Riches from the Rock

The rocks of Gwynfynydd date from the Cambrian geological period and were formed from sediment around 550 million years ago. Ripple marks can be seen in the rock by the mine entrance, good evidence that the rocks were laid down in an estuary.

The sediments formed layers of different rock types. At Gwynfynydd the lowest layers are the Gamlan grits, a series of grits and flagstones. On top of these lies the Clogau shale, a fine-grained mudstone, black and rich in iron pyrites, with a series of grits and flagstones above, known as the Vigra Flags.

There followed a period of intense volcanic activity in the area which created the early mountains, moving, cracking and distorting the sedimentary rock. Molten volcanic rock was injected under tremendous pressure into the fissures and faults in the older rock. This molten rock included quartz fluids, some of which carried gold, silver, copper, lead and other elements. Where it passed through the Clogau shale, which was full of iron and sulphur, the perfect environment existed for it to deposit the minerals.

Gold is, therefore, mainly found in quartz veins within the Clogau shale although it has also been found in the Vigra Flags above.

Gwynfynydd is in a unique position on an ancient geological fault zone which means that there are large, unworked quartz veins within the Clogau shale deep under Gwynfynydd mountain. In most other local areas the shales are shallow and have been worn away by erosion so the gold rapidly disappears with depth. We have to work harder to reach our deeper reserves but we estimate that there are sufficient for a further 30 years production.

Introduction

Welsh gold has been prized since Roman times for its beauty and value. Celtic princes wore gold torcs around their necks as symbols of their rank and power. Even today, in an echo of that ancient symbolism, the Queen and other members of her family have wedding rings fashioned from Welsh gold.

The great Welsh gold booms of the Dolgellau gold belt have come and gone, but Gwynfynydd Gold Mine has been reopened to produce, once again, this rare metal and to create from it rings and other jewellery in pure Welsh gold which will be treasured for ever by those lucky enough to acquire them.

The jeweller can be seen at work in the Welsh Gold workshop in Dolgellau. Special visits to the mine can also be arranged from here which offer a rare combination of outstanding countryside, an unforgettable underground experience and the opportunity to discover Welsh gold for yourself.
The Welsh Gold Rush

The existence of gold in the Dolgellau area has probably been known for centuries. In their charter of 1198 the monks of Cymer Abbey at Llanelltyd were given the right in digging or carrying away metals and treasures free from all secular exactation.

Despite this, it was not until 1844 that the existence of this precious metal was made known to the world at large by Arthur Dean in a paper to the British Association. By that time a number of small mines were already established, including the Beddcoedur Mine at Gwynfynydd, and it would appear that gold had actually been discovered in the area around 1836.

A period of intense mining speculation followed and there were many discoveries including a small find in Gwynfynydd in 1863.

In the 1850s speculation was rife in the Dolgellau gold belt, probably encouraged by the stories returning from the great Californian gold rush. Arthur Dean started the initial excitement in the late 1840s when he claimed the whole of Snowdonia to be a treasure trove. In 1863 he announced his Berthlwyd mine to be as rich as any mine in Australia or California, although the prospectus for the Caegwian mine was said to contain more gold than the mine itself.

At the time, frequent discoveries were being made, a few of remarkable richness, but inevitably the rogues soon followed. In some cases, actual finds were exaggerated or mines were salted with gold from elsewhere in order to attract investors. In other cases, finds were hidden or minimised to avoid paying royalties or through fear of trouble.

This first gold rush was over by 1865 and its failure was blamed by Readwin, one of the main miners and developers, on theft, improvidence and confusion. He reported 'a bucket full of gold worth £350 was brought up and handed around the spectators' 'satchels full of gold were exchanged in the streets of Dolgellau for glasses of wine' 'saw a man at the Prince of Wales Mine sell for 5/- a 4lb nugget worth £10'

The true cause of the failure was bad mining techniques and speculation carried to extremes. In 1847 a Mr Bruin bought the Cwmhessian Mine for £14,000 without taking advice or making a survey. His mine produced nothing at all in return!

The second phase of the gold rush started over twenty years later. In 1888, rich finds in Gwynfynydd Gold Mine started a new rush which was, this time, supported by better techniques, machinery for mining and processing the ore, and a more industrial approach. By the First World War this phase too had petered out and other than one or two small ventures, gold mining did not seriously restart in the area until the Gwynfynydd Mine was reopened in 1981.
Morgan: the Gold King

Pritchard Morgan was one of the most extraordinary characters in an industry which was never short of interesting people. Born in Monmouthshire in 1844, he started as a solicitor's clerk in Newport. He emigrated to Australia in 1864 where he continued with his legal studies and qualified as a barrister in Queensland. He was also heavily involved in farming and floating mine companies and, as a result, became wealthy and influential.

He returned to Wales and was elected MP for Merthyr Tydfil in 1888, a position he held for twelve years.

At the same time he developed an interest in the mines of the Dolgellau gold belt and in 1887 he took over the Gwynfynydd Mine. Morgan's luck continued to hold. No sooner had he bought the mine than a large pocket of gold was found. He initially tried to keep it quiet as there was a question as to whether he owned the lease to extract gold. The find was so rich that it was impossible to keep quiet and one story suggests that special police had to be drafted in to the mine to guard it.

On the strength of this find, Morgan floated the Morgan Gold Mining Company, employing extravagant publicity methods. On the occasion he brought a party of 170 shareholders from London including the Earl of Darley, Lord Mostyn, and the Earl of Winchelsea. It is said that there was an air of prosperity about the Gwynfynydd Mine on that day to impress the shareholders with the value of their investment.

Morgan did well. He retained 70% of the shares, was a Director and received £45,000 in cash.

Gwynfynydd was one of probably only two profitable gold mines in the area at the time but, even so, the constant requirement for development capital meant that Morgan reorganised and re-floated the company in 1892 as the New Morgan Gold Mining Company Ltd, and again in 1894 as British Gold Fields Ltd.

In 1900, Morgan sold out to the St David's Gold and Copper Mines Ltd, the owners of the Clogau Mine, the other profitable mine in the area. They ran the mine through a subsidiary, Gwyn Mines (Merioneth) Ltd until 1913 when the irrepressible Morgan again took over the mine raising, in his first year, more ore than at any time since 1904. However, yields proved disappointing and the mine was dismantled in 1917.

Morgan never lost interest in the mine and as late as 1924, in his eightieth year, he sought help to reopen the mine — without success.
Gold Mining Today

Since the mine reopened, over 2,000 ounces of gold have been recovered despite a two year period at the end of the 1980s when the mine was not producing.

The rock is mined by a small team of six highly skilled miners using modern equipment such as rocker shovels, scraper hoes, air-powered rock drills with pneumatic rams, and high velocity explosive. Ore and waste rock is moved around the mine on a tramway, with trains hauled by a battery-electric locomotive.

The mill where the ore is processed is sited underground for security and environmental reasons. Here the ore is crushed, sieved and, where necessary, re-ground in the crushers before being passed over a vibrating table which separates the gold and silver from the waste rock or gangue material.

The table concentrate is treated to remove remaining waste materials and is then re-tabled. The final tabled product is sent for smelting into an ingot of metal containing mainly gold, with some silver. This is then refined to separate the gold from the silver, producing the two unique precious metals from Gwynfynydd.

Crushing ore in the underground mill. 1993

Cleaning loose rock from the roof. Gwynfynydd Gold Mine. 1993
The Royal Connection

Gold has been used by rulers since ancient times as a symbol of their power and wealth. Early Welsh princes wore torcs of gold round their necks as badges of rank and there is reference in the earliest of Welsh writings, the Triads, to three Welsh chieftains possessing chariots of gold.

The dissolution of the monasteries invested all mineral rights in the Crown and, in 1568, the Mines Royal Monopoly was formed with the sole responsibility for mining gold, silver and copper throughout the country. Today, the mineral rights at Gwynfynydd are still retained by the Crown and the mine has to pay a royalty to the Crown Estate for all gold and silver produced.

The wedding ring of Her Majesty Queen Elizabeth II is made from gold from this area, and it has become a tradition that members of the Royal family should have wedding rings made from pure Welsh gold.

On 21 April 1986, a one kilogram ingot of 99% pure Welsh gold was presented to The Queen to commemorate her 60th birthday. This gold was produced from Gwynfynydd Gold Mine and the gift ensures that a supply of this rare metal is available to the monarch for family wedding rings well into the future.

The Dolgellau Chalice and Paten

In 1890, two gold miners from the village of Llanfachreth, not far from Gwynfynydd, found a dirty old metal cup and plate on the hillside. Two men persuaded them that they would get into trouble if they did not hand the items over. They did so and then found that the cup and plate were sold for fifty shillings (£2.50). Their employer, TH Roberts of Dolgellau, heard the story and, fortunately, was able to buy them back.

They were subsequently identified as a silver-gilt Chalice and Paten, among the best examples of thirteenth century church plate in existence.

The plate was probably from the near-by Cymer Abbey, possibly hidden by the monks at the dissolution of the abbey in 1536 or stolen and hidden, or lost, by thieves.

The Crown claimed it as treasure trove but without initial success. The plate was auctioned at Christie's in 1892 for £710 and then sold to Baron Schroder for £3,000. The original finders never received a penny!

To avoid a court action by the Crown, Baron Schroder offered to bequeath the Chalice and Paten to the King.

When the Baron died in 1910, and after much argument, the Chalice and Paten were passed to the National Museum of Wales in Cardiff, in deference, it is said, to the wishes of King George V.
Welsh Gold: the Visit

A visit to Gwynfynydd Gold Mine is an unforgettable experience. It starts with a ride on the courtesy bus through some of the most beautiful scenery of the Snowdonia National Park. The journey passes Cymer Abbey and continues along public and private roads through wooded river valleys and past two of the finest waterfalls in Wales to reach the mine in its secluded location.

At the mine, visitors change into protective clothing: jacket, wellingtons, helmet, ear protectors and cap-lamp, before being taken by an experienced guide into the heart of this working mine.

Underground, visitors feel for themselves the noise and atmosphere as their guide demonstrates the air-powered equipment and shows how a rock face is drilled, charged with explosive and blasted.

In the gold vein, visitors are invited to collect their own small sample of ore.

The unique underground mill processes all the ore produced from the mine and the shaking table and crushers can be seen in action.

The visit also explores some of the old workings in the mine where gold, worth millions of pounds at today’s prices, was extracted at the turn of the century. Here the colour and sparkle of the quartz and its mineralisation can be seen to its best effect. A feeling for the hard working life of the miners in the early days can also be gained in one of the oldest stope s in the mine where the conditions of 150 years ago are found.

Smelting, the process of turning the mill concentrate into a small ingot of gold and silver, is demonstrated back on the surface and the tour finishes at the panning trough where visitors experience for themselves the excitement and frustration of this oldest way of separating gold from the rock. The rock being panned has come straight from the vein worked in the mine. There is gold there somewhere!

There is then time to visit the exhibition and to relax in the beautiful countryside surrounding the mine before returning to Welsh Gold, the workshop and visitor centre in Dolgellau.
Welsh Gold Jewellery

Jewellery made from pure Welsh gold can be seen being created in the Welsh Gold workshop. Here a master craftsman designs and manufactures individual items to order as well as producing jewellery for the shop.

All the Welsh gold items in the shop and workshop carry the special mark AC, a guarantee of purity, indicating Aur Cymru (Welsh Gold). Gwynfynydd gold will never be diluted with ordinary gold. Careful control is maintained on the flow of gold from the rock face to the final product which allows us to guarantee that the gold is 100% Welsh.

Welsh gold is different from ordinary gold and has, traditionally, only been used for the very best and finest jewellery. It has been the chosen gold of Royalty for generations. Ask goldsmiths who have worked regularly in Welsh gold and they will agree that it is different to use and has special qualities.

It is now possible to 'fingerprint' gold and identify its likely source. The work is at an early stage but, by measuring minute quantities of trapped atoms of other metals hidden deep in the gold's structure, it is possible to tell what area it comes from. Ordinary gold which comes from elsewhere does not have the same 'fingerprint' as Welsh gold.

Also in the workshop, products are made using semi-precious stones and other attractive rock from the mine and from other sources around the world.

Special jewellery created to commission by our Master Goldsmith, Charles Day.

A European Parliament brooch produced in Welsh gold by our goldsmith for Beata Brookes, former MEP for North Wales.

Acknowledgement

In preparing this booklet, the author has relied heavily on the information contained in a number of publications, for which he is grateful. These include:

- The Gold Mines of Merioneth by GW Owen and V Challinor Davies
  Journal of the Merioneth Historical and Record Society, 1961
- Industrial Archaeology in Merioneth by D Morgan Rees
  Journal of the Merioneth Historical and Record Society, 1966
- The Mineral Wealth of Llanfachreth Parish, Mary Corbett Harris
  Journal of the Merioneth Historical and Record Society, 1966
- Goldmining in Western Merioneth, T A Morrison
  Journal of the Merioneth Historical and Record Society, 1973 and 1974
- The Gold Mines of Merioneth (2nd Edition), GW Hall
  Griffin Publications

Thanks are also due to Roland Phelps and Nick Warrell for valuable information and contributions to the text, to the Gwynedd Archives and Museums Service for the provision of historic photographs and to the other photographers Ron Callender and Nigel Hughes.

Welsh Gold: the Story of Gwynfynydd Gold Mine. by Ian Rutherford
Published by Gwynfynydd Gold Mine Ltd, Dolgellau, Gwynedd LL40 2HR
ISBN 0 900439 68 8
Copyright © Gwynfynydd Gold Mine Ltd, 1993
Printed by Cambrian Printers, Aberystwyth

Back cover: Pistyll y Cain, Gwynfynydd