

## **JAKOB SCHWARZ, A FOREST OF DEAN UNDERGROUND QUARRYMAN**

Arthur Price

Although the vast majority of stone was obtained from open quarries in the Forest of Dean, in the past it was occasionally quarried underground. Steeply dipping workings under Blakeney Hill are in Devonian Old Red Sandstone and there, Tom Davis as a young man helped quarry stone in the 1920's. He was 81 in 1993 and before he died his memories were recorded by David Priddis and published with many photographs in *The New Regard* (1). Previous to the present article this was the only published account of the memories of an underground quarryman in the Forest of Dean.

At the Bixhead quarries in the middle of the Dean coalfield basin, the horizontally bedded, Carboniferous Pennant Sandstones have been worked for hundreds of years and the stone is justifiably still in great demand today. From 1953 to c.1957 the last underground quarry to be operational in Gloucestershire was located there.

Jakob Schwarz worked for several years in the underground quarry tunnels at Bixhead but left shortly before they ceased work. As far as is known, he and a neighbour Robin Aston, are the last remaining persons alive today to have once mined stone in Gloucestershire. At first sight it seems unlikely that a person of German descent could come to be quarrying underground in the Forest of Dean. However, after spending several hours with him on the 20<sup>th</sup> November 2004 at his home in Broadwell, his fascinating account of how this came about was revealed. This article has been written up from notes taken at that time, subsequently checked by Jakob and expanded on a further visit in December 2004. It is presented as far as possible as told. Additions inside square brackets [ ] are my own and explain a quarrying term not at once obvious.

Jakob Schwarz told me, "I am seventy-eight years old and was born in a small village called Brestowats in the district of Bannat in Yugoslavia. My forefathers were farmers and came from Germany in about 1863 to settle there. I had four sisters and my mother died when I was two years old so I was bought up by them and a stepmother. Towards the end of the war I was conscripted into the German Army and served for about six months before being badly wounded in the hand. I was in hospital in Austria till August 1945 when I became a P.O.W. Ten thousand of us were sent to Italy, four thousand were eventually sent back, while the rest of us were transported to England in two ships. I remained a P.O.W until 1948. Back at home at the end of the war, my family were arrested and sent to camps, where a sister and one of her children died in 1946. Having heard of the bad things that were happening in Yugoslavia and as the family eventually left the country, there was nothing to return to - so I stayed in England. Today all my sisters are dead but numerous descendants live in Germany and Austria and we have been over to see them.

As a P.O.W I learnt to speak English from Irish building site labourers while working in Bristol. After being released I married in 1948 at Lydney Registrar Office. Needing a house to live in I spent three years as a farm labourer at Park Corner Farm, Cirencester, and a further year at Waterlane Farm, Bisley. In 1952 I was out of work and as farming wages were not very good I came to the Forest of Dean and settled down not far from where I live today. In 1954 we moved to this address (12 South Road, Broadwell, Coleford) and have two children. One of whom; Phil, is a Free Miner.



Jakob Schwarz

There was a job going at the Bixhead Quarries working sandstone for the Forest of Dean Stone Firms. The owner was Scott Russell (who I hear has just sold the business) and the manager was then Mr Jack James who lived at Howard Road in Broadwell. There were several quarries being worked at Bixhead: Pullin's, Old Quarry, Middle and Top Quarry, which is still being worked today by three men. At first I worked in the open workings along with about twelve other men. It was the quarry on the left as you come up the track from the road [B4226, Coleford to Cinderford Road. NGR of quarry SO.597109]. On the right Pullin's Quarry was then being worked, but is now abandoned and partly filled with water. I learnt the techniques of quarrying from Bob Latham [Snr]. Bob used to lead the horses taking huge blocks of stone down the Bixslade dramroad to Cannop Pond Stone Works, but the dramroad had been closed some years before I arrived. During working hours, which were from 8am till 5pm plus Saturday mornings, I never once

went down to the stone works or had any thing to do with it. We had two ten-minute breaks, during which it was not worth coming out of the quarry, and half an hour for lunch, usually in a shed situated just back from the top of the quarry. If it rained we were put on half pay. This was for £6 to £7 a week before tax. There was no overtime. I walked to and from work, living only about eight or nine minutes away up the hill.

There was about sixty foot of overburden to take off the quarry face before you came to the deepest and best quality dimension stone beds. Part of the overburden was cast aside as waste, some could be used as ordinary building stone; some went to make tracks or roads. One particular layer produced what we called '*flat stone*', these were flakes up to two tons in weight. At one time we sent out ten lorry loads a day down to the River Severn at Minsterworth where it was used for protecting [rock armour] the riverbank from the tide. The best masonry beds were coloured grey but were blue inside when cut open. There were four of these, although they could run out to nothing sideways, they were anything up to six feet deep on bed. Usually there was a two-foot deep bed, one three, a six-foot and a four-foot bed although not always in that order. Cranes did most of the hard work:- to pull and lift the blocks from their bed using a '*dog*' [a small hook]. It was easy to drill '*plug and feather*' holes [plug and feathers are used for splitting blocks of stone. Two feathers are inserted in each hole, each being thicker at the bottom end and half a circle in cross section. The tops were bent over so they would not slip down the drill hole. In between them a slim wedge (the plug) was inserted.] in the open or to raise a block slightly using two steel '*plates*' [used to protect the stone while hammering in wedges] and a '*chisel*' [wedge about 9" long by 2" wide]. After lifting out of the quarry the blocks were stacked to one side, or loaded directly onto lorries to be transported down to the stone works where the masons made gravestones, steps, lintels etc. Below the thick beds the layers became thinner again and if you went much deeper you would have to start pumping water. [Details of quarrying blocks are explained in more detail later.]

The foreman when I started was George Cooper from Christchurch but he soon retired and is now long dead. Maynard Thomas became foreman of Top Quarry. He always wore a long overcoat and it once saved his life as he fell forty to sixty feet from the top of the cliff face.



Bixhead quarry: tunnel entrances

As he fell the overcoat ballooned out like a parachute and slowed him down just enough so that he survived with only bruises.

In the corner of the quarry was an old underground working dating back I think to the 1920's [Closed late 1942]. A lot of good stone came out of it, and I understand it had been very profitable for the stone company, some being sold in London. So it was decided in 1953 to start another underground chamber close by. Although the old entrances were open

at the time I worked there, I never had time to go in, too busy; I understand it is partly flooded and now blocked off. Six of us were told to start undermining the quarry face to get at the *'big stuff'*. Both my workmates are now dead; they were Bob Latham [Jnr] and 'Taffy' Morgan Pearce. For safety it was planned to have two entrances that would join underground. They were known as Tunnel One and Tunnel Two. Robin Aston and Jack Priest and a crane driver whose name I cannot remember worked Tunnel One. We worked in Tunnel Two. Sitting not far back from quarry face, was a black tool shed in which was a compressor, with steam cranes placed on either side. There was a third steam crane working in the nearby Top Quarry and an electric crane in the Middle Quarry. Opposite the entrances in our quarry was another larger electric crane used for the surface working. It could haul out a twelve-ton block. Steps were cut down the high quarry face, which is how we went up and down to work; there were no safety rails in place at that time.

We had to learn as we went along and there was a rivalry between the two gangs as to who could get the most work done. We didn't interfere with them and they didn't with us! First of all we had to excavate the two tunnels in above the masonry beds about forty feet in length to get away from the quarry edge. This was done with hand held 'Vet' or 'Det' [?] air drills, worked and controlled by air pressure via air hoses let down over the quarry face from the compressor above. To lessen the dust another pipe fed down a supply of water to the centre of the drill bit. It was heavy, noisy work, and wet too when the drill bit stuck in the hole and water shot back into your face. A ring of shot holes was drilled, the drills being in lengths of two, four and six feet. The drill holes were aimed slanting upwards at the top, one straight into the face in the middle and slanting downwards at the bottom. Some drills were tungsten tipped others were ordinary blacksmith sharpened. There was a blacksmith constantly at work in a little shed sharpening pick-axes and drills and mending other equipment. After blowing this first ring we went into the sides to make a proper square face. As the tunnel advanced, it was made eight feet high. We would try to blow the trimming rounds back into the tunnel so as not to have rocks shoot out into the open quarry or injure what had already been completed. Sometimes the side of the tunnel ended in a *'key'* [a clay filled vertical joint], then we would only have to bar it away from the sides. To hold up the roof we drilled holes directly upwards and put in roof bolts; we must have eventually put in well over a hundred. The bolt-holes were drilled dry by fastening the air drill into a rigid frame and winding it into the roof using a cogged wheel. When finished we hammered in a bolt, again using the drill. It worked something like a rawl-plug. A flat plate was sometimes put over the protruding end and a nut was always tightened on. The boss told us to put in as few as possible as they were expensive to buy. However we did it our own way, no one wanted the roof to fall in. Some times the



Crane at Bixhead quarry

roof bed would run out, [became thin bedded]; then it might fall out of place. There was a bad fall once but no one was hurt.

For blasting we used '*jelly*'. This was brought from the magazine, which was on the left as you go in from the road: as you could only leave about five pounds at any one time in the black shed. It was nasty stuff, would burn your hands and smelt of rotten eggs when blown. I recall it came in two sizes, I think two ounce and six ounce cartridges. From six to eight sticks were pushed into each hole with a wooden stick, a broom handle or what ever else came to hand. A detonator was pushed in with the last stick. We then rammed in clay, some collected from the '*keys*' and bed partings,

but mostly we sent out and had it delivered from the red sandstone quarry at Mitchledean. Some times a fuse was used to set it off, but more often we used electricity; it was a more sure way of ensuring the charges went off. There was nothing worse than having a misfire, as we were not allowed to return for twenty minutes before looking for what went wrong. We went out of the tunnel and hid round the corner out of the way on either side when blasting. There was a metal drum with a small arched door entrance you could take shelter in but we did not use it. While one tunnel was being drilled the other was blown and being cleared out. You had to wait awhile for the fumes to clear, as they were toxic. The foreman came up to say his office was shaking with the explosions; as we were at that time trying to quarry into the old workings. We never did connect them. Once we put ten sticks of '*jelly*' in a drill hole but for some reason it had no effect at all.

We worked for nine months clearing out the whole of the two tunnels and joined them underground via a small walkway. Our tunnel was on the left looking at the quarry face and we cleared the roof working in and towards the left. The other tunnel worked out inside to the right. Once we blew down so much rock that it took a fortnight to clear. Two huge chambers each over sixty feet wide were made and there were no pillars, only the central rib of rock between the two workings. Mr James came up every morning to see how we were doing. On a few occasions he would clear out all the loose change in his pocket and distribute it amongst the men. Perhaps it was only £2 in total but it seemed a lot to us. The chambers were lit by light coming in from the entrances and an electric light cable was also laid on, only using about two or three bulbs that we could move around as wanted. At any one time a lot of the chamber remained in darkness; we did not have individual mining lights although we did have a carbide lamp somewhere that we never used. The foreman Maynard Thomas often carried a carbide lamp. We were always short of everything and had to make do with whatever came to hand. I never wore a safety helmet, only a woolly hat. It was usually wet underground, after heavy rain the roof would start dripping and it would take about three weeks to clear. Sometimes you could work in the dry, at other times you were forced to work under a drip and became wringing wet and had to remain so until getting home.



Quarrymen at Bixhead

The stone removed from the tunnels and chambers was all sold, mostly plain walling stone. There were no wheel barrows; we threw the stone into low metal boxes that were hooked up to a steel wire rope and winched out by the cranes. The gantry of the cranes reached over the quarry face and the wire fed down through a huge pulley wheel fastened to a stone block, which turned the rope through ninety degrees into the tunnel so as to enable a straight pull and avoid the rope scraping the top of the tunnel entrance. To get the boxes into the rear of the chambers inside the wire had to be fed through another smaller pulley fastened at the back of the chamber and then

outside to the waiting box. We could move the boxes slightly with bars, but not far. All instructions were shouted, we shouted up to a young chap called Johnny Jacobs. He would relay the instructions to the steam crane driver who came from Parkend. When not wanted Johnny would do other labouring jobs in the quarry. The steam cranes used coal for fuel and were actually quieter than the electric cranes and more responsive to control, you could take the strain slowly on a box or stone block and pull inch by inch, while the electric crane would jerk and clatter noisily. I had two boxes full of building stone and built the wall in the front of my house with it. At the end of a days work we would put the tools into the box and leave it hoisted up in mid air, well off the ground. They still do this today. Sometimes the tools were put into a wooden chest in the shed; there was never any trouble from pilfering or vandalism.

Mr James wanted the best stone fast and we were fed up lying on our backs drilling so we started to quarry out the floor so as get at the big blocks. When starting the loose rubbish had first to be cleared from the top of the blocks so you could find the *'keys'*; we would look for a block that had two keys running together towards the back of the block which meant it was easier to lever out. Once a block had two free faces and was loose on its bed you could easily jam the *'big bar'*, which was about six to seven foot long and weighed one hundredweight, into the *'key'* and move the stone. If the block was tight on its bed we would find a horizontal crack or pick out a slot at the bottom of the block and insert two metal *'plates'*. The plates were about nine inches long by three inches wide and a quarter inch thick. In between them a *'chisel'* was sledgehammered in to raise the stone a little. Then the bar could be used to raise the block still further, packing the gap with a stone or what ever else came to hand. This gave room to put a chain around the block and the crane could pull it out into the open air. You had to watch closely all the time, once the crane started pulling you had to get out of the way pretty quick.

The foreman Thomas Maynard came every so often, he would decide what size blocks were needed by the masons, this was only for widths; as the lengths we could do nothing about. There was no visible grain to the stone. To split a block was easy, a series of holes, about ten to twelve, were drilled in a line down from the top right down to the bottom of the block. Each hole took about five minutes to drill. Then into each hole two *'feathers'* about a foot long were placed with a row of *'plugs'* placed in between. Then with a sledgehammer we would go over the plugs six to seven times gradually tightening them down. Then light a cigarette and wait. The block would split cleanly in two, leaving a half section of each drill

hole showing on either side of the new blocks. The largest blocks we brought out were about ten tons.

If you came to the face of the chamber and there were no '*keys*' to lever away the block it would have to be blown out. This time it was different as space was restricted because of the side walls of the chamber. Getting as close as possible to the face a single hole was drilled, again down to the bottom of the bed, taking care not to spoil the top of the block below. We had to drill right down through the block otherwise it could blow inwards and the block would be ruined. We did not use water for these holes as it was too much trouble to fix up, so it was noisy and dusty. Into the hole we forced a '*rimmer bar*'. This was a blunt ended round sectioned bar just over six foot long. Into the working end a two-inch long hardened thin metal plate had been welded which protruded slightly from the sides of the bar. This was aligned in the direction we wanted the block to split. One man would hold the bar steady while the other two took turns to belt it down with sledgehammer blows. Most of the dust would be forced into the crack being made but occasionally the hole needed '*spooning*' out. The spoon was a thin wire on the bottom of which was fastened at one side a disc set at right angles. When all was ready a dry rag was pushed down to the bottom of the hole, then it was half filled with coarse black blasting powder. We only wanted to crack the block, not blow it to pieces, which is what would have happened if we used gelignite. Then the fuse went in with another dry piece of rag acting as a cork and protecting the powder from sparks when the rest of the hole was rammed down with stone dust. A foot length of fuse was left protruding from the hole, which we lit. I can not remember any danger with black powder, sometimes we stood on the block, there was hardly any noise, just '*fwoop*', and the block was split, the pressure going out along the cut made by the '*rimmer*'. The whole process would take about one and a half hours. However we were lucky if we could get out one block a day; in the open quarry they could do perhaps four blocks a day.

During the Suez Crisis a chap working at the Red sandstone quarry at Mitchledean was called up so I was sent over to replace him and was there for about three weeks. All the beds were dipping steeply so the method of quarrying block was different. A rope was lowered down the face from above and you would climb down and sit on a small wooden plank fastened on the end. All the drilling to split the blocks had to be done from this sitting position. You had to watch out when they slid down the quarry face. At the bottom of the face was a wooden crane, it was worked by two men winding on handles.

Quarrying was hard work so I decided to leave; there were double the wages to be had at the Lydney Trading Estate. I was three years working for Cellafoam, I thought it the height of luxury when I was able to buy my first television. However the chemicals got on my chest so I left; was out of work for a week; then became a plumbers mate for four years. Eventually I had my own building, plumbing business called Watfel Ltd retiring in 1989. I have never been back to the quarry since leaving but remember my time there very well."

### **Reference**

- (1) David Priddis, Journal of the Forest of Dean Local History Society, The New Regard. No.10. 1995, pp. 4-22.

### **Acknowledgement**

My thanks are due to Paul Taylor who was instrumental in surveying the old workings and drawing the survey. Gordon Higgs and Lionel Walrond supplied photographs of the surface cranes and quarry