

3. SINGING RIVER MINE - A CALAMINE WORKING AT SHIPHAM

by (hris Rihards

&f writing this report, I have endeavoured to present the basic **details** relative to the investigations which am at present talking place beneath the West Mendip village of Shipham. With a cumulative extent approaching 3,000 ft, it forms not only the largest known metaliferous mineworking on Mendip and its outliers, but forms the *site par excellence* for the study and interpretation of Mendip mining techniques relating b the ^{raising} of calamine - the carbonate of zinc used for mixing with copper to produce brass.

Explorations commenced on 28th May 1971 by two members of the Axbridge Caving Group and Archaeological Society, namely, Marie D. Clarke and the author. Also Russell Clarke, a member of the same society, helped with numerous surface duties. It soon became apparent that Singing River Mine (previously forgotten and neglected by cavers) was in fact a remarkable monument surviving from an extinct Mendip industry worthy of conservation. Thus to protect the mine from being blocked by rubbish a substantial steel gate has been constructed over the entrance. One only has to visit the countryside surrounding Shipham, Rowberrow and Winscombe to see how many mines have been filled in or capped over. Whole areas of "gruffy ground" have vanished beneath reclamation schemes. Therefore safeguarding the entrance to the Singing River Mine was by no means an unnecessary action.

The first written record of mining in the hills around Winscombe, Rowberrow and Shipham dates back to 1598 but lead mining possibly dates back to the Roman period, calamine mining not until the sixteenth century. By the middle of the seventeenth century mining was well under way but it was not until the years of the following century that the industry reached its peak which continued into the nineteenth century.

It was in these palmy days that Shipham and Rowberrow became the centres of the Mendip calamine industry. Almost the whole of the neighbourhood was given up to the mining; the mines were not only on the land but actually in the streets, the courtyards and even in the houses! With almost the whole area being given up to mining, it did not seem to have been particularly prosperous for the miners. Poverty, brutality, violence and wretchedness were rife in the time of the industry at its peak. The labours of the philanthropist, Hannah More of Wrington, are still remembered in Shipham today. For a time she did much to help the poor miners and their families.

As the middle years of the nineteenth century approached a decline of the Mendip mining became all too obvious brought about by the lowering of tariffs on imported ore as hitherto Mendip mining had existed due to the protection by high import duties on foreign

ore. Gradually, the miners turned to agriculture or sought employment in the Charterhouse Lead Works. With this change the rowdiness of the former days died out. In 1896, a Welsh firm became interested in the area and sank shafts in Shipham and Winscombe parishes in the hope of restarting the Mendip mining industry. However, their attempt was unsuccessful.

In the early years of the mining industry there would have been abundant ore at the surface so as to preclude any elaborate underground workings, but as time went on, and fire was succeeded by gunpowder for breaking rocks, the miners dug deeper in search for ore. Ultimately, certain mines grew so deep that during the nineteenth century the use of stationary engines for hauling ore up shafts was introduced although it was never common. The apparatus in common use, however, was no more than a simple windlass and bucket. The calamine was treated on the spot and at one time the sites of four calamine ovens existed but today it is not known where they are with certainty.

Location of Singing River Mine

Singing River Mine lies beside a tumbled wall at a point about 180 yds. SSE of the centre of Shipham Square. The National Grid Reference is ST 4447 5736. Just nearby is the so called "calamine oven" referred to in Cossons in 1967 (see reference below). Recent thought, however, doubts the validity of the identification of the "oven" (Gough, personal correspondence 1971). In the fields around the entrance to the mine, traces of other shafts are still visible some of which have been capped and filled in well within the memory of persons still living. Many of these shafts must have at one time entered the Singing River Mine system.

Geological Notes

The lead and zinc ores which brought to the Shipham, Rowberrow and Winscombe district the intensive phase of mining outlined in the historical notes above are contained within the Dolomitic Conglomerate (Triassic) which fills a deep steep sided depression cut into the heart of the Blackdown Pericline. The depression is excavated mainly in the Old Red Sandstone (Devonian).

The sandstone, as far as the miners were concerned, was a menace in twp ways. Firstly, the sandstone is extremely poor in minerals *in this area* compared with the Dolomitic Conglomerate. The rarity of workings in the sandstone confirms this. Secondly, water can generally pass through the conglomerate and along the unconformity between the two rock types but the underlying sandstone forms an impermeable barrier (although not a complete one) to percolating water and to streams. In this arrangement, water will collect in, the basal regions of the conglomerate to form a level of saturation at which depths the miners are troubled with water. The depth at which the saturation level is reached is dependent upon the position of the mines in relation to the 'edge' of the buried valley. Singing River Mine, being near the southern edge, reaches static water at 70 ft. A **mine situated about half a mile to the north would strike troublesome water at a depth much greater than the above stated figure. In that area a mine 300 fL deep once existed (Knight, 1915 and 1967, pp. 184- 185).**

Mineral Veins

To discuss the actual mineral veins, a glance at the geological map shows at once that the dominant trend of the lead and zinc veins is WNW to ESE laced across the mineral host rock, the Dolomitic Conglomerate. The Singing River Mine follows the same axis. In the mine, calcite (CaCO_3) bounds the outer parts of the **vein** whilst lead sulphide (PbS), blende* (ZnS), and calamine (ZnCO_3) occupy the central section.

The minerals occur in pre-existing voids in the conglomerate, e.g, fissures and tiny cave passages, but also there must be instances where the minerals have actually replaced the rock in metasomatic fashion. The presence of WNW - ESE faults seems to govern the major trend of the veins in Singing River Mine.

Singing River Mine

The system of galleries can be divided for convenience, into four section or series, viz. Entrance Series, West Series, East Series and the Great Hall Series.

The Entrance Series is that located around the entrance shaft as the name implies. This series, a complicated maze, is aligned along the usual axis of WNW - ESE and is connected to the other series by a North-South gallery, these series having a common entrance at the end of the North-South gallery referred to above.

The entrance shaft is a typical of the Shiphams Shafts in being perfectly round, about three feet in diameter and partly walled with drystone walling sometimes in good condition. The shaft entrance is 35 ft. deep but before it was used as a rubbish dump, it must have been 60 ft. deep. From the shaft formerly four galleries lead off each diametrically opposite and superimposed on each other, two lead to the WNW and two to the ESE. Nowadays, only the upper two galleries from the shaft can be entered but lead to the same places as the lower two at one time did.

A feature of the entrance series is the form of the galleries showing the method in which the ore was extracted. The miners, on encountering the vertical vein, followed it upwards and downwards widening the gallery to a dimension beyond the vein Wall more than it was necessary to work in. To facilitate working the ore, the men often left rock spans across the gallery. Bore holes are numerous being about 2.5 cm. in diameter. The way from the entrance series to the other systems of passages known as the West, East and Great Hall Series is through a difficult passage although when the mine was being worked it must have been a relatively easy way through. Jammed boulders and rubble in the gallery (which is tall and narrow) have caused an almost total closure of the gallery. Entry to the further series is gained through a tiny chance hole above the main gallery which at that point has been totally infilled. Beyond the little hole are large galleries leading roughly West and East respectively to the West Series and to the East Series.

The *West Series* is a maze succeeded by a long sinuous gallery or a set of galleries referred to as the "Stream Galleries" heading WNW and descending at a very gentle angle to a point 330 ft. WNW of the entrance to the mine. The galleries channel water in that direction with the stream sinking into an impassable cave passage at the end. Off the main route, side workings exist and flooded workings lie below the stream level. Into all parts of the West Series shafts have been sunk from the surface. Some are choked about 30 ft. up whilst others have been completely filled up so as to form a 'delta' of rocks and mud extending into the galleries. The galleries of the West Series show great diversity in form from places, for example, as in the 'Stream Galleries', where the gallery can be up to 12 ft. high and 6 ft. wide at the base, to other places in the West Series where it is just possible to crawl on all fours. Where several galleries meet from various directions there is a chamber at the intersection. This happens here in the West Series, in the East Series and in the Entrance Series.

Of more complicated character is the *East Series* forming a perplexing maze. Many routes diverge off East Chamber in all directions, the lowest passage having a foot or two of water on its floor with flooded workings beneath. The water in this passage provides the source of the water flowing in the Stream Galleries in the West Series. If it were not for the choke of boulders at the Western end of the canal then only 30 ft. onwards or less one would enter the upstream extremity of the Stream Galleries without passing through the West Series maze. This is what the miners evidently did but when a shaft was filled in, which entered the roof of the long stream passage, the 'delta' of boulders flowed into the passage to render a physical connection impossible between that passage in the East Series and the upper extremity of the Stream Galleries.

The character of the galleries in the East Series is every bit as varied as those in the West Series ranging from passages easy to walk into to tiring low passages. In some, one wonders how the miners could have possibly worked in them, some of the passages being so tortuous. At the Eastern end of the East series a shaft about 70 ft. deep enters in the roof to a lake except in a prolonged dry spell when the lake dries up.

Beyond the lake is the *Great Hall Series* only enterable in dry weather due to deep water in wet periods. The Great Hall itself is perhaps 100 ft. long and its height and width contribute to it forming indeed a spectacular feature with a waterfall cascading down the Eastern wall. However, the Great Hall is not the result of mining, nor is it a natural cavity. It is a huge underground reservoir blasted out before 1920. In the desire to augment already used sources of water for the surrounding villages, the men from a firm of borers, Clements of Easton, opened up an old mineshaft (that marked on the 2 1/2" map of the area ST 4449 5736) and then worked eastwards following, no doubt, the old mine workings blasting the Great Hall out as they went. When the underground work was complete, and after carrying a bore hole down to a depth of 200 ft. from the surface, they erected a pumphouse over their shaft and the mine yielded 60,000 gallons per day. The pumphouse was pulled down

about two years ago when the shaft was capped. Their bore hole can be seen passing through the mine and part of the pumping apparatus exists at the bottom of the shaft. The short holes made by these "water men" can be easily distinguished from those made by the miners and by the farmers' larger shot holes.

Thus in this part of the mine, the miners' galleries have been destroyed in places but they still exist at the high levels above the level where the "water men" began to blast out their reservoir. It is these higher workings which extend onwards, but to date (September 1971) have not been explored, and therefore they provide the places through which the mine could be extended, and we hope lead into vast networks of galleries of which Singing River Mine must be no more than a mere foretaste.

* not worked until the 1800's.

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