# CABBAN

MAY, 1955



THE MAGAZINE OF THE OAKELEY AND VOTTY SLATE QUARRIES

## CABAN

THE OAKELEY SLATE QUARRIES CO. LTD.,
THE VOTTY AND BOWYDD SLATE QUARRIES CO. LTD.,
BLAENAU FFESTINIOG, NORTH WALES,
4 OLD MITRE COURT, FLEET STREET, LONDON, E.C.4.

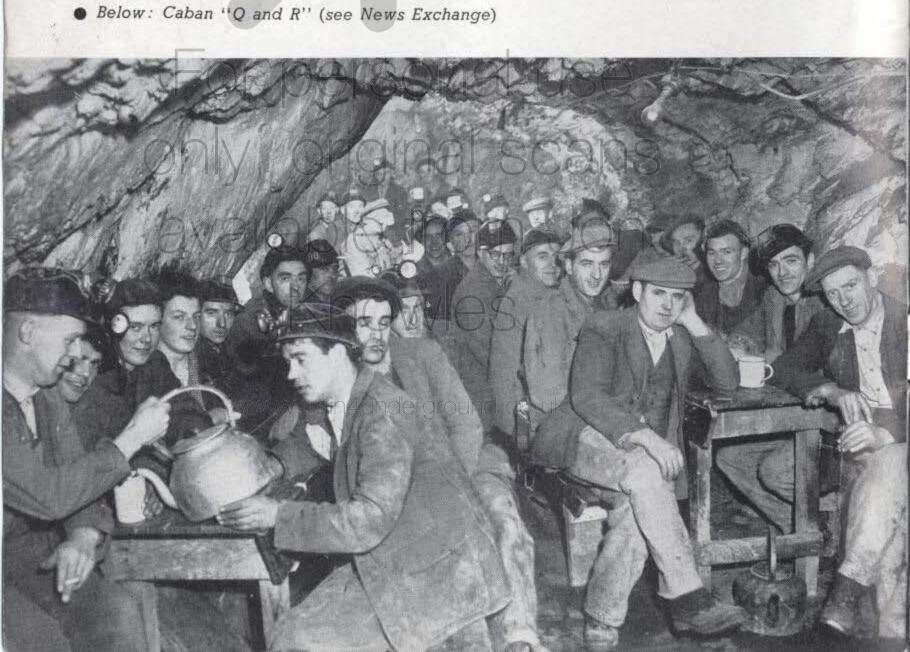
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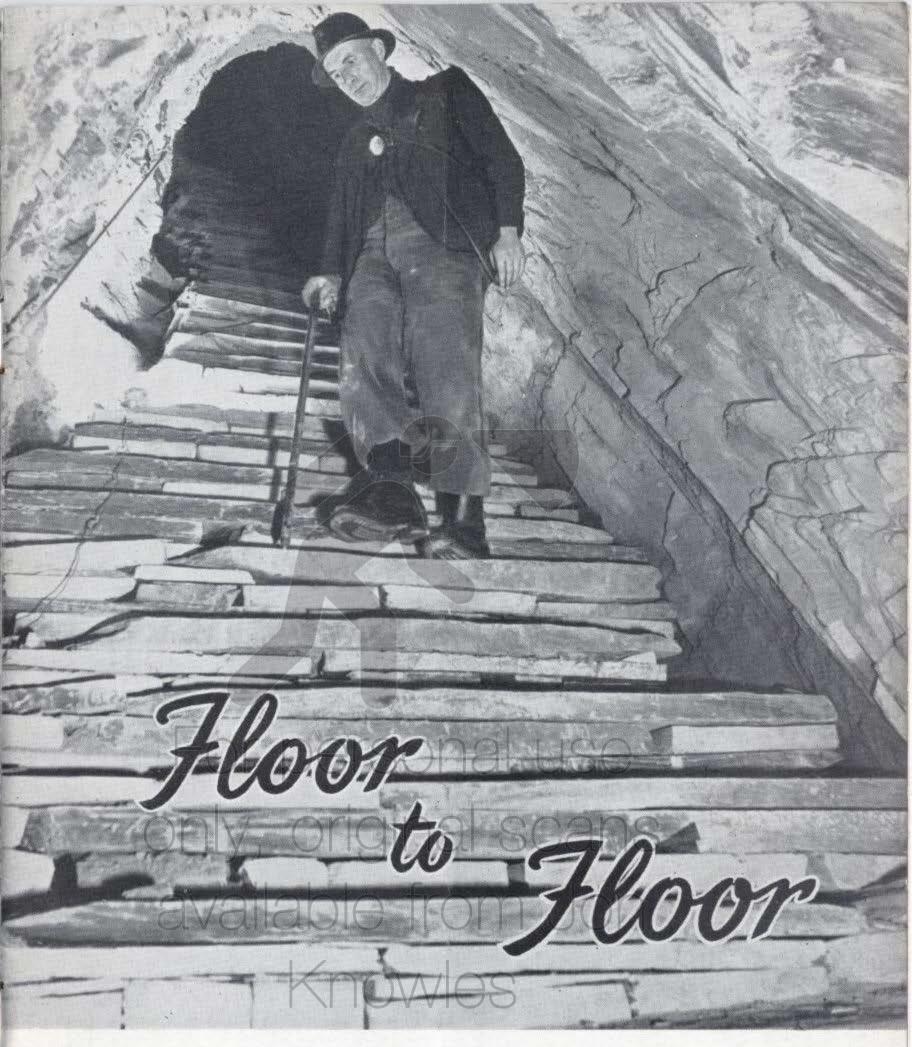
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• Front Cover: Quarrymen's art (see page 24)

Floor to Floor

"Caban" is the name of the type of mess-room in which the men of Oakeley and Votty meet for their meal-break . . . and which is also the centre of social life and passing of information throughout the quarries, hence the title of this magazine.





ROM P FLOOR TO Q steps—the brand-new steps which FLOOR, the route to be we have pictured above.

followed in this instalment of Mined and hewn from the solid

the journey from floor to floor at rock the new staircase is seen Oakeley, literally is a matter of reaching up through the darkness

from the level at Q to P floor, eighty or ninety feet higher up.

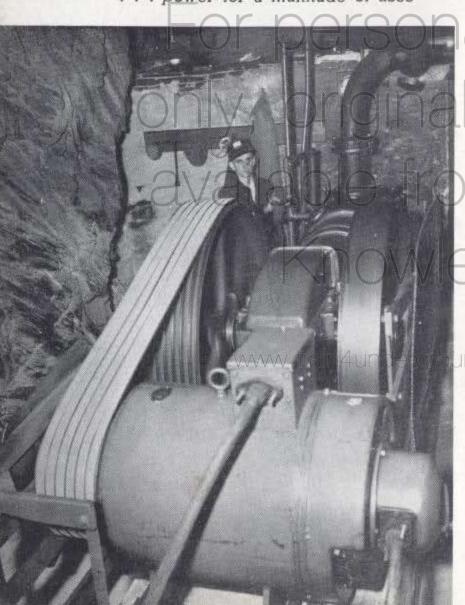
Undermanager Morris Jones, who might be regarded as a little above average height, and who is to be seen comfortably making the descent, affords a fair impression of the width, the headroom, and solidity of the new footpath giving access to the bottom floors.

Often there is speculation as to ways and means of utilising the waste material which, inevitably, accompanies the process of slate winning. The staircase from P floor may be instanced as one of the practical methods of using slate waste.

#### No trowel, no mortar

The staircase, as the photograph reveals, is constructed of selected

. . . power for a multitude of uses



or shaped slabs of waste slate—a veritable jig-saw of bits and pieces, skilfully sorted, laid, fitted and levelled to form both the foundation and the steps—all of it without the aid of trowel or mortar!

Oakeley slate masons, experts also in the old art of "dry-walling," were the builders. A hammer and chisel, and an unerring eye for the right sized piece in the right place were their only equipment in this and similar constructional work.

The steps are laid at the angle of the vein of slate and rest on the live rock.

Examples of the masons' work abound in the quarry. Much of it is to be found on the surface, where the retaining walls supporting roadways and haulage inclines and certain outbuildings constructed of slate waste erected "dry" are never-ending objects of interest and puzzlement to lay visitors accustomed to the more orthodox methods of building with bricks and mortar.

Town-dwelling holiday-makers in the area, who find our industry a fascinating subject for investigation, never fail to be surprised by the quality of the workmanship, the fine finish achieved, and its effectiveness.

#### Old stairway

The new stairway supersedes the older and much less elaborate footway we have illustrated on page five.

The obsolete staircase runs to one side of the length of a supplementary haulage incline serving



Old staircase P to R, Oakeley

the Q and R floors, and connecting with the main haulage marshalling junction on the P floor level above.

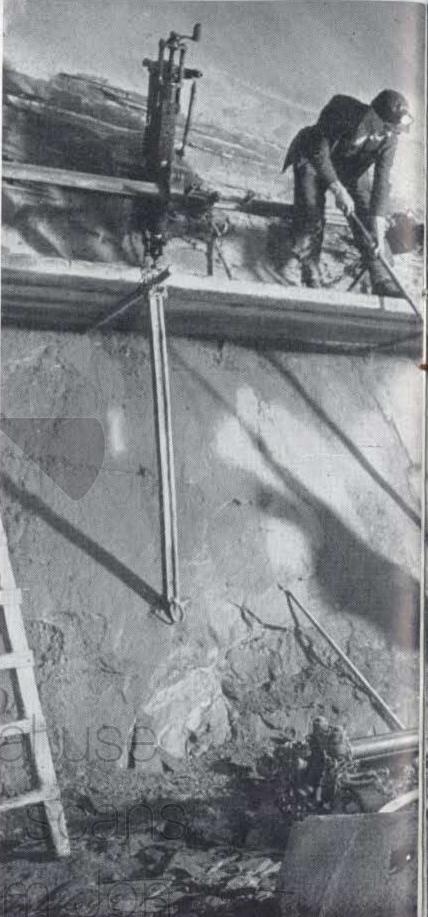
Dewi Lewis, hitcher on Q floor, is seen standing on the footpath alongside of which runs the main incline down to R floor and the switch line turning off into Q floor.

Our survey ended in the last issue with an illustrated reference to the busy traffic marshalling point on P. In charge of the haulage motor at the head of the incline is Aneurin Hughes, whose other duties include the driving and maintenance of air compressor plant serving a multitude of power-operated aids in use by rockmen and others on P floor, and the two bottom floors.

#### Power units

The compressor, with its engineer at the controls, and seen on page 4, occupies a space carved from the solid. Motive power for the compressor is electrical steam has long gone out of fashion. Its function is to supplement, or boost, the head of compressed air which, at different levels, is introduced and piped into the mine workings.

Although specifically included as a source of power for the three lowest floors, the P compressor does not necessarily supply all the operations contributing to the power demanded at this depth. But because of its strategic position at the end of an compressed air power line, which starts high up on the quarry top, fully 1,000 feet above P floor, it is, nevertheless, a key unit in the network of ancillary

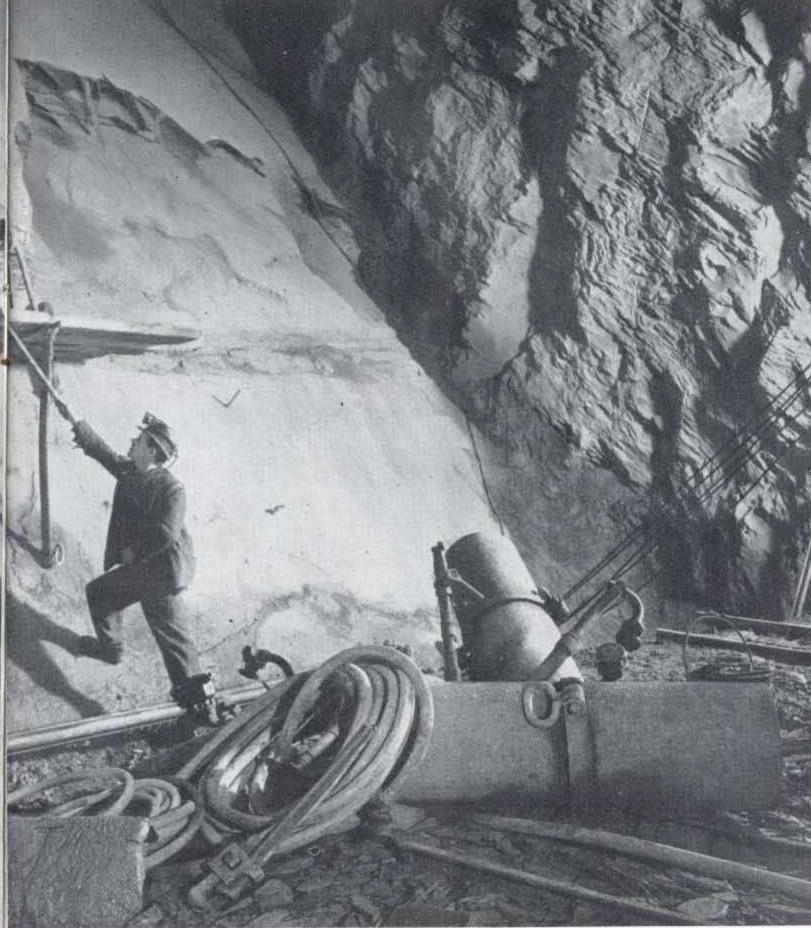


Channellers,

smooth running of the many tasks involved in slate production.

#### Channelling

One of these is the channelling machine, a device erected against the face of the vein in the rock



04

chambers themselves for the mechanical cutting of slate on a big scale. It is a big user of compressed air power and has been much in evidence on Q floor where widening and development is in full swing.

Simply stated, the duty of rock-

men is to prise out, or quarry, blocks of slate from the section of the sloping vein of slate lying between the wide pillars of the chambers.

In a newly-opened chamber the vein of slate first appears as a wall of rock-perhaps thirty-six or

forty feet wide, and extending forward from the chamber entrance to a depth at the base of possibly 150 feet, and again upwards, at the angle of the vein, to a height of about sixty feet.

The quite impressive cubic content of such a mass of slate is the measure of the stint to be undertaken by the two rockmen partners appointed to the chamber. point of time, and given fair average conditions of working, the removal of the mass and its reduction into blocks and, finally, marketable slates, may occupy a matter of fifteen years before the working place actually assumes the vault-like appearance which gives rise to the description of "chamber."

#### Rock conditions

In the rockman's own estimation, the description "fair and average conditions" mean that he and his partner are enabled first to find and then to take advantage of natural geological configurations in the slate that the rockman terms "joints," from which to work below and behind a selected solid mass of rock due to be won and tumbled down on to the chamber

At the lower depths in the mine, such as on Q floor, compression, and the great weight of the slate vein, assumes greater significance than that found at higher levels. Natural aids to probing and prising are fewer and in such cases rockmen must resort to artificial or mechanical aids.

The channelling machine is the chief mechanical aid.

Slate has the facility of splitting along two planes—one horizontally or parallel with the face of the vein; the other vertically, or from top to bottom. It is essential, therefore, when preparing for a first "bite" out of the rock to seek out a natural fissure as a point of "purchase" from which to begin the attack on the main bulk or, failing that, to create one artificiallv.

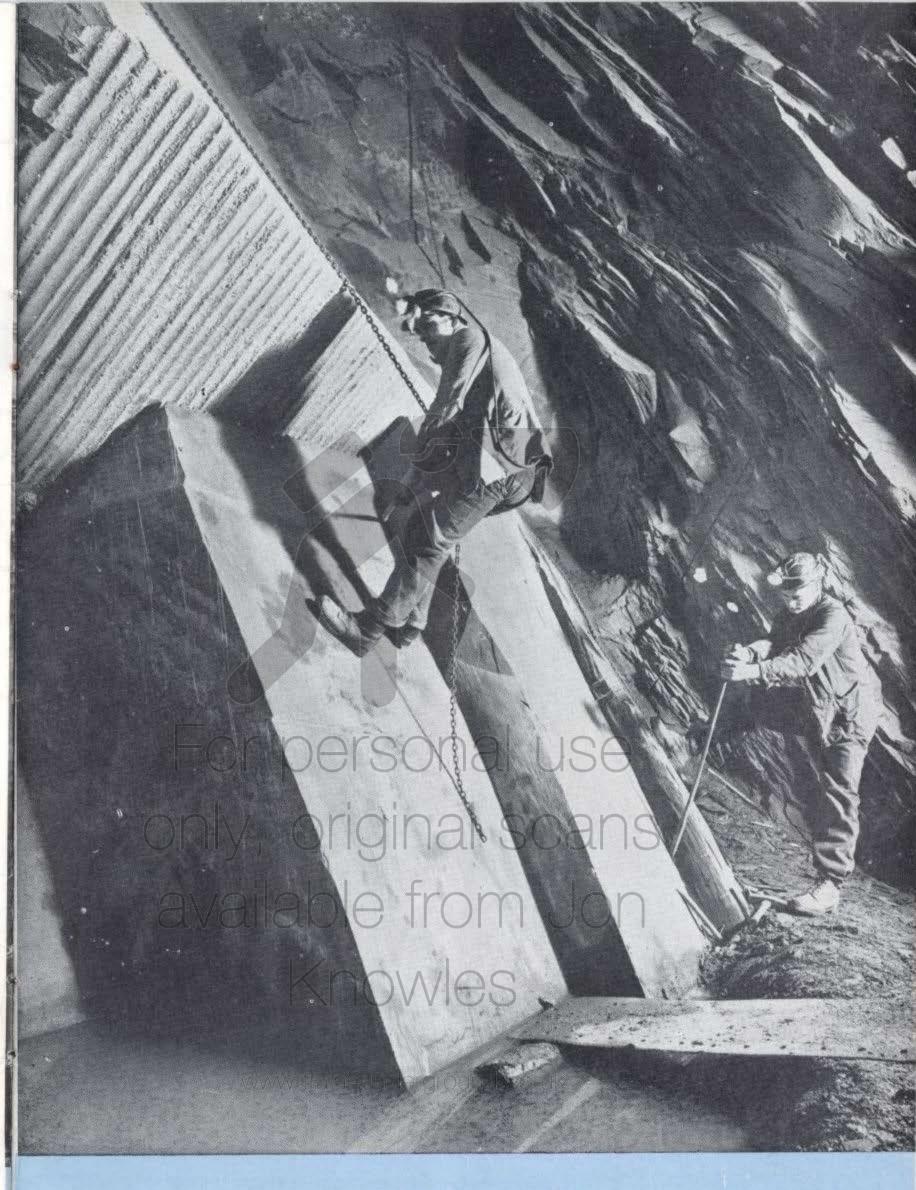
Usually nature herself provides the answer in the form of what is known as a "foot joint."

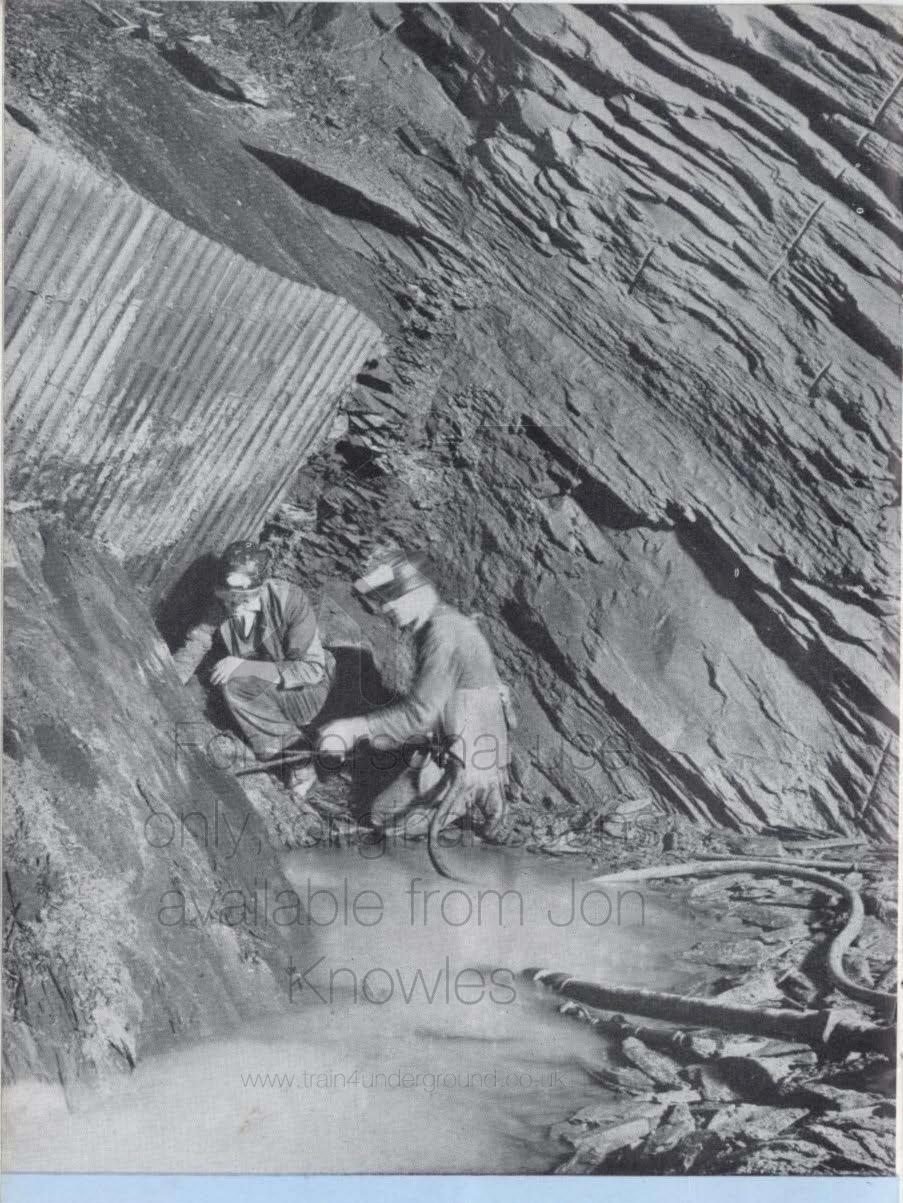
If, however, a joint is not present, and the mass of rock is indeed a solid wall, a foot joint, or its equivalent, must be induced by the "channellers."

#### The channelling machine

The channelling machine, with its multiple bank of projecting spearheads diamond-hard drills, six feet in length-and driven by compressed air, has proved an ideal mechanical aid for this work. The machine chisels a six feet deep cut across the base of the rock at right angles to face of the vein, and, if necessary, along the whole width of the chamber from the free side at one extremity to the edge of the great supporting wall opposite.

The rockman's initial working The rock, they say, "feels tougher." Unplace is virtually in the space provided by the "roofing." The tunnel, constructed by miners, is the first excavation, running upwards, through the slate, alongside





Father and Son partnership, Q6

the rock of the right hand supporting pillar, leaving first a working space at the bottom and thence along the whole length forwards and upwards to the ultimate roof of the chamber. The "roofing" aperture finally emerges in the traffic level of the floor above and thus ensures a free flow of ventilation to the chamber.

The working space at the foot of the rock is sufficient for the start of operations by the two rockmen, who begin by cutting a "free side" on the right hand side of the chamber and then across, progressively taking out the first thickness of slate.

In our picture of the scene in Q.4 chamber (see page 6), in which the width and slope of the slate vein is clearly to be appreciated, we show channellers David Emlyn Lewis and Thomas Davies in the act of dismantling a machine after completing their task.

Most of the bulky equipment is on the chamber floor. The machine incorporates water-cooling dust reduction units. David Emlyn Lewis is standing on staging from which a top cut has been channelled, and is handing down one of the six foot rock drills. When in operation the drills are mounted on a horizontal bar, which is to be seen behind the channeller. The "drifter," as the rock drills are termed, bore a line of holes 2¼ in., or 2¾ in. inches in diameter to the full depth of the feet. Aundergreen.

#### A precision tool

The channelling machine is a precision tool. The drilled holes

are left exactly parallel and in line. The holes are divided only by the merest film of rock. A broaching tool breaks and removes the thin dividing layers between the holes, leaving as the finished job a clean deep cut twelve yards or more across the face of the vein.

Q.4, at the stage at which the picture was taken, was in fact ready and primed for a resumption of full scale working.

Thomas Davies, on the floor of the chamber, has been operating power-driven cutting machines on veins of both slate and coal. His experience of coal mines, however, was not of his own volition, and was as a prisoner of war.

He was out with a field reconnaissance unit in North Africa probing enemy movements on the outskirts of Tunis when his squadron was captured. Until 1944 Thomas Davies languished in prison camp near Naples, but with the approach of the Allied invaders of Italy he was transferred to Germany.

"As soon as the 'Jerries' discovered I was a Welshman, automatically and without further inquiry I was drafted to the coal mines of Silesia to join other Welshmen," he said.

"It was the German's belief that every Welshman must be a miner, and so I became a miner,—that was until the Russians, coming in from the East, threatened to overrun us. It was then that we had to run for it—or rather march. We were force marched 1,500 miles in all. They took us down into Czechoslovakia, then out again



Blocks jostling for position

into Bavaria—this way and that way, until suddenly it was all over and we were alone. The 'Geordies' came up and released us officially."

"Hobbies?" we asked.

"Certainly not walking" was the channeller's reply.

#### Mark of the machine

The precision work of the channellers and the clean-cut effect produced in subsequent operations by skilled rockmen are strikingly illustrated in the photograph on page 9, showing the intermediate stage of production in Q.3.

The serried line of holes cut by machine as a top cut are clearly

seen in section.

A foot joint has been cut along the base. The rockmen, as will be seen, have succeeded in displacing and lowering two heavy blocks from the upper channelled cut. Richard Williams, a rockman with ten years service, and Gilmour Wyn Hughes, 19 years, are pictured tackling the next phase in the process of winning the big blocks.

Their job is to slice off the top of the block, breaking down the fine even proportions into smaller editions of the original and in more manageable proportions.

The appearance of fine precision attained by channellers and rockmen in the production of this big block is not always to be guaranteed or expected. Slate, like most rock, is afflicted by temperament—or, as the rockman say—"snags,"—thus any exactitude which might be achieved is not necessarily scientific.

Gilmour Hughes, who is seen at the base with crow-bar in hand, is a product of our school for apprentices. He completed a three years course as slate-maker before becoming an apprentice rockman.

The practical process

In the practical process of handling and fashioning slates from the solid he learned in the mills all the characteristics of the commodity produced. There, also, he would gain the all-important facility of correct appraisal of the raw material before cutting or sawing and splitting, thus ensuring the maximum yield of best quality slates from a given block. The expert slatemaker must develop an unerring eye for these things, and by deft touch, set out to prove the accuracy of his estimate in his output of slates.

Experience in the mills, handling a wide variety of blocks, inevitably develops an intimate knowledge of types and quality of material calculated to give the best results with the minimum of waste.

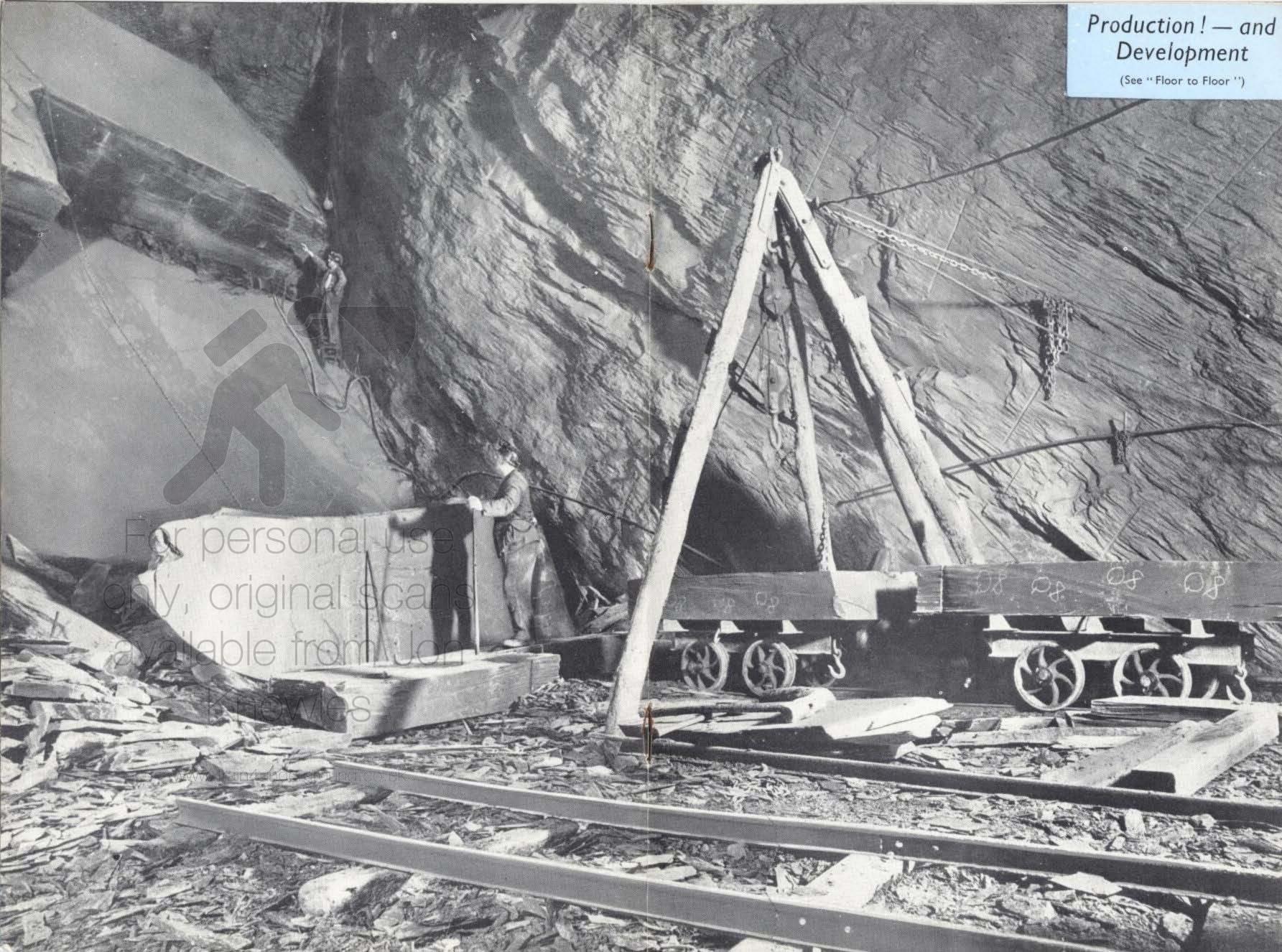
Time-served apprentices have this important advantage when the occasion comes,—as it came to Gilmour Hughes—to try conclusions at close quarters with the slate in situ. The principles they find are unchanged.

Another product of the apprenticeship scheme is rockman John Edwin Hughes, seen at work in Q.6 (see page 10). He partners his

father, R. D. Hughes.

#### Father and son partnership

The father and son combination has been prospering for eight





www.train4underground.co.uk

Peep into Q11, Oakeley

years. In the picture the partners are seen squatting under the cleared free side of a channelled cut preparing a cleavage hole in the side of the rock.

A water-pump—another of the many pieces of equipment drawing power from the ubiquitous compressed air line—is at work in a pool which has collected over the foot joint. Seepage from heavy rainfalls continues long after the depression has passed over the Snowdonian hills, and one of the effects is that which we have illustrated—a temporary inconvenience quickly to be dispersed by pump and gravitation to big sumps and dams strategically placed in the mine. At intervals, or, as necessary the stored water is pumped by our heavy pumping gear through easy stages to the surface, and so into the streams which carry all our surplus water to Cardigan Bay.

While the pump is at work the senior rockman prepares a cleavage hole to receive a controlled charge of gunpowder with which he proposes to crack the block along the horizontal plane.

The top layer, up to the limit of the channelled section, has been won.

In Q.9

The workaday scene in Q.9 (see page 12) is typical of chambers in advanced stages of production. Channellers were at work there long ago. The widening is proceeding and some of the orderly shapeliness of the less developed chambers is absent. But, as the

picture shows, blocks of slate of suitable dimensions appear to be jostling for position on the floor of the chamber.

One block, tilted on top of a bigger "conquest," is being swung round by the air-motor of the crane. Behind and above this block are to be seen at least six others, all cleanly cleft from the widened section of the rock, and which, in turn, will be levered and "craned" down for despatch to the counterparts in the production team—the rockmen's slatemaker partners in the mills.

In this chamber development has reached a stage where it may be deemed necessary later to move forward and beyond the technical boundary, and under the floor of

Rockman William Jones, one of Oakeley's football "stars"





Run of blocks from Q. Hitcher is Dewi Lewis

the chamber above, thus to continue and extend the field of slate winning.

This operation, involving the provision of a natural bridge or bon at the far extremity of the chamber roof on which to carry the traffic level serving the floor above, has been fully described in previous articles in this survey.

The channellers may be required again to assist and facilitate the further advance on the slate.

#### Natural aids

Even at the great depth which is common to the Q floor, natural aids to slate winning are often available. Q.11, which we have pictured over the shoulder of an onlooker at the mouth of the chamber (see page 16) is an example of development carried out by rockmen without the aid of channelling machines.

The picture is interesting, too, for the fact that it shows the nature and purpose of the free side running up between the slate and the wall into the dark recesses at the top of the chamber.

Working in the "roofing" is rockman Morris Hughes, who is seen cutting into the cleft to extend the scope of his operations up to the big unexploited slab of slate on the higher side of the chamber.

The section in the foreground, immediately behind Ronnie Roberts, who is shown wasted into a truck, will be won, too, in due course.

The development here is clearcut and orderly and, as will be appreciated, presages a further long period of steady production.

The rockman's work is methodical, involving considerable and progressive periods of preparation. There is no haphazard hacking and hewing. The rock must be nursed, even cajoled, into giving way before the laws of gravity.

#### Full scale production

The rockman's function is in the nature of a surgical operation, parting chosen sections of heavy material from the mother vein at an acute and difficult angle, using safe, efficient and proven methods of extraction, then to induce the final slide which brings down the block without damage to the floor of his chamber.

How effective this can be is shown to full advantage in our wide-angled view of Q.8 which is featured on pages 14-15.

Here, without the aid of channelling machines and in the strict tradition of manual slate-winning is a fine block newly parted from the solid high up on the smooth face of the vein, and brought down by gravity along the angle of 40 degrees. The big block must be halved, perhaps quartered, by the rockmen to the length and thickness of the smooth-faced blocks awaiting despatch on the trollies.

The massive girth of the vein of slate filling one end of the chamber and the different working thicknesses adopted by the rockmen, Griffith Jones and Caradog Owen, are other features of the scene in Q.8.

Seventeen years of production

The chamber wall, which extends upwards right through all floors of the mine, is shown bared for twenty-five or thirty feet of its length-it extends even further and out of the picture to the traffic level—and shows some part of the original thickness of the The cleared space in the vein. foreground is the floor of the chamber-cleared by dint of the work of two men, relentlessly and painstakingly repeating the process of cleavage and pillaring to take out the huge cubic content of slate which is represented by the space.

In Q.8 the rockmen are about halfway through the task. Before them still stands the formidable mass, as tough, as thick, as plentiful, seemingly, as it must have appeared when rockmen first entered the chamber seventeen years ago.

Rockman and Sculptor

We have touched on the art and artifice in the rockman's craft. It is not necessary to be an artist to become a successful rockman, though in Griffith Jones we have a rockman who is also an artist in slate, and a prize winning artist, too. He is a self-taught sculptor, working exclusively in roofing slate. His hand-carved plaques have won favour at Welsh eisteddfodau and at art exhibitions ground

Alas! for the eisteddfod and the skilled amateur sculptors there does not appear to be much scope nowadays for fine work with chisel

and mallet on the native slate of the Welsh highlands. Even the National Eisteddfod, says Griffith Jones, appears content to neglect the ancient skill.

Our rockman-artist has not abandoned his hobby. While awaiting inspiration for his masterpiece he continues to exercise deftness with the chisel by fashioning paper-thick miniature fans from slivers of Old Vein slate. There are examples of these novelties as far away as the United States.

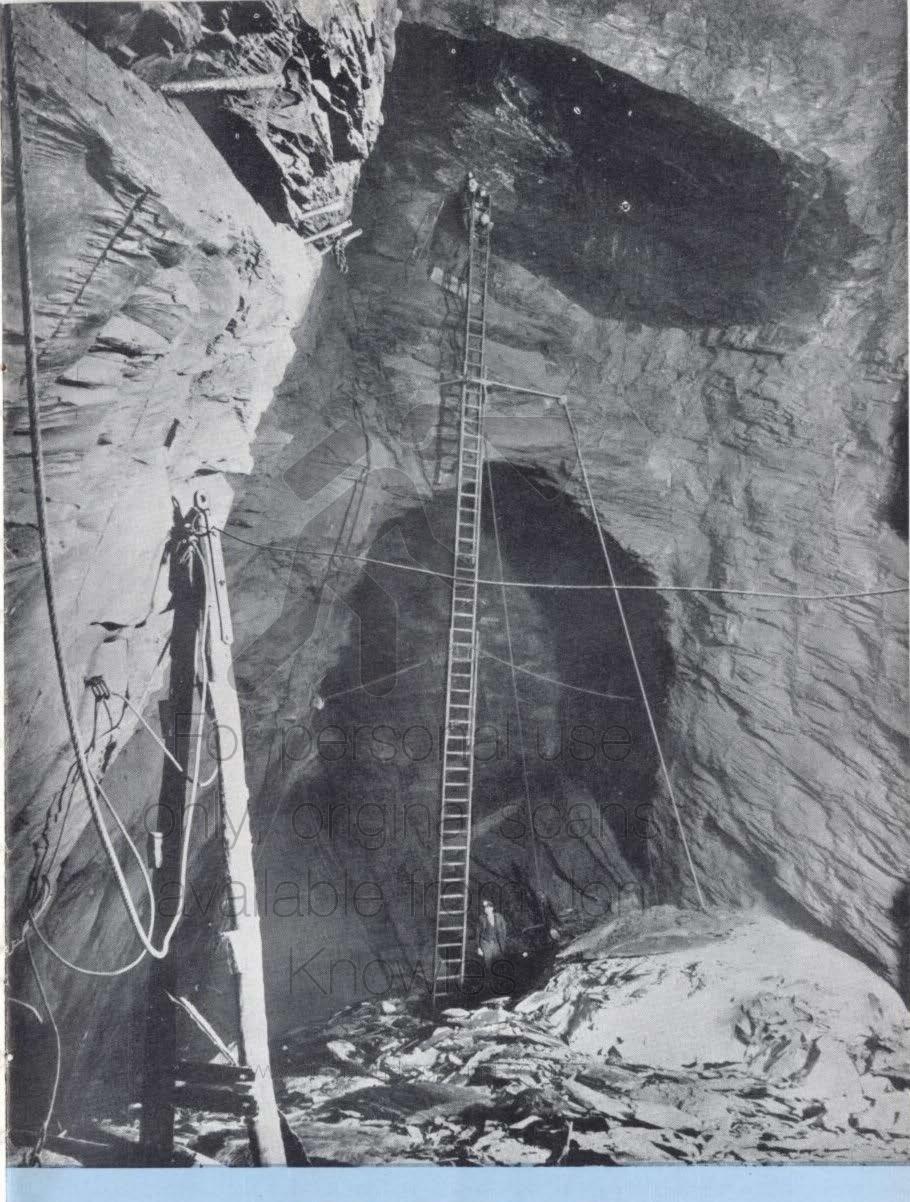
#### Rockman-footballer

Another personality on the Q floor is William Jones, who combines his work as rockman in Q.13 with professional football in the Welsh League on Saturdays.

At 28 years he is right wing player with the Blaenau Ffestiniog Welsh League First Division team. His football career since the war has included first team appearances with Bangor City in the Lancashire Combination and the Cheshire League; Cambrian Coast League football with Harlech; Welsh Deague appearances with Pwliheli and the great Welsh and ex-Everton international centre-half Tommy Jones; period with Portmadoc, and now, as he puts it, "back to Blaenau."

At one period in his career William Jones aimed to leave Welsh League football for the greater prizes across the border and secured a trial with Grimsby Town, then in the hey-day of success as a First Division club.

In this current football season Oakeley Quarries have furnished



. . . fifty-five rungs—securer's "stock-in-trade"

three players in the town eleven, the others being slatemakers D. Thomas, centre-half, and G. Morgan left half. William Jones says of D. Thomas: "I consider him to be a future centre-half for Wales. He plays a brilliant game." Gwyn Morgan, incidentally, was chosen first reserve for the Welsh amateurs who met Scotland on March 5.

#### Miners follow rockmen

Although in the normal course of events the miner's drill is heard first in a new chamber, there are occasions when the miner must follow the rockman. It is when the slate winners have gone, their work, ostensibly, finished, and the chamber left high, wide and empty. While on Q floor such a contingency is necessarily a long way ahead, it was to be found on K floor, one of the higher levels of the underground workings.

There, in K.1, the oldest New Vein chamber on the floor, Cahan was able to photograph miners John Reginald Edwards and Richard Edwards—the men who drove the tunnel for the new staircase from P floor—actually at work winning slate from a position far removed from the popular conception of mining.

The photograph reproduced on the back cover of this issue shows the miners dwarfed against the high wall of the emptied chamber, standing on staging thirty feet above the floor drilling behind a bulge in the wall—all of it good slate. They are seen boring along the horizontal plane at the angle

of the vein. A gun-powder charge later will speed up the good work of development.

A close inspection of the wall will reveal a series of near-perpendicular serrations in the rock. Set equi-distant in layers, some of them almost in line to the chamber roof, they are the tell-tale marks of pillaring carried out by an earlier generation of rockmen, and probably with the aid of hand-operated tools before the general introduction of the air-driven automatic drill.

Rockmen tend frequently to work round geological snags and similar obstacles, thus leaving bulges here and there similar to that disturbing the symmetry of the K.1 wall.

The big bulge in K.1 is expected to yield many tons of good roofing slate after the miners have finished.

#### Security

All aspects of work in the mine are subject first to rigid rules of conduct governing safety and security. Rockmen are encouraged and assisted in the observance of the rules by constant watch and ward of mine officials and other specialists in security.

Temperamental inequalities in rock formation are quickly detected, and it is then that securers James Parry and Tom Roberts take over in the chamber to check suspicions and seek out and remove affected parts in the roof or walls.

In P.11, the chamber in line and above Q.11, the securers had

made a roof survey and were completing repairs by scaling off a suspect section of roof, their platform a perch at the top of a 50 foot ladder.

The picture of them on page 20 shows Jim Parry aloft near the top of the 55 rungs, sounding and removing a faulty layer in the roof. Standing back in safety, under a natural bridge of rock giving on to the working part of the chamber, is Tom Roberts.

#### Pointing the ladder

The ladder is noteworthy not only for its length but for the manner in which it is poised. It stands erect, almost perpendicularly, to reach a point just short of the chamber roof. The only visible means of support are in

fact those to be seen, namely, ropes and chain anchorages. The ladder is tilted slightly forward of the securer to rest in mid-air against a skilful arrangement of ropes and tackles anchored to the roof walls and floor. The ropes also hold the ladder firmly in the erect position, permitting of no movement sideways, though allowing for slight movement forward and backwards.

The securer secures himself at the top, and is thus able to work freely with both hands. Skill and judgement enter exclusively into this work, the practical result of which is to be seen in the debris on the chamber floor—all of it directed to fall well forward and clear of the securer working with hammer and crow-bar.

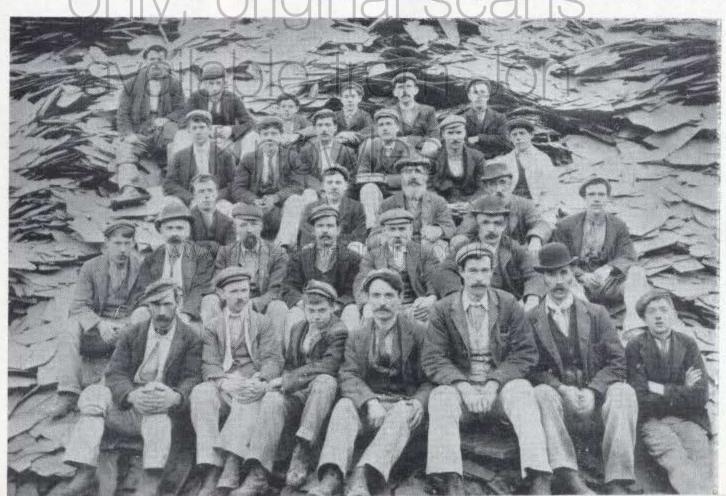
#### BONC COEDAN 1902-3

BELOW is another old print to revive memories. It shows the band of stalwarts engaged at Bonc Coedan, Oakeley, about 53 years ago.

"Caban" is indebted to John Idwal Griffith for this glimpse of mole-skin trousered past. The names have been recalled, as far as possible. We leave it to our older generation to fill in the blanks.

From top, left: Richard Roberts, Bob Hughes (Gors), J. E. Jones (Gloddfa Ganol), Jack Jones (Talcan), John Williams (Llan), Hugh Hughes

(Patagonia), Tom Owen (Pencefn), Griffith T. Williams (Leeds Street), John Williams (Penrhyn), J. Idwal Griffith (Plas Isa), Edwin Jones (Penrhyn), John Williams (Leeds Street), Robert Jones (Bethesda), Tom Williams (Pwllygath), Robert Owen (Glynllifon), John Roberts, Richard Lewis (Square), Robert Tom Roberts, John Williams (Llew), Daniel Owen, John Owen (Penrhyn), Seth Jones (Harlech), Rowland Roberts (Pencefn), Handel Bach, William Williams (Penmorfa), William E. Jones (Gloddfa Ganol), John Jones (Talian), T. Robert Williams.





## QUARRY CLUB

(see News

Top left-Visitors' day. Mr. and Mrs. Harry Cutts examine children's exhibits.

Bottom left—Mrs. Thomas Roberts (right), mother of Medwyn Roberts, Blaenau Ffestiniog artist, viewing part of her son's display of 30 exhibits.







### ART EXHIBITION

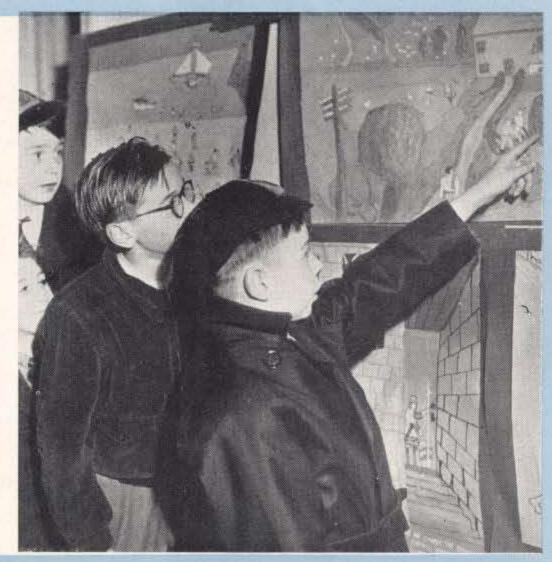
Exchange)

Top right—Another corner of the exhibition.

Bottom right-Young critics.

Bottom centre—Local landscapes find ready interest.







#### Exhibitor Gwerfyl Jones finds Mr. Harry Cutts (Managing Director) an interested listener as well as viewer.

NE OF THE most popular and successful enterprises undertaken by the Oakeley and Votty Club was an exhibition of art held at the Club before Christmas and which jointly featured the talent of quarrymen members and the artistic skills of their children from local schools.

The Ffestiniog Grammar Maenofferen Grammar School and the Glanypwll School combined with the Club organisers to give a display of over 200 exhibits.

The picture on the front page of this issue of "Caban" epitomises the wide variety of the work submitted.

Revealing Display

It was a most revealing display, occupying both the billiards room and large concert room, and one which found favour with a host of visitors as well as members.

ector, and Mrs. Cutts, paid a special visit to view the exhibition. Our pictures show that they were soon lost in admiration of the wealth and versatility of the talent displayed.

## NEWS EXCHANGE

## Quarry Club Art Exhibition

The works of the amateur artists ranged through oils, water-colours, pen and pencil sketches, and etchings, and were, for the most part, the product of a highly developed natural flair for art forms.

Eight charming pencil and crayon drawings were exhibited by an incline engine driver-Edward Williams, who operates the Tuxford incline at our Votty mine.

#### Water colours

D. R. Jones, a tipper on the same level at Votty, also sent some exquisite sketches. Harry Daniels, a traffic man at Oakeley, revealed a striking aptitude for delicate water-eolour studies of local mountain scenes and wild life.

Edgar Daniels, an Oakeley platelayer, H. P. Roberts, stonemason, Votty, and Philip Owen, a slatemaker at Bonc Coedan, Oakeley, were among others adding lustre to the roll of artist-quarrymen in our midst.

The children's work was well re-Mr. Harry Cutts, our Managing Dir-presented and was attractively displayed by the hardworking Club committee. "Caban" joins in the general congratulations which have been accorded the organisers for their public-spirited enterprise.



#### "Oakeley Wheelers"

WITH the road map of Wales on the blackboard and a member's new machine on the stand, Mr. E. V. B. Jones, a teacher at the Maenofferen school, is seen in our picture (above) lecturing on the care and maintenance of the bicycle to our first cycling club for apprentices.

Sponsored by the Oakeley and Votty Club, the "Oakeley Wheelers," as they are known, are taking up cycling as a sport and healthful recreation. Under the tutorship of Mr. Jones they are learning all that is possible of places of historical and other interest in Wales with a view ultimately to organising extended cycle tours in the Principality. Map reading, road safety and road sense geography and a dash of Welsh history, all add up in class to a thorough preparation for the holiday awheel.

Stanley Wyn Jones, Oakeley apprentice slatemaker, represents the "Wheelers" on the Club committee, Cynwal Wyn Jones, slatemaker, Oakeley, is secretary, and Hermon Jones, another slatemaker apprentice, is treasurer of the enterprising group.

#### Caban "Q and R"

MEN from both Q. and R floors are pictured on page 2 in their rock-girt Caban.

In the picture are John E. Hughes, Danny Kashem, Tony Roberts, Ronald Roberts, Geoffrey Payne, Benjamin Jones, Thomas O. Davies, Maelgwyn Owen, David S. Roberts, Robert D. Hughes, Robert Hughes, Thomas E. Jones, Dewi G. Lewis, David Roberts, Morris E. Roberts, Richard Stoddart, John D. Roberts, William R. Parry, Gilmour Hughes, Gwynfor Jones, John M. Jones, Ellis O. Hughes, William G. Roberts, Frank Jones, Caradog Owen, David E. Lewis, Griffith Jones, William Jones, John S. Jones, Richard V. Williams and Morris Hughes.



Miners at work! (See Floor to Floor)

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