

GENERAL HISTORY OF WELSH MINING

1. INTRODUCTION

Mining in Wales and the borders has taken place from the Bronze Age right up to recent times, although there is no longer any large scale underground mining carried out in the area. It would take many books just to cover the known facts so this is only a general summary. The reader can find out much more detail by referring to the many publications available.

2. OVERVIEW

a) Prehistoric to Roman

Research has found that mining for copper took place during the Bronze Age around the Great Orme, Cwm Ystwyth and Llanymynech. Originally these would have been surface excavations but they soon had to follow the deposits underground as the ore became exhausted. Tools were very primitive and consisted of stone hammers and bone/antler picks. It was metals that attracted the Romans to Britain and it has been found that they mined for lead at Dolaucothi and copper at Llanymynech. It is probable that they used other sites as well but subsequent re-working has destroyed most traces of their excavations. Wales must have been an important mining area for them since they erected a lead smelter at Flint. They were also interested in the silver which occurs in galena (up to 50 ounces per ton) and they had the skill to remove this. Iron tools were introduced by the Romans, who used local slaves to work the mines. A technique much used was fire-setting, whereby a fire was lit against the rock face and later quenched with water. The heat caused the rock to expand and the water contracted it quickly, thus causing it to split and allowing it to be removed by wedges or picks.

b) Medieval

Mining continued in a small way during the medieval period, mostly by means of bell-pits. These were shallow shafts with short chambers off at the bottom. Lacking the necessary technology, miners found it easier to sink another adjacent shaft rather than extend the workings. Such old workings can be identified by lines of in-filled shafts and spoil heaps. Coal was first worked in this way in Clwyd, in what was to develop into the North Wales Coalfield. Mining tools and techniques were still primitive at this time, with little advance since the Romans.

c) 17th to 18th Centuries

The late 17th century saw the introduction of gunpowder and this revolutionised the industry. By hand drilling shot holes in the rock and filling them with gunpowder, a great deal more rock could be removed in a shift. It allowed workings to go deeper but this meant pumping out water. Early pumps were very primitive, mainly the rag and chain pump. One event from this century concerned the mining of silver. It had previously been jealously regarded as the property of the Crown and strict conditions were attached to its extraction. During the 1620's 50,000 worth of silver bullion was sent to London from Welsh mines and it is said that the army of Charles I was equipped from Welsh silver. However, following pressure from local landowners, the Crown monopoly was removed by an Act of Parliament in 1693.

The 18th century saw improved technology, especially in the field of pumping. In 1714, the first steam engine in Wales was erected at Hawarden for pumping and others soon followed to allow workings to go deeper than ever before. Up to then, shaft haulage had been by hand windlass or horse whim but deeper shafts made this impractical. As a result, larger mines used steam engines for winding and this allowed a greater amount of ore to be removed. In 1768, large deposits of copper were found at Parys Mountain on Anglesey and this was mined in a huge open pit as well as underground. For many years, this site was the largest producer of copper in the world, much of it being smelted at Swansea.

Information for those wishing to lead in underground environments.



d) 19th Century

The 19th century was the peak of the metal and slate mining industry, with improved technology such as compressed air rock drills and dressing techniques. One obstacle for many mines was the isolation of the sites and the transportation of the ore or finished slates to customers. Many of the area's narrow gauge railways owe their existence to mining.

Many other minerals were mined, including zinc, iron, manganese and sulphur. In 1843, gold was discovered in Gwynedd and this created a new mining industry. Towards the end of the century, however, large deposits of lead and copper were discovered abroad and it was cheaper to import these than buy the home-produced product. By the end of the century, the metal mining industry in the whole of the UK was just about dead, with only small scale operations continuing.

e) 20th Century

The 20th century saw most metal mines closed by the start of the First World War. There were some exceptions, like the rich lead deposits under Halkyn Mountain but mining here has now ceased as well. There was a recent project for deep metalliferous mining on Anglesey but, despite the sinking of a deep shaft, this came to nothing. Slate mining had almost ceased by the 1960s but there has been a recent revival, although modern techniques tend to use opencast methods. Gold mining has been carried on intermittently throughout the century and some small scale mining still takes place. The North Wales Coalfield reached peak production in 1913 with 3.5 million tons but the last colliery at Point of Ayr closed in 1996.