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Gold Mining in Merioneth

George Hall[1]

HALL, G. (1983). Gold Mining in Merioneth. *Proceedings of the Shropshire Geological Society*, **3**, 6-7. Gold is not evenly distributed; either there is no gold at all, or it can occur in quartz at over 100 oz per ton. The Lower Lindula flags, or Clogau Shales, containing much carbon and pyrite, are overlain by quartz, with gold occurring in these beds in a circle around the Harlech Dome. Reedmay thought it essential to have intrusive greenstone close at hand, but this reasoning never seems to have been followed up.

The mine strata dip at about 35° from West to East. The area is heavily faulted, and the occurrence of greenstone is unpredictable. Geologists consider that gold occurs at the junctions of faulted lodes, and could have been waterborne through cracks in the rock.

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George Hall's interest in geology grew from the exploration of old mines with the minimum equipment of ropes and candles, following the evacuation of his school to Lampeter during World War II. He started to investigate the literature available, and obtained much information through inter-library loans. A friend suggested writing a book on the mines of South Wales; this was to be a joint venture, but Mr. Hall went on to write it himself, and also to write "*Gold Mining in Merioneth*". This reflected his interest in the current possibility of gold mining, and he hoped that it would also interest one particular person, as yet unknown. It did, and after a thorough cross examination in London, that person financed the current redevelopment of the Gwynfynydd mine.

Mr. Hall's interest is in economic geology, and he feels that there ought to be a logical way of establishing where to look for gold. Metallic sulphide minerals in North Wales, such as pyrite and galena, can be easily found, and were discovered early by the locals; there are traces of very ancient mines, but the minerals were difficult to work and smelt with the limited equipment available.

The main economic interest in North Wales dates from the early 1800's, after the discovery of copper at Parys Mountain, Anglesey, in the 1760's. Interest was mainly in copper and lead, until the announcement by Arthur Dean, in a British Association paper of 1844, that gold had been discovered in zinc ore, when looking for lead. This was soon followed by the discovery of gold in California (1848) and Australia (1951) (*sic.*). *[?1851. Ed.]*

Welsh gold was not taken very seriously, although copper, lead, zinc and tin were very important in economic terms in Britain. However, at Clogau, Readwin & Parry (1861) made an important discovery and obtained 10,000 oz of gold in a very short time at very little expense. This encouraged exploration, but there was an almost complete failure to find gold elsewhere. A Welshman called Pritchard Morgan, born in Newport in 1844, returned from Queensland in 1887 and took an interest in Gwynfynydd, obtaining 12,000 oz before the supply petered out. More capital became available in the 1890's and Clogau was reopened, maintaining considerable activity until 1916, especially after Britain came off the gold standard.

Gold is not evenly distributed; either there is no gold at all, or it can occur in quartz at over 100 oz per ton. This presents an interesting problem if one can find the key. The Lower Lindula flags, or Clogau Shales, containing much carbon and pyrite, are overlain by quartz, with gold occurring in these beds in a circle around the Harlech Dome. Reedmay thought it essential to have intrusive greenstone close at hand, but this reasoning never seems to have been followed up.

The Gwynfynydd workings have been resurveyed and geologically mapped. No. 1 and 2 levels go through the Clogau Shales, and greenstone is present; Pritchard Morgan obtained his gold from the Chidlaw lode in the Deep Level, and this lode ends against a fault. It is assumed that Clogau shales are present beneath the existing shaft, and it would be ideal to sink the shaft further, but it is badly angled, at 45°; 20° or vertical would be preferable. The rich lead/zinc

vein of the downfaulted Chidlaw lode is present, but so far only one small piece of gold has been found, not enough to pay the cost of the present exploration. In the "Big Lode" level, above four metres of quartz, a tunnel has been driven but the lode has not yet been found.

The mine strata dip at about 35° from West to East. The area is heavily faulted, and the occurrence of greenstone is unpredictable. Geologists consider that gold occurs at the junctions of faulted lodes, and could have been waterborne through cracks in the rock. The maid lode of the 19th Century was at a triple junction. It is a complicated problem, and although drilling continues, the "Big Lode" has yet to be found.

The lecture drew an audience of 64, including many non-members, and was followed by intensive and knowledgeable questioning. The vote of thanks was proposed by David Pannett.

N.B. For further information on the history of gold mining, see George Hall's very detailed and interesting book: "*The Gold Mines of Merioneth*", published by Griffin Publications.

A LECTURE BY MR. HALL GIVEN TO THE SOCIETY ON WEDNESDAY 10th NOVEMBER 1982.

Jane Krause