and crumbly, because they are composed of insect remains. This distinguishes them from squidgey mouse droppings, which are a similar size and shape.

BATS NEED FRIENDS

The populations of British bats have declined badly since the turn of the century. There are lots of reasons for this; pesticides, loss of woodland, changes in agricultural practice and disturbance of breeding roosts and hibernacula. As someone interested in mines, you can certainly do your bit to ensure that they can winter in peace.



Whiskered Bat

For more information about bats, bat conservation and how you can help, please contact Durham Bat Group c/o 52 Old Elvet, Durham.

VISIT TO BROADWOOD

George Pickin

As a continuation of the study of the processing of lead and fluorspar ores at the Killhope site and at the previously visited Whiteheaps plant (derelict), members were invited to visit the modern Broadwood processing plant at Frosterley.

A total of thirteen members assembled at 09.30 hrs to be met by Mr. Stan Agar who was to be our guide.

The plant stands on the south bank of the river Wear to the east of Frosterley village, and is approached over a river bridge and a level crossing over the rail line to Eastgate. The plant is built on the site of an old limestone quarry.

Mr. Agar took the group into the quality control laboratory where he gave a brief description of the plant, its operation and products in the quiet of the laboratory. The process was illustrated by a practical demonstration of the art of "froth flotation" the most important separation technique used on the plant for the recovery of fluorspar and lead from the gangue materials. Some 35-40% of the plant feed is fluorspar (CaF_2) which is the major product from the plant. Lead ore is present in the feedstock at around 1% by weight, mainly as Galena (PbS). Gangue components of the feed are mainly silicious rock and quartz with some iron present as carbonate and oxide.

Ore feedstock for the plant is supplied by company owned mines at Cambokeels, Groverake, Blackdene and Whiteheaps and up to 20% from old tailings dumps from previous workings in the area. This modern plant can separate to finer sizes with greater efficiency than the old jigging and flotation plants.

The Minworth Group also own a similar plant higher up the Wear Valley at Blackdene and are one of the two major fluorspar producers in the country.

Mr. Agar demonstrated the flotation process in a laboratory scale Wemco flotation machine with a glass cell. The material to be separated was a pulp containing some 50% solids which had been ground to less than 0.18mm with an average particle size of around 0.05mm. The flotation cell is designed to agitate the pulp to keep the solids in suspension and at the same time to introduce small air bubbles, the purpose of which will be described later.

The first stage in the flotation process is to separate and remove the lead containing materials. This is carried out at a pH of 8.0 and a small addition of lead collecter - Sodium Isopropyl Xanthate is added to the pulp. This has the purpose of selectively coating the surface of the lead compounds to make them attractive to the air bubble passing upward through the pulp from the cell impeller or agitator. A frother chemical addition is also made at this stage to condition the pulp to give constant size, stable skin, small air bubbles. A valve was then opened on the impeller which allowed air to be drawn down the hollow impeller into the pulp and to form the air bubbles necessary for the process. While rising to the surface of the pulp the air bubbles attract the lead minerals and form a thick froth on the surface - hence the name froth flotation. The froth is removed by scrapers for further processing.

The second stage of the process was now carried out on the remaining pulp - now virtually free of lead minerals. The pH was adjusted to 10 by the addition of Soda Ash (Sodium Carbonate - Na2CO3) and a depressant was added to prevent carbonate minerals from floating. Dextrin is used for this purpose. A reagent called Quebracho, an extract from South American trees is added next to depress siliceous minerals followed by a fluorspar collector Oleic acid - a fatty acid. No further frother is added. The pulp is conditioned - that is agitated for a few minutes before air is allowed into the cell. The new froth formed is rich in fluorspar and is progressively upgraded by further stages of froth flotation to contain over 97.5% CaF2 with less than 1% of SiO2 and as low as 0.03% Pb.

In the laboratory this process is carried out on a batch basis, whereas on plant the process is continuous.

After the laboratory demonstration and a question and answer session the party moved outside to begin a tour of the site and plant.

The plant was commissioned in 1978 for Swiss Aluminium Mining (UK) Ltd. having been designed and built by Matthew Hall Ortech Ltd. at a cost of around £2m and was purchased by the Minworth Group, the parent company of Weardale Minerals Ltd. in 1982. The plant performance has been extensively improved over the years by changes in processing equipment and greater efficiency of operation.

Run of mine ore is brought by lorry into the stockyard where it is blended with reclaimed tailings (fines) and then fed by front end loader onto a Grizzley or heavy duty static screen where +10" material is removed. This oversize is then crushed in a jaw crusher to less than 4" in size before being recycled. The undersize from the screen falls into a bunker from which it is fed by a reciprocating feeder and conveyor onto a double deck screen. Material +25mm is passed through an input crusher and is recycled to the screen. Undersize from the screen (-25mm) passes along a tripper conveyor, which can discharge the ore at points along its length, into a covered storage area or fed into a surge hopper and then into the main feed bunkers for the plant. These two bunkers have a storage capacity of 500t each.

Ore from the bunkers is fed via weigh feeders into the processing plant. The first stage of processing is to wash the fines from larger particles on a 1mm washing screen. The screen oversize (+1mm) is fed into a Dynawhirlpool dense media separation plant where the lighter gangue particles are separated from the heavier fluorspar and lead containing minerals. The gangue particles are generally siliceous minerals and country rock. The Dynawhirlpool is a dense media separation unit using fine ferrosilicon in water as the separating media. This involves the separation of minerals into light and heavy fractions according to their density and in this particular process is effected by centrifugal force within the unit itself, particle density, feed pressure and density of the separating medium. The design of the vessel and pump pressure impart a centrifugal action to the medium and ore particles causing the denser particles to be removed from one end of the unit and the lighter ones from the other. These two products are discharged onto a screen where the fail ferrosilica is first drained and then washed from the products. Ferrosilicon from the draining section is recycled to the Dynawhirlpool circuit and dilute washings are passed over a magnetic separator where the magnetically susceptible ferrosilicon is reclaimed and is then demagnetised before feeding back into the circuit.

Lighter particles, "floats" from the separation are conveyed from the plant to a stockpile and are sold as aggregate.

The heavy product is fed to a jig where a coarse product galena is removed.

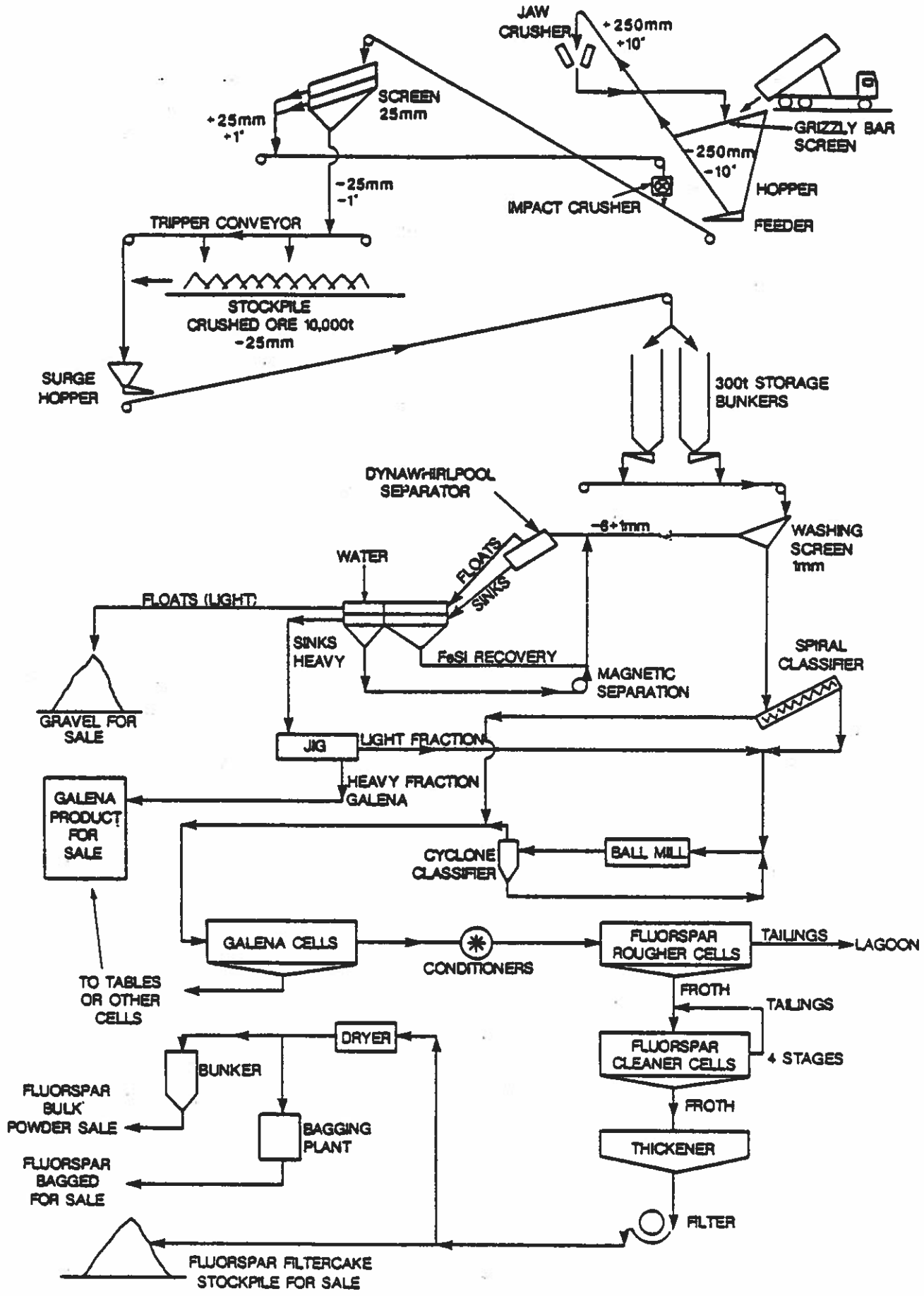
The lighter particles from the jig, along with -1mm fines from the washing screen, now form the feed to the flotation plant. The -1mm fines pass into a spiral screw classifier where the smaller particles, less than 0.18mm are separated before the flotation plant milling circuit. The coarse particles which settle in the classifier are drained and removed by the classifier spiral screw and along with the jig discharge enter the milling or grinding circuit where they are reduced in size in a ball mill charged with steel balls. Slurry from the mill, containing the ground ore particles, is pumped to a cyclone classifier where a centrifugal size classification takes place at around 0.18mm particle size. The coarse particles (cyclone underflow) are recycled to the ball mill for regrinding and the fine particles (cyclone overflow) are now fed to the flotation plant.

The flotation cells used on the plant are Wemco cells. The first stage of flotation is the removal of lead containing minerals using the reagents previously demonstrated in the laboratory. The primary froth is sufficiently clean and of high grade to be suitable for sale but froth products from the lead scavenger cells, where most of the remaining lead is removed, is further cleaned on concentrating tables to improve the grade.

Tailings from the lead circuit, unfloated ore rich in fluorspar with a lead content as low as 0.03% becomes the feed to the fluorspar froth flotation circuit. Reagents are added and the pulp is conditioned for several minutes in agitated tanks before feeding to the cells. In the first stage of separation, using eight cells, the maximum amount of fluorspar is removed giving a low grade froth product. This is called "roughing" and the rougher tailings or rejects will contain as little as 5% fluorspar. The tailings or waste are floculated, i.e. treated with an organic chemical which causes them to agglomerate to produce rapid settling of the solids; and are pumped to lagoons in an old quarry.

The froth from the spar rougher cells is now processed in a series of banks of cleaner cells where the fluorspar content of the product is gradually increased to obtain the final acid grade product. To help to achieve this high grade product softened water is added to the cleaner circuit. Tailings from each stage of cleaning flotation are recycled to help to maintain pulp density in the cells and give efficient flotation.

The acid grade froth product is thickened and filtered on a Stockdale rotary vacuum drum filter to give a product which contains around 8-10% moisture. The filter cake is stockpiled according to the grade produced and is supplied to the customer either as the wet filter cake or as a dry product. Drying of the filter cake can be undertaken on site at around 2-3 tph or is transported to a sister plant at Blackdene Mine, Ireshopeburn where drying can be carried out at up to 14 tph. The dry powder fluorspar is supplied in grade according to customer requirements in bulk in road tankers, in bulk bags up to 1 tonne or in re-inforced paper sacks containing up to 50kg. The plant is capable of producing in excess of 1100t per week of product fluorspar to customers in the U.K. Europe and worldwide.



WEARDALE MINERALS LTD. FLUORSPAR PROCESSING FLOWSHEET - BROADWOOD PLANT

Powdered fluorspar is supplied for use in the following industries:- hydrofluoric acid manufacture, glass fibre, glass manufacture, enamels and ceramic glazes and welding rod flux coatings.

Fluorspar powder in lower grades, 75-95% CaF2 is also briquetted at the Blackdene Plant to form ovoids weighing around 25g each for use in metallurgical industries as a flux.

Typical analyses of the fluorspar produced at Broadwood are as follows:-

	CaF2	SiO2	Pb%	S%
Premium Grade	98.0	0.8	0.03	0.03
Special Acid Grade	97.5	<1.0	0.05	0.04
Ceramic Grade	95.0	3.0	0.1	0.1
Metallurgical Grade Briquettes	75/95	2/5	0.1	0.1

The visit to the Broadwood Plant proved to be an enjoyable and educational experience around a plant which is one of only three of its type in Great Britain and is one of the world's most modern producers of high grade fluorspar products.

All members attending the visit wish to thank Mr. Stan Agar for acting as our guide and to the Management and Directors of Weardale Minerals Ltd. and the Mineworth Group for allowing the visit.

ARE YOU INTERESTED?

Alan Blackburn

Not many people know, or want to know, that I have been asked to help Ian Forbes with organising work parties for Friends of Killhope. Honestly, its a poor reward for all those days digging and pulling lumps of metal from old mine sites, under the ever faithful F.O.K. rain cloud.

The only point I would like to raise is that while work parties of the recovery type will continue spasmodically as before, with people who have indicated their willingness to help, there are other things we could organise - but don't.

The reason is the good old catch 22 - we will try and organise anything if there is an interest - BUT - there is no interest therefore we don't organise anything!

In other words, if you would be interested in some outdoor work that could contribute to our further knowledge, such as early mine site surveys/ photography/surface and underground recording/preservation etc. please write, phone, pester Ian or myself - after all, if you don't, we won't!

(Alan can be contacted on Weardale 517272 - Rookhope Nurseries, Rookhope, Nr. Stanhope, Co. Durham DL13 2DD.)

PROJECT OFFICER'S REPORT

A necessarily brief report this time as there have been no meetings since the February Newsletter and Friends are only just beginning to get out and about again after the winter.

The geology course held for us by the W.E.A. in Stanhope was a great success and we were enthusiastically and patiently taught by Dr. John Senior. If anyone has a burning desire for an evening class on a topic related to our field of interest next winter please let me know soon.

Donations continue to come in; Ed. Johnson has given us two fine buckers now on display at Killhope and the Friends library has received a number of additions from Jake Almond, George Pickin, Dick Phillips and Dr. Iveson. Articles received are "Prospectus of the Weardale Lead Company", an extract on jigs from "A Descriptive Catalogue of the Models in the Museum of Practical Geology" (1865), "The Dressing of Lead Ores" by Thomas Sopwith(Jnr) 1870, "Lead Mining on Alston Moor. The Story of Vieille Montagne Company. How Wartime Problems were Solved" (an article from the Cumberland and Westmorland Herald 1949.) "The London Lead Company 1692-1905 by Dr. Raistrich (1934) and "The Alston Mines"by Rev. W. Nall (1902/3.)

Mr. Dick Graham of NEI Parsons has taken a particular interest in Killhope over the last few years and we are most grateful to Stewart Strachan and Chris Hicks at Parsons and to Mr. Graham for their magnificent work in making a new top keep for the axle bearings of the big wheel at Killhope; such help is invaluable in the development of Killhope.

Over the last couple of months Friends have helped in identifying and noting the dimensions of early levels and there has been considerable discussion on the vexed question of early smelting and the construction of "bole hills." David Cranstone in particular has been helpful here but I appeal to any Friend who can contribute information on the exact form and method of use of bole hills to get in touch.

David has been at Killhope with a small team doing further work on the settling tanks and washing floor; a report of this work will appear later. He will be returning for a further short season in late May.

Finally, Alan Blackburn has agreed to help organise work on projects; volunteers can ring either me On Weardale 0388 537470 or Alan - see Alan's article on Page 10.

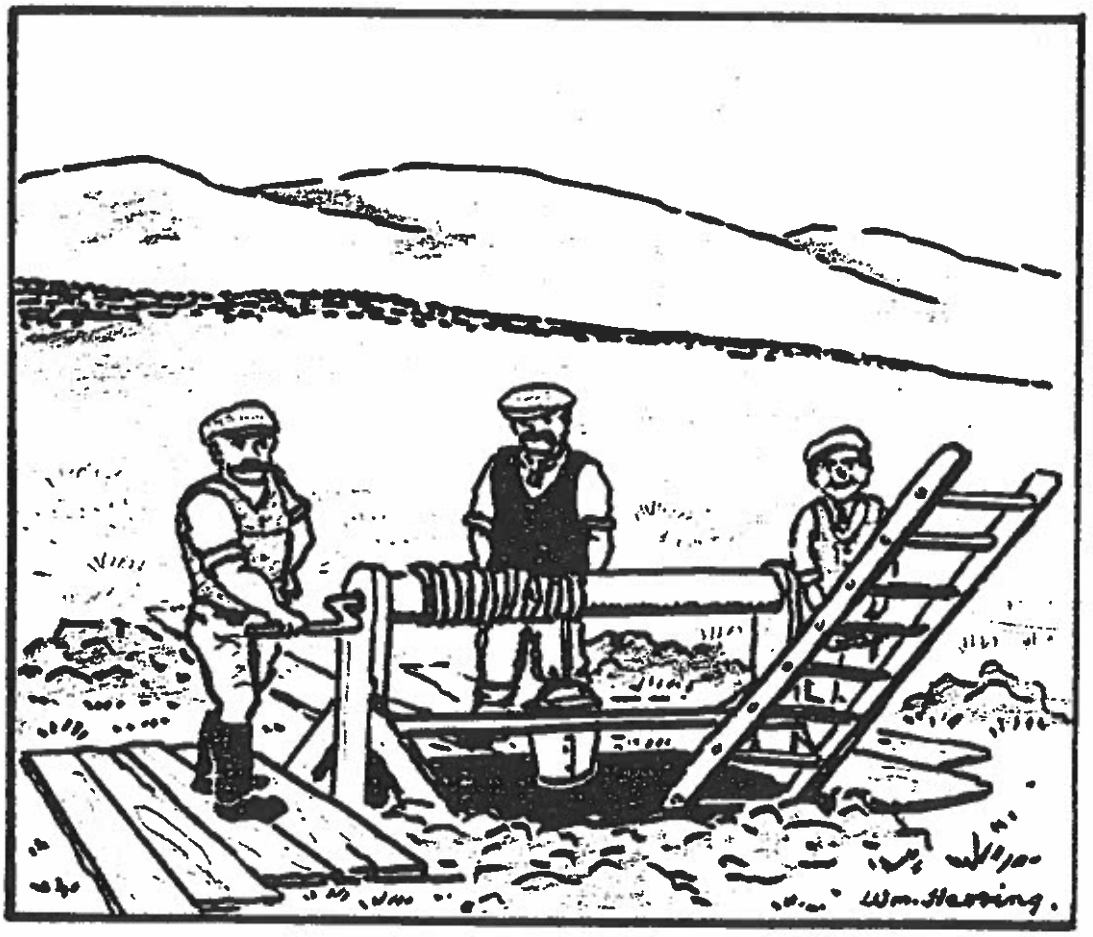
Note: We feel it could be useful to publish a list of member's names and addresses in a future Newsletter to help people keep in touch with each other. If you don't want to be included in this list, could you let the Secretary know?

ERRATA

In Ian Forbes' article in the last Newsletter the title should be Mr. Westgarth's Statical Engine and the third line of the last paragraph on page 7 should read: 50 miners.

ROSTIE-STOWSTIES (Part 2)

In the last Newsletter we mentioned the persistence of the jack-roll through mining history and reproduced a 16th Century woodcut of this simple device. Compare that with the illustration below, drawn by Bill Herring from a photograph taken in 1927 and given to us by Joe Short. On the back of the photograph Joe has written "Tom Short, Joe Short(son of Tom Short) and Mat Taylor, Baxton Law 1927. Sinking a shaft onto the vein for air and to prove the vein."



PROGRESS AT KILLHOPE — Planning Dept, Spokesman

At first sight there may appear to have been relatively little progress at Killhope during winter and spring. Not so - most of the work has been concentrated on the woodland area adjacent to the crushing mill and these works are hidden from view.

Down below, the dead heap has been extended well beyond the end of the bouseteams. The next stage will be to extend the railway from the level entrance and erect the buntings at the end of the deads. By the time this Newsletter is published there may well be three trestles carrying the railway and a mine tub sitting on the rails in elevated splendour.

The mine tub is one of six now coming off the conveyor belt. The wheels for these tubs have been cast at NEI Parsons, Heaton Works and donated to Killhope. The ironwork has been forged by a Willington Blacksmith and the assembly has taken place at an MSC training centre in Durham (except for one tub which Friends are constructing). Work will start soon on a different model - tubs which carried bouse to the crusher.

In the snow of March, Dave Cranstone and his team of archaeologists achieved an amazing amount. Unfortunately, many new questions were raised by their investigations. However, areas of the dressing floor were cleared for restoration and this has allowed the erection of a replica double hotching tub in the proper location. It now has its wooden box water supply from the mine entrance.

Progress on restoring the buddle house has been slow. One gable end is well on its way to being rebuilt and the roof trusses have been assembled. Behind the buddle house and up the valley side, the wall around the horse field has been rebuilt.

The footpath around the wood has now been completed and forms a most attractive route. The first major display will be the reservoirs. The banks where spoil was tipped when the reservoirs were dug out, have been regraded. The valves have arrived on site and are awaiting installation. The shallow pits display is well advanced and a massive amount of building material has been hauled up the steep side of Hymer's Hush onto the top of the Great Limestone. This will be used for creating the small smelt hearth display and the recreation of an eighteenth century mining area complete with gin-gang and stable/toolstore. This building will have a heather thatch roof with a 54° roof pitch (that means it is exceptionally steep and the gable walls will be impressively high.) The details of this mineshop have been based on the buildings at Levy Pool near Bowes, one of the very few heather thatch buildings to have survived in the region.

Another major change in the woodland has been the completion of the car park. Over Easter weekend this proved its worth - on two of the days that weekend there were more visitors than on any day in 1986. Unfortunately the new car park is not quite as large as was intended. When excavations were taking place it was discovered that there was well over two metres of clay in places. The car park is therefore set into the hillside and part of the anticipated parking space is taken up with its batters.

With the burst of sunny weather in late April there has been a rapid increase in the rate of progress on site. If this activity continues then Killhope should be transformed by mid-summer.

A CAUTIONARY TALE

Brian Short

For me, last year's guided tour of Smallcleugh Mine at Nenthead held a special interest because - well let me start at the beginning.

Being born and bred at Nenthead, I was always aware of the history of the area though not fanatical about it at the time.

As young lads we spent a lot of time playing around Smallcleugh Mine area. In those days the beck adjacent to Smallcleugh sorting floor was partly covered with stout beams and boards and on showery days made a good shelter.

Sorting floor personnel obviously thought the same way as many names and dates were etched into these beams, although we never paid them much attention.

One day in 1983, my son and I were walking up the beck when we came upon these beams, washed down by a recent flood. I immediately remembered their origin and upon examination I saw the name W. HETHERINGTON 1890. I thought this may be my great grandfather, as he was an Agent for the mines at that time.

Anyone with a plan of Smallcleugh Mine will notice that a passage between the Wheel Flats and Middlecleugh First Sun Vein is called Hetherington's Crosscut. This crosscut was commenced, according to my research, after the flats had been worked out, and William Hetherington was regarded as "a bit soft in the head" for ordering such an undertaking. However, an appreciable amount of ore was found in this area and consequently he was held in higher regard after this. He also had the honour of having a rise named after him on Carr's Cross Vein, and a sump on Longcleugh Vein.

Whether or not Crosscut Hetherington and W. HETHERINGTON 1890 are one and the same person is debatable, but the former is definitely my great grandfather. I now plan to research into Parish records, etc., for any information about him, a move which could prove interesting, to me at any rate.

Again, as a boy at Nenthead I would often find myself with friends up at the old Smelt Mill. The main attraction then was the steel pellets lying around as they made good ammunition for catapults. These pellets, as I discovered later, were used in mechanical jiggers to aid separation of ore from waste. At that time, on the end of one of the buildings, was a small office which was lined with lath and plaster and contained a broken desk and a corner cupboard.

Several years later I found myself working for a local spar washer who decided to build a small primitive washing plant in what was the blacksmith's shop at the Mill. One lunchtime I decided to have a look in the small office and, after brushing aside the fallen plaster from the top of the cupboard, I found a pile of papers and a book. The book turned out to be a register and the papers, approximately two hundred of them, recorded, in very orderly handwriting, amounts and prices of everything bought; candles, picks, shovels, coal, etc., for the years 1876 to 1878. I placed everything in a cupboard at home for safe keeping. The register was lent out and never seen again, and some weeks later when I asked my mother where the papers were, she replied "Oh, I threw them in the dustbin last week"..... Enough said! Except that it still hurts to tell this story today - twenty one years later.

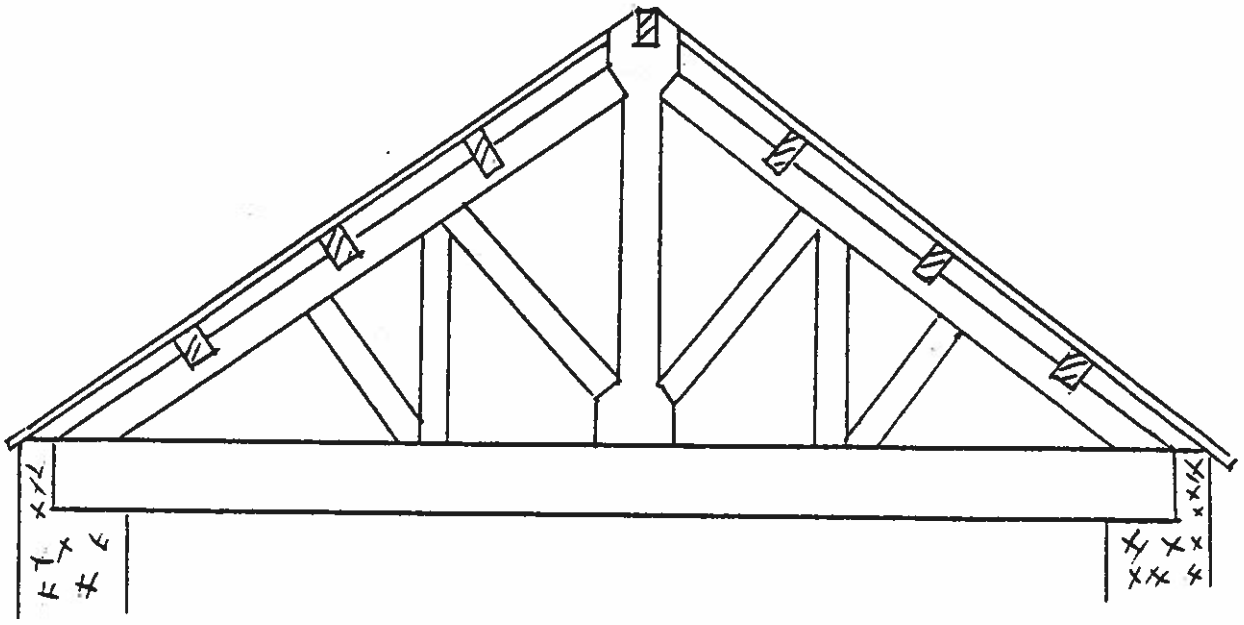
999?

Alan Blackburn

Occasionally I get these problem 'phone calls - not the kind you call the police about, but enough to make you want to look for the nearest wall, so that you can hit your head on it! They tend to follow a pattern, such as "Hello Alan, I have a problem!" or "Do you know what type of window was used in Killhope buddle house" or "How were the roof trusses designed for the buddle house." There have been quite a few of late, some remain, but the two listed above have been solved.

In helping to answer them I often refer to Thomas Wall of Rookhope, who has spent most of his life working for the Weardale Lead Company and those mining companies that followed them in the dale. His technical and practical skills, together with an excellent memory for fine detail, and an interest in the early mining equipment and methods, has made his knowledge of great use to those of us who are trying to answer seemingly simple, but often baffling questions.

He solved the problem of the windows which were plain non opening multi pane type very easily, and then gave the interior roof design for Killhope buddle house. This was a series of main cross beams at wall height with a central king post and two outer queen posts. In essence it look like this:-



Made from good pine and with all main joists fully carved with no nails, the timber was highly prized by joiners if any became available as scrap. Main cross beam and king post probably 12" x 5".

It is also of interest to know where the original roof went - it was taken off and removed to Boltsburn Mine, where all the slates and timbers were re-used by the joiners. Although it would probably have fitted, it was not used as the roof on the Boltsburn Buddle house - that came from Rispy - waste not, want not!

AN ANSWER TO A PROBLEM?

Ian Forbes

Working at Killhope, particularly with school children, is never dull as each group is different and very often a child will ask an unexpected question ("if they left all that lead lying around, how come nobody stole it?" from one streetwise youngster) or shed light on the subject from an unexpected angle.

One of the problems of reproducing the human form in a model is the difficulty of getting a lifelike effect. The other day a child at Killhope suggested a novel solution to this problem.

Those who have been to Killhope will remember that we have quite a convincing dummy miner standing in the corner of the mineshop. I had showed a party of 10 year olds around the mineshop, showing them everything including the stuffed mice on the bed and the rat on the beam. We had gone down to the Smithy and I was talking about that room when a voice arose from the back of the crowd; "Was the man upstairs stuffed as well?"

PIGGINS AND WIMBLES

A number of Friends responded to my plea for information about mining terms in the last Newsletter. Thanks to Leslie Blackett, John Gosden and Doug Tyerman who explained "piggins" and "wimbles;" Doug's letter is reprinted below.

Harold Beadle also told me that"sludging a level" was an expression current in his younger days and meant simply cleaning out the sludge and muck from the bottom of a level.

"Vogue level" remains uncertain; we think it referred to the new-fangled mining practice of putting waggonways in mines for horses to draw tubs along, so the "vogue level" was the horse level; usually of course the main haulage level of the mine.

Doug Tyerman writes from Bishops Stortford.

"Your recent comments regarding the vocabulary of old documents prompted me to search my bookshelves where I found the information on the enclosed page.

When Samuel Johnson published his dictionary in 1755 many of the contemporary technical dictionaries were more accurate and more comprehensive than their general counterparts. There may be a glossary of mining terms which was produced in this period. I think that many of the terms that you find in these documents would appear in a glossary or dictionary of the dialect of the area."

(continued overleaf)

PIGGINS WIMBLES AND GROVES.

WIMBLE.

n. An auger. (Stated to be "still in current use"). [4]

n. Any of a number of hand tools, such as a brace and bit or a gimlet used for boring holes.
vb. To bore (a hole) with, or as if with, a wimble.
(C13 from Middle Dutch 'wimmel', an auger) [2]

n. An instrument for boring holes, turned by a handle: a gimlet: an auger:
a kind of brace: an instrument for boring in soft ground.
vt. To bore through with a wimble.
(Through Old Norman French from Middle Dutch 'wimpel') [3]
adj. Active, nimble. (A Northern word now dialect. Of Scandinavian origin) [3]

n. A brace-like tool for twisting straw into a rough rope used in binding
straw and hay bales. [5]

PIGGIN.

n. A small wooden bucket or tub. Also called a pipkin. (C16 origin unknown) [2]

n. A small pail or bowl of staves and hoops. One stave usually prolonged as a handle.
A vessel of various other kinds. Possibly connected with the Scottish 'pig', an earthenware
crock, hot-water bottle, or other vessel: earthenware: a potsherd. (Origin unknown) [3]

n. An earthenware pitcher. [7]

GROVE (or groove).

An interesting viewpoint on this term came to light when tracing the alternative spelling given by Harold Beadle - 'groove'.

Collins gives the etymology - "C15 from obsolete Dutch 'groeve' of Germanic origin, compare Old High German 'gruoba' - a pit." (a hole in the ground, not a colliery)

Similarly Chambers says:- "Probably Dutch 'groef', 'groeve', a furrow, cognate with German 'grube' a pit, Old Norse 'grof', English 'grave'."

There are two branches in the meaning; groove/grave/pit, a hole which has been dug in the ground; groove/furrow/grave, a long hollow such as is cut with a tool. In the second sense grave is used as a verb with the sense to cut a groove with a tool.

It is tempting to speculate that 'groove' conveniently described both the operation of hushing and the shafts sunk to reach deeper ore. Given the Northumbrian accent of the time it would be very easy for 'groove' to change into 'grove'.

References:

[1] Concise Oxford Dictionary 1967
[2] Collins English Dictionary 1979
[3] Chambers 20th Century English Dictionary 1964
[4] Dictionary of Archaic and Provincial Words of the 14th Century onwards. J O Halliwell 1925
[5] Country Craft Tools P W Blandford 1974
[6] A Classical Dictionary of the Vulgar Tongue Capt. Francis Grose 3rd Edition 1963.
[7] The New Geordie Dictionary Frank Graham

Doug Tyerman

RECORD BREAKING APRIL AT KILLHOPE

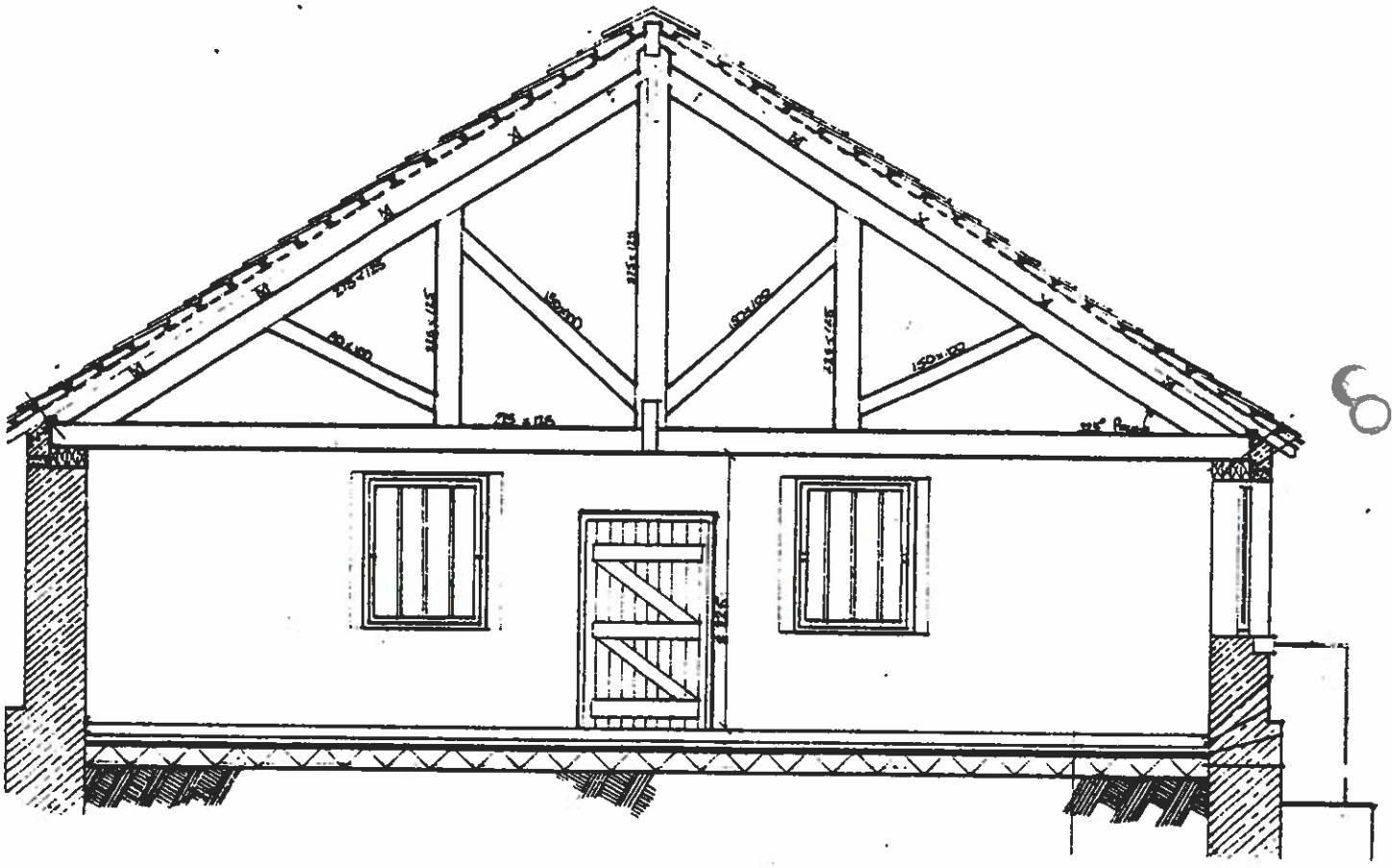
Planning Dept. Spokesman

Those of you who have a good memory for weather matters will recall that April 1985 was unpleasant and April 1986 was appalling. This foul weather was reflected in the pathetically low number of paying customers: 1085 in April 1985 and 695 in April 1986.

It is hardly surprising that the 1987 figure is a considerable increase - 3,055. Surely not all of this increase can be attributed to sunshine and dry days. Additional publicity and a greater interest in lead mining, the North Pennines and Killhope have presumably played their part.

Another good sign is the increase in the number of party bookings. At the time of writing (in early May) there are 60% more party bookings than in 1986. If this trend continues there are likely to be between 250 and 300 booked-in parties in 1987. This may mean an additional post at Killhope to deal with visitors.

Elevation of Killhope Buddle House being restored to meet modern requirements. (Compare this with sketch of original on Page 15.)



FRIENDS OF KILLHOPE - REPORT OF THE FIRST ANNUAL GENERAL MEETING HELD IN THE KINGS ARMS HOTEL, ST. JOHNS CHAPEL, ON 11TH JUNE 1986

Apologies for absence were noted.

Mr. Richard Turner welcomed all to the meeting, in particular Sir Kingsley Dunham, and presented a summary of the year's activities. He thanked the Steering Committee for their work and noted that the Newsletter had been a particular success. He paid tribute to Durham County Council for their collaboration with the setting up of Friends of Killhope and to Eric Ryan for his enthusiasm.

Ian Forbes reported on the success of the lectures. He outlined the programme of lectures and visits for 1986. Many items had been acquired for Killhope as a result of Friends' activities. He expressed his thanks and appreciation for all who contributed.

The annual accounts were accepted. Mr. Eric Ryan indicated that a further donation would be forthcoming from the County Council in 1986.

Sir Kingsley Dunham conducted the election of officers and committee. The following were elected.

Mr. Richard Turner, Chairman; Mrs. Dorothy Chambers, Secretary; Mrs. Pamela Forbes, Treasurer; Mr. Ian Forbes, Projects Officer; Mr. Bryan Chambers, Newsletter Editor; Mr. Michael Crompton, Mr. Simon Hodgson, Mr. Edward Johnson, Mr. Peter Lanham, Mr. William Grigg, Mrs. Marjorie Grigg - Committee Members.

Sir Kingsley congratulated all concerned with the Killhope project and particularly the foresight of the County Council, with regret that this had not been done earlier when many more artefacts were readily available.

The Honorary Auditor, Mr. J.R. Hall of St. Johns Chapel, was re-elected and the Secretary was asked to convey appreciation for his services.

In response to a member's question a discussion ensued into subscription rates. It was generally accepted that these were low compared with similar organisations and that there was little in reserve after four newsletters. It was agreed to consider various suggestions for increasing funds.

Mr. Eric Ryan was able to give details of a new building at Killhope which would give more scope for Friends' activities in the future.

In conclusion, the Chairman reminded Friends of the forthcoming Quoits weekend at Killhope and the donation by Michael Crompton of two pieces of decorated china which would be raffled during the activities.

FRIENDS OF KILLHOPE - SECOND ANNUAL GENERAL MEETING

to be held in Kings Arms Hotel, St. Johns Chapel
on Wednesday 10th June 1987 at 7.30 p.m.

A G E N D A

1. Apologies for absence.
2. Minutes of First Annual General Meeting.
3. To receive a report of the 1986 season.
4. To receive a Statement of Accounts.
5. To consider the following elections:-

   Chairman
   Secretary
   Treasurer
   Projects Officer
   Newsletter Editor
   One Committee Member

6. To confirm the appointment of a Vice President.
7. To consider the re-appointment of the Auditor.
8. Any other business.

FRIENDS OF KILLHOPE

RECEIPTS & PAYMENTS ACCOUNT FOR THE YEAR ENDED 31ST MARCH 1987

INCOME	£
Donations	46.00
Donations (Durham County Council)	400.00
Membership Subscriptions	367.50
Income from Lectures	17.60
Income from Quoits Competition	32.69
Income from Barbecue	112.25
Cap lamp sales	256.50
	1,232.54
Cash in hand and at bank 31st March 1986	436.18
	1,668.72

EXPENDITURE	£
Postage and Stationery	103.53
Printing: Newsletters, Posters, Membership Cards	325.05
Expenses of Lectures	77.83
CBA Membership	3.00
Insurance CBA	41.00
Expenses Barbecue and other activities	131.64
Cost of Quoits Shield	30.00
Cap Lamps	253.00
Expenses Buddle Wheel	282.81
Expenses Other Projects	97.21
Treasurer's expenses	7.40
Bank charges	26
	1,352.73
Cash in hand and at bank 30th April 1987	315.99
	1,668.72

Treasurer: Pamela J. Forbes

Audited and found correct - J.R. Hall, Hon. Auditor, High Prys, St. Johns Chapel, Bishop Auckland, Co. Durham

10th May 1987.