

## A brief history of the Ystumtuen Mines.

The earliest definite references to mining in the Ystumtuen area are contained in the Nanteos Manuscripts where a lease is granted to Sir Humphrey Mackworth of Neath in 1698 and Waller, in the same year, describes " The Lead Mines of Yftimtean " where he had superintended the driving of a fifty yard cross cut into the Sun Vein ( South Lode ). From the intersection with the lode he had driven 33 yards along the lode and was working a rich bunch at 50 yards below the surface.

By 1704 all was not well within Mackworth's enterprises and on the 22nd of February the mine was re-let by Powell of Nanteos to The Company of Mine Adventurers. It is later recorded that Powell was to be paid at £ 4 / ton as a royalty on the ore raised at Ystumtuen. Initially, the mine was productive and by 1708 Waller has driven and sunk 349 fms. at a cost of £ 1173, this had yielded a total of 594 tons of ore.

In 1709 the Company of Mine Adventurers fell into disrepute on account of fraudulent accounting, Waller was dismissed from his post and Mackworth kept a low profile within the Company thereafter. Manuscript sources show that by 1720 William Powell of Nanteos was complaining of non delivery of his Duty Ore. It is further recorded that there were 125 tons of ore remaining unsold at mine. As the accounts show this ammount carried over to 1721 it must be presumed that there was little activity, if any, at Ystumtuen at this time.

The Mines Adventurer's lease expired in 1727 and Wharton, their agent, is recorded as destroying the pumps, infilling open workings and removing cranches. At about this time it would seem that some attention had been paid to following the lodes to the east and a minor discovery of ore had been made at the neighbouring property which was then known as Pen y Berth or Berth Ddu. This was later to become the Penrhiw Mine, and the initial work was still within the confines of the Nanteos Estate. However, in their search for ore, the men continued their examinations beyond the Crown Boundary and discovered a productive vein at Bwlch Gwyn about the year 1735.

By 1742, some 500 tons of ore had been raised from the new mine with the royalties being paid to Thomas Powell and no authority to work the mine having been granted by the Crown. Information to this effect was filed by the Attorney General against Powell in the following year.

The Nanteos Estate granted a fresh lease to work Ystumtuen in 1746 to J. Totty & Co. of Flintshire, who commenced their tenure by sinking a perpendicular Whim Shaft to the south of the old workings in order to intersect the lode at depth. It is reputed that this company were later declared bankrupt and that the miners had to sell the ore to recover their wages.

Whilst Totty & Co. cannot have worked the mine for more than eight years, their Whim Shaft was vital to the subsequent development of the mine and was ultimately sunk to about 75 metres / 246 feet to connect with the Ystumtuen No. 3 or 46 fathom level.

An excellent account of the development of the mine, and of the contemporary workings, is given by Lewis Morris in the report on the Mannor of Perveth which was commissioned by the Treasury in 1747. It is also evident from Morris's map of the mine that a length of about 300 metres / 1000 feet of the lode had been worked out to a depth of about 36 metres / 120 feet below the surface. Whilst Morris's map shows 15 shafts sunk along the course of the South Lode, they are little more than crown holes over the stopes.

Totty & Co. had definitely abandoned the Ystumtuen Mine by 1754 as a lease was granted from William Powell to Chauncey Townsend in that year. Little is known of Townsend's operations but with most of his other mines he placed their control in the hands of his son, James, in about 1770 who appointed Thomas Bonsall as his manager. Bonsall took over control of many of the sites circa 1780 and ran them in a rather ruthless and uncaring manner. His mismanagement was usually in the form of bad working practices, such as not leaving sufficient support, and was widely criticised by contemporary operators. Few records have survived regarding the history and development of the Ystumtuen, Penrhiw and Bwlchgwyn Mines during the latter half of the eighteenth century. Bonsall is known to have still been in control of these mines in 1806 and was selling ore at £ 18 per ton.

By 1810 the Bwlchgwyn ownership problems appear to have been resolved with the Crown having granted the mine to the Powells of Nanteos. Amongst the Nanteos Estate papers is a letter of proposal to their agent, Hugh Hughes, from J.S. Bonsall regarding the " Estentein Works " and another from Arthur Davies regarding Bwlch Gwin. Hughes was dismissed as their agent in 1814.

A valuable insight into the mines of the area is provided by Walter Davies in 1815 who simply describes " Ystum Tien " as an old mine, granted by the Crown to the Nant Eos family. The brevity of his account is such that it would suggest that the importance of the mine was overshadowed by Darren, Cwmsymlog and Cwmystwyth.

After the Napoleonic War the lead market was particularly buoyant and high prices created a fresh impetus to most of the mines in the county. However, Ystumtuen and Bwlchgwyn were relatively old mines and had reached such a depth that the cost of raising water to the surface was outweighing the value of the lodes.

In 1822 the Alderson Brothers & James Raw moved from Swaledale to Cardiganshire to establish a mining business; commencing with the Cwmystwyth Mine, and then joined in 1824 by the Ystumtuen Mine. Initially, this exercise was most productive and justified the building of a lead smelter at Devil's Bridge in 1827 but, lead prices then declined rapidly which resulted in their insolvency in 1834.

In order to overcome the water problem at Ystumtuen Mine, the Aldersons & Raw partnership commenced driving a deep adit cross cut from the Rheidol Valley which, after 432 metres, was to intersect the lode at about 140 metres below the outcrop. This task appears to have taken about 31/2 years to complete.

This adit is known by a multitude of names :- Aldersons Level, the 78 Fathom Level, the Deep Adit, Level Fawr and most recently as the Cwmrheidol No. 6 Adit.

Other developments which took place during this period, to permit natural drainage, were that two winzes were put down 13 fathoms / 23.7 metres from the shallow level at the bottom of the Whimsey Shaft to a new drift called Raw's Level - later to be called the 40 fathom or the No. 3 level. About 8 fathoms / 14.6 metres below this Owen's or Reese's level, later called No. 4 or the 48 fathom level, was driven as a drift to both the east and west with a 17 fathom shaft dropping into the No. 6 or Alderson's Level. This was later known as the No. 1 Rise.

The ore shoot shortened rapidly at depth and was virtually non-existent in the lower levels, the development of the Deep Adit appears to have been suspended shortly after it had reached its goal circa 1828. At this time it was believed that the ore shoots in Cardiganshire did not persist with depth and it seems most fortunate that the adit was driven in this location as very little lead ore was ever found in the lower levels.

In 1834, when the Aldersons were declared bankrupt, Lewis Pugh of Aberystwyth purchased the remaining 10 years of the lease on the Nanteos Mines, which included Ystumtuen and Bwlchgwyn. This was a shrewd move as the market was improving and much of Pugh's success in mining was due to the price of lead doubling over the three years between 1833 and 1836. Whilst Pugh was involved with several profitable mines, he had no previous experience within the industry and showed great resourcefulness in the application of his business acumen.

Under Pugh's tenure, the worst accident recorded in the area occurred in the March of 1839 when four men were drowned. According to the Mining Journal of the 20th April, they were drowned by holing into an old flooded shaft in the Ystumtuen Mine but a local clergyman records that the cause was due to a scaffold breaking beneath four men and precipitating them into a sump. They were named as Edward Davies 66, his son David 33, John Jenkins 38, and Edward Davies 24. Contemporary rates of pay are quoted as 16/- per week for miners, 11/- per week for dressers with 1/6 per day for women and 10d per day for children.

Lewis Pugh's tenure ended in 1844 and the Nanteos Estate then granted the mines to the highly reputable firm of John Taylor & Son. The Ystumtuen, Penrhiw and Bwlchgwyn Mines were owned by the Nanteos Estate, and the three appear to have been let together for the previous century. However; in the mid 19th century, Penrhiw passed out of the Nanteos Estate and into the hand of the Williams family of Llanfrothen sometime between 1845 and 1850 until at least 1870; maybe as part of a marriage settlement. To the east of these mines lies Llwynteifi which was owned by the Davies family of the farm of that name. This land was divided when the property was left between three sons, one of whom sold his share to the Richards of Penllais Estate and another sold his share to his brother. This resulted in the old Llwynteifi Sett being split into Llwynteifi Uchaf and Llwynteifi Isaf, both being held by Davies, and Temple which was held by the Penllais Estate.

The documentation of these mines is greatly improved after 1845 when Sir Robert Hunt started compiling the Mineral Statistics as part of the function of the Geological Survey. These show the output of individual ores, the ownership and management of the mines on an annual basis and assist greatly with subsequent chronicling. It is recorded that in 1845 the Penrhiw & Ystumtuen Mine were being worked jointly as the Nanteos Mine under the auspices of John Taylor and that Penrhiw produced 46 tons of rather inferior grade lead ore by the efforts of 36 persons.

No output is quoted from any of these mines for 1846 - '47 and it is presumed that underground development and improvements to the mill must be partly to blame for the lack of production. It would also appear that Taylor directed some of the miners to continue driving the No. 6 adit towards Penrhiw. Taylor was also showing signs of disappointment with these mines as they were very difficult to work effectively with hard frosts affecting the waterwheels in the winter months and severe droughts during the summer, with precious little in the spring and autumn.

The system of leats and ponds which developed around the Penrhiw and Bwlchgwyn Mines is now in a rather neglected state but still bears testimony to victorian engineering innovation.

During the late 1840's it is very difficult to balance the Mineral Statistics against the names by which the Setts are usually known. The Bwlchgwyn & Penrhiw Mines were usually worked together as the Aberystwyth Mines whereas the Ystumtuen & Bwlchgwyn Mines were worked together as the Nanteos Mines. It is therefore difficult to account for the entries in the Mineral Statistics for 1848 - 1850 where the Aberystwyth Mine is shown as returning 561/2 tons of lead ore and Nanteos as returning 535 tons of lead ore.

From information contained in the Proceedings of the Geological Survey, it can be deduced that the Tynyfron shallow adit had been driven at some time previous to 1848 but that the lode was not of any great value. It was once said of the Ystumtuen Lode that it was " Too poor to work but too good to abandon " and this feeling seems to have persisted throughout the latter half on the 19th century and well into the present one.

The complex position regarding the names under which these mines worked is further compounded in 1850 by returns being made separately under the headings of Aberystwyth, Nanteos, and Penrhiw. At this time, from studying contemporary literature it would seem that the Aberystwyth Mine was the name which was then being applied to the Ystumtuen Mine by John Taylor, and that Nanteos Mine was used by a company which worked both the Gwaithgoch and Bwlchgwyn Mines. Contemporary deviations from the standard spelling include Bwlchgwin and Blwch Gwm.

Whilst there is no doubt regarding the location of the Penrhiw Mine, the contemporary names being applied to the levels do not tally with the mine plans. This is not unusual, and the information was derived from Matthew Francis who was famed for his inability to present information without a degree of embellishment.

It is worth noting that Francis later mentions that the 36 fathom Level was flooded in the December of 1850 thus highlighting the problems of pumping during the winter months and the necessity of driving an adit beneath the old mine.

Between 1850 and 1854, very little appears to have changed at these mines, partly for want of mutual co-operation. Nanteos remained fairly buoyant and eventually merged with Penrhiw in 1855 and some minor interest was being shown in the Tynyfron Mine but this did not result in any development. Francis states that it was originally the intention of the Bwlchgwyn company to purchase Penrhiw Mine but the negotiations resulted in the Bwlchgwyn Mine being sold to the Penrhiw company.

The merging of Nanteos with Penrhiw appears to have been precipitated by the possibility of being able to drain Bwlchgwyn through the 46 fathom level of the Penrhiw Mine. Alderson's Adit or the No. 6 Level was then driven east towards the Penrhiw 46 fathom level; the levels holed through in the April of 1856 but the Penrhiw 46 lay about 5.4 metres / 18 feet above the No. 6 which was smoothed out by building a long ramp between the levels rather than tipping the ore into a chute and thus creating unnecessary double handling.

Whilst there are only sketchy accounts of any work being undertaken at Llwynteifi in the first half of the 19th century this appears to be on account of it being a small Sett on a private estate. Whilst the greater part of this mine lies outside the present study area it cannot be ignored as there is direct communication from Llwynteifi into Bwlchgwyn and the water made in this mine, by and large, drains out of the Cwmrheidol No. 6 Adit.

There can be little doubt that parts of the Llwynteifi Mine are ancient and pre date written records whilst the surface works immediately to the east of Bwlchgwyn Mine have not been disturbed since the Nanteos Estate encroached onto the Crown Manor. There are remarkably few 18th century mine sites which have survived in such an intact state. The Temple Mine was part of Llwynteifi prior to it being formed into a separate Sett; it should be noted that the Temple No. 2 Adit was driven towards the Bwlchgwyn 40 fathom level and it is far from certain that they never connected. One of the Llwynteifi adits on the eastern side of Mynydd Bwlchgwyn is recorded as having been driven about 180 metres and discharges a quantity of water which is disproportionate to its length.

In 1859 the amalgamated mines of Ystumtuen, Penrhiw and Bwlchgwyn were let to J.H. Murchison & Co. who ran them as " The Nanteos Mines ". Murchison also ran several other mines in the area in a fairly efficient manner, probably better than most but not up to the standards of John Taylor & Son. He was the son of the eminent geologist Sir Roderick Impey Murchison " The Father of Modern Geology ", was remarkably quick witted, had an excellent command of corporate law, and was notorious for his dress sense; He was once described as the " Beau Brummel of company secretaries ".

It is reputed that R.I. Murchison, during his field work for " The Silurian System " was investigating the graptolitic fauna of the Rheidol Gorge near the Temple Mine when he met Adam Sedgwick, another eminent geologist, who was studying the occurrence of *Monograptus Sedgwickii* in the upper Cambrian rocks.

After the initial accusations of straying onto each others territory, they realised that another series of rocks lay between the Cambrian and Silurian series and thus discovered the Ordovician System.

J.H. Murchison connected Bwlchgwyn and Penrhiw Mines by extending the Penrhiw 46 fathom level to the east whilst a drift was driven west off the Bwlchgwyn Engine Shaft at the 47 fathom level, this was not an outstanding success as the Bwlchgwyn 47 holed through at 6.1 metres / 20 feet below the Penrhiw 46. This allowed the Bwlchgwyn Mine to drain naturally to about 6.7 metres / 22 feet below the 40 fathom level but meant that any work below the 40 involved raising the water to the 30 fathom level. As a consequence of this error, the Bwlchgwyn 50 fathom level appears to have been abandoned prematurely. In hindsight, Murchison must have regretted not having continued the 40 fathom level to the west as it was impossible to tram their ore out of the adit and they continued to bear the cost of winding it to surface, and dressing it at the Bwlchgwyn floors rather than at the newly erected mill in Cwm Rheidol. After producing 521.4 tons of lead concentrates over a six year period, Murchison abandoned the mines in 1865.

In 1869 Murchison produced a revised report on mining as an investment within which are his version of the operations which he had formerly managed. The mines were now known as The Nanteos Consols Mine and were under the management of Thomas Phips Thomas - a rather unsalubrious colleague of Murchison who was also involved in some rather shady dealings with the Francis Brothers of Goginan and J. J. Attwood, a solicitor cum financier who had moved to Aberystwyth. The finance for this phase of working was raised by offering 700 shares of £ 10, though how many were sold remains unknown.

Under Murchison, the Bwlchgwyn Mine seems to have fallen into a state of delapidation as the Nanteos Estate were very concerned about the condition of the buildings shortly after Attwood had taken the lease. Attwood also made a proposal to the Estate that they let him convert the Bwlchgwyn offices into a mine agents house which does rather reflect how little was being done at Bwlchgwyn Mine.

Murchison's report contributes comparatively little to the understanding of the sub surface operations. He mentions that Captains James Paull of Goginan and Henry Boundy of Cwmsymlog both had high opinions of the lodes and the cheapness with which they could be worked. Both of these gentlemen worked for Murchison at Cwm Brwyno and Penrhiw respectively. On a short shoot in the floor of the No. 6 adit a winze had been sunk to the 18.2 metre / 10 fathom level and to raise the ore and water a waterwheel was installed in a neighbouring stope.

Sufficient water was available from the old Ystumtuen workings to turn it, further descriptions of this are provided by Absalom Francis in his " History of the Cardiganshire Mines " published in 1874. At Penrhiw, the Engine Shaft was sunk to 36.4 metres / 20 fathoms below the adit but the claims that Bwlchgwyn was drained to the bottom and that the ore could be trammed out along the adit are simply not true.

On the surface, the railroad through the No. 6 adit terminated at the head of a double acting incline which lead to the dressing floors. The mill was driven by a 30 foot waterwheel of 3 foot breast to which was attached a set of 30 inch rolls to reduce the ore to a sufficient size for the jigging machines and buddles.

The neighbouring Tynfron Mine had still not been amalgamated with the Ystumtuen / Cwmrheidol Mine and was being developed under the managment of Robert Northey, of Bwlch Consols Mine, at this time.

The condition of most of the mines in the area is very well recorded in 1870 due to two publication. The first of these was from Liscombe & Co. who were a firm of Liverpool stock & share dealers; the other came a few months later from Thomas Spargo who was a London based mining promoter.

Of Tynfron, Spargo states that the mine is on the property of Col. Powell and held on tack note at 1/14th royalty with an option for a 21 year lease. Local manager is Captain Robert Northey of Bwlch Mine. An adit level has been driven which gives a back of 20 fathoms. The operations have not been very extensive but about 1820 some blende was raised from the lode. Little lead has been returned, the produce being blende, about fifty tons were obtained from it in 1868 and '69. Six men were engaged in 1867 and '68. Liscombe adds that the principal produce is zinc blende and that very little work was being done despite the adit level having been driven many years previously.

Liscombe reports that Ystumtuen Mine was worked more before 1770, a large portion of the lode from the surface to the deep adit having been removed; in fact, all was taken that could be got at without the aid of machinery. The deep adit has been carried completely through the sett and into Penrhiw Mine which is the adjoining property. The deepest workings are only a few fathoms below adit.

Spargo adds that the mine lies on the property of Col. Powell and is under tack not for 12 months with an option to take a 21 year lease at 1/16th royalty.

Spargo also states that the Ystumtuen adit has a back of 60 fathoms at the outcrop. Large and extensive operations took place here about 1770, the old miners having gone as deep as they possibly could without the aid of machinery. A shaft has now been sunk to 10 fms. below the adit. The mine has only recently been re-started and at present there are 10 miners engaged in repairing the adit and clearing out the workings.

Regarding Penrhiw Mine, Spargo states that it lies to the west of Bwlch Gwyn and is on the property of Rev. Lewis Williams of Llanfrothen. It is held on a 12 month tack note at 1/14th royalty. The Ystumtuen adit drains the mine to 60 fms. and the Penrhiw Engine Shaft has been sunk to 30 fms. below it. Only the middle lode has been worked and has been completely taken away for the 170 fms. across the sett. Nothing has been done on this property for some time past. Liscombe does not deal with Penrhiw as a separate entity and includes it with his description of Nanteos Consols.

Bwlchgwyn is included as part of the Nanteos Consols Mine by Liscombe, who reports that the mine has been worked since considerably before 1770 and that the earlier workers had to contend with much water but still raised a large quantity of ore from the middle lode which has been taken away almost entirely between the old adit and the surface. The facilities for working the mine have been much increased of late by the Ystumtuen Adit having been continued into it. Spargo states that Bwlchgwyn lies on the property of Col. Powell of Nanteos and is held on a 12 month tack note with an option for a 21 year lease. Secretary and Manager, T.P. Thomas. The mine is drained to a depth of 65 fathoms by the Ystumtuen adit, and only worked to 10 fm. below that. It was worked extensively about 100 years ago on the back of the middle lode and then taken up by Messrs. Taylor & Co. in about 1844. At this time all water had to be pumped to surface, as the adit had not been holed through, and there was insufficient water for pumping, winding and dressing in all seasons. Messrs. Taylor sold the mine and it was last worked by Mr. Murchison who drove the adit level into Bwlch Gwyn.

Of Llwynteifi Mine, Liscombe states that the adit level has been driven some distance and when it intersects the lode will probably reveal a rich deposit. Two fine veins form a junction in the sett, and at surface present a great mass of gossan, spar and blende.

Spargo reports that Llwynteifi Mine is on the property of Captain Richards of Penglais on a 12 month tack note, secretary and manager being T.P. Thomas. The old men worked here extensively on the middle lode to nearly 30 fathoms below the surface about 1770. At this time the water was pumped by hand in wooden pumps. The mine is now drained by the Ystumtuen adit which enters the property at 70 fathoms, and gives a back of forty fathoms under the old bottoms. The adit reached the boundary through the Bwlch Gwyn Mine on the south lode, on which vein all the ground has been taken away close up to the boundary.

The Temple Mine is referred to as Llwyn Teifi Isa by Spargo who states that 3/4 of a mile of outcrop crosses the sett and that it was held on a tack note with an option for a 21 year lease. Secretary & Manager, T.P. Thomas with Captain Michael Barbery as local agent on the mine. An adit has been driven about 80 fathoms but will have to be cross cut seven fathoms to cut the lode at thirty fathoms below the surface. The Ystumtuen lode crosses the river Rheidol to the east of the mine and shows a six inch rib of galena.

Very little of any consequence resulted from the publication of these reports despite lead still being a relatively good price. No detailed returns were furnished for the Mineral Statistics in 1871 and '72 and it must be presumed that the mines were temporary idle or suspended. It is also notable that an application was made to the Nanteos Estate to amalgamate Eystumtuen, Bryn Gwyn and Penrhiw Mines. Other Estate papers show that Thomas Hodge, the manager of the Caegynon Mine, applied for a take note on Tynyfron Mine. Also that Captain John Trevethan of Goginan purchased an interest in Bwlchgwyn & Penrhiw Mines Co. On the 22nd of June 1872, the Bwlchgwyn Mine was let to The Aberystwyth Silver Lead Mining Co. Ltd; a rather promotional name as the silver content of the lead did not even cover the cost of extraction. Their secretary was Robert Garland but he does not appear to have been related to the family of the same name who supervised the Cwmsymlog Mine for many years. The Nanteos Consols Mining Co. had been put into compulsory liquidation and it was becoming obvious that the best ore had long since been taken out of these mines. Over 1873 and '74 the Aberystwyth Company only managed to produce 100 tons of lead concentrates.

In the early 1870's, lead had risen to the same high value as it commanded in the 1850's, but by 1880 had slumped to its 1830 price and this decline continued until about 1895. It was not until the stimulus and subsidies of the First World War that the value rose to 1850 and 1870 levels. To promote the Cardiganshire lead mines, Captain Absalom Francis published his " History of the Cardiganshire Mines ", in 1874, which contains further accounts of these mines.

Francis was a well known mining engineer and promoter of Cornish descent who had settled at Goginan with his brother Matthew. Absalom was the eternal optimist regarding the potential of some of these mines but parts of his book are worth quoting in connection with the present study.

At Tynyfron, a shallow adit cuts the lode at 15 fathoms below the outcrop. Blende has been worked for some distance eastwards, but very little has been done here.

Ystumtuen is a very old and extensive mine worked away from surface by the old miners for a very considerable length along the main vein to as deep as they were able to contend with the drawing of water and stuff. Sir Thomas Alderson commenced driving the deep adit about 1824. Alderson worked the mine for about 10 years before getting into difficulty when it was sold to Lewis Pugh. Most of the ground between the adit and the old mans bottoms having been worked away by two intermediate levels called Raw's level and Owen's workings. Very little trial was carried on to the west and in driving eastwards about 200 fathoms ( 365 metres ) the Great Ystytyhen Lode divided into two parts, the southerly part having been followed into Penrhiw and Bwlchgwyn Mines, and called the Bwlchgwyn South Lode, the northern part has not been opened. I have had many opportunities to examine the surveys of the workings carried on by the old men and am certain that much ground has been left standing. Some time after the expiry of Mr Pugh's lease, Mr Murchison formed a company and produced a large quantity of ore for many years but not at profit.

A waterwheel was installed underground for pumping with the feed water coming from the extensive old workings to the east. He also sunk the mine to 20 fms. below the adit but very little ground was opened out at this depth. Good machinery for crushing and dressing was erected near the mouth of the adit and good railroads laid through the mine. In 1872 it was sold to Mr Isaac Morgan of Aberystwyth who sold it to Mr Curtis who still retains the property. (1874)

The Aberystwyth Mine comprises the Bwlchgwyn and Penrhiw mines. It is bounded by Llwynteifi to the east and Ystumtuen to the west. Bwlchgwyn worked considerably more than a century ago. Along with the other Nanteos Mines it was let to Mr Lewis Pugh until about 1844 after which the mines were let separately. It suffers from drought in summer and frost in winter and could only be worked for half of the year. During Mr Taylor's tenure, the Ystumtuen adit was extended into Penrhiw. The managers of Bwlchgwyn determined either to purchase the Penrhiw mine or sell them Bwlchgwyn. The Penrhiw Co. purchased Bwlchgwyn and amalgamated the two properties into the Nanteos Consols Mine.

The Ystumtuen adit was then carried through to Bwlchgwyn and to within 100 fathoms of the boundary thus easing the machinery. At this time Penrhiw was worked to about 30 fms. below adit and Bwlchgwyn to 20 fms. The present company was formed about 18 months ago with a capital of £ 50,000. They commenced working at Penrhiw to good profit, new machinery was erected on both mines, and good lead ore was found about 40 fms. from the Llwynteifi boundary in driving the 40 fm. and under the 30.

Francis reports that Llwynteifi worked until about 1870 when new management commenced a cost book operation and have now registered a company with a capital of £ 15,000. A great deal of detail is given regarding the various lodes and workings, including the Nant y Moch adit. The Llwynteifi adit has been driven in from the east side of the hill, some 90 fms., by a former company and will give about 25 fms. of backs at the top of the hill. Nantymoch level has been driven for about 40 fms. Pryse's lode has recently been discovered as lying about 40 fms. south of the main lode and had been driven upon for about 10 fms. when a slide disordered the lode locally, it carries a leader of 4" of blende interspersed with galena.

For the remainder of the 19th century the reports and accounts of these mines are rather sketchy but portray a series of failures and liquidations as the price of the ores declined whilst labour and working costs increased.

In 1875, the seldom sober Captain Robert Northey relinquished his lease on Tynyfron and, whilst Thomas Hodge of the Caegynon Lead Mining Co. had expressed an interest in taking a licence from the Nanteos Estate, it was granted to Captains Nicholas Bray and Captain James Phillips, both from the Goginan area. Initially they appointed John Croucher as their manager but within a year he took up the manager's post at Temple Mine, a post which he held until 1881.

By 1879 Bray & Phillips had managed to raise sufficient finance to form the Tynyfron Lead Mining Co. with Captain Phillips acting as the manager until J.P. Thomas was appointed to the post in 1879.

This was also a short lived appointment and once again Phillips took the helm from 1882 until their operation failed in 1887 having raised 45.2 tons of zinc blende valued at £ 132.30 during the whole of their 12 year tenure.

The Temple Lead Mining Co. was formed in 1876 under the management of Charles Thomas but had ceased to exist within a year. The company was revived in 1878 and John Croucher, formerly of Tynyfron, was appointed to supervise the erection of the new plant which commenced in June with the 30' x 4' wheel to drive Blake's jaw crusher and a set of 24" roll crushers. In the autumn this was followed by a dressing mill which contained a three compartment jig, two flat buddles, two round buddles and a mechanical dolly tub driven by a 14' x 2' wheel. In the following year, work started on the pit for the main 40' x 4' wheel, it was set to work at Temple in February 1880 and drove a 200 H.P. compressor, and hoists for the mine and the inclined plane to the road from Ystumtuen village. By 1881 the mine had been sunk to 36.5 metres / 20 fathoms below the No. 1 Adit but the ore shoot was poorer than anticipated and no further sinking took place. The total production for all their efforts up to that point was a meagre 20 tons of rather indifferent grade zinc blende worth £ 50. John Croucher departed from the area at this time and may only have been appointed to supervise the erection and construction of the new machinery. The Temple Lead Mining Co. never actually produced any lead and appear to have gone into liquidation in 1883 but in a much grander manner than the Tynyfron Lead Mining Co.

Within three years the beautifully equipped Temple Mine was taken up by the Cardiganshire United Mines Ltd. along with Llwynteifi and Bwlchgwyn but this venture only lasted from 1886 until 1888 - '89. Further attempts were made at reviving Temple in 1908 - '10, 1913 and finally in 1917.

Returning to the other mines in the mid 1870's, the Aberystwyth and Ystumtuen Mines were again let to new companies in 1875 and Bwlchgwyn in 1878. The Ystumtuen Lead & Sulphur Mining Co. only survived for part of 1875 and '76 and the mine was taken up by the Ystumtuen Lead Mining Co. Ltd. later that year. They relinquished their lease in 1881. George Green, a local foundry owner took up the lease in 1882 but relinquished it the following year. Ystumtuen then lay idle in 1884 and '85 and was amalgamated with Penrhiw in 1886, Tynyfron was then included within this Sett in 1890. The Bwlchgwyn Mining Co. was re-formed in the June of 1890 by Captains Nicholas Bray and James Phillips of Goginan, formerlee the lesees of Tynyfron. This venture was even shorter lived than their previous attempt and was suspended in the following year.

The 1890's was a decade of miserable prices for base metals and only the Penrhiw Mine, amalgamated with Ystumtuen & Tynfron managed to avoid liquidation by suspending the work, they were forced to lay off their miners in 1894 and the dressers in 1895.

The Penrhiw, Ystumtuen & Tynyfron Mining Co. relinquished their rights in 1899 and in 1900 the Tynfron and Ystumtuen Mines were taken up by the Belgian owned Rheidol Mining Co. Ltd., both mines were managed by F. De Bal. The name of the parent company remains unknown but it is worth noting than there were several Belgian companies involved in mineral exploitation in the UK. at that time to secure a supply of ore for their large smelting industry. The Frongoch Mine, some miles to the south, was being contemporarily developed by the Society Anonym Metalurgique. It has been suggested that the parent company of the Rheidol Mining Co. was the Vielle Montagne Co. but this has not been confirmed. Most of the Belgian companies were later merged into what is today the international industrial combine of the Union Minere company.

Initially, both mine appears to have been undergoing maintainance, development and refitting as there is no record of production on either site. It would appear that this company almost completely rebuilt the dressing mill and finished off the driving of the No. 9 Adit. Beneath the old Ystumtuen Mine, by way of the Cwmrheidol adits, they employed 12 miners to put the mine in order and at Tynyfron 8 miners were employed; Whilst on the surface at Cwmrheidol, a further 12 men appear to have been engaged to put the plant in order.

By 1901 the number of employees had increased to 36 underground and 40 on the surface at Cwmrheidol with no one at Tynyfron. A bulk sample from Ystumtuen Mine was milled and yielded 10 tons of 70 % Lead Ore and 68 tons of 36.7 % Zinc Ore. F De Bal and Henry Nottingham managed the mines, with the old mine surveyor, Henry Francis being retained.

De Bal departed from Tynfron and Ystumtuen in 1902 leaving the management to Henry Nottingham. Neither site produced any ore despite there being 39 men employed below ground and another 18 on the surface. In 1901 Francis re-surveyed Ystumtuen and Tynyfron as a single site, but there are manuscript additions on his original map which suggest that it was the working plan for the developments which took place after this date. These additions include the No. 9 Adit and the tramway to Tynyfron and it must be concluded that the large labour force which was taken on was for the purpose of these developments.

Contemporary details of the mill have not been found but some years after it was commissioned, the plant was said to be capable of treating about 4 tons of feed per hour and used :-

Picking Table --> Jaw Crusher --> Roll Crusher --> Tromells -->  
7 x 5 compartment Jiggers --> 8 x 4 compartment Jiggers -->  
2 Wilfley Tables --> 1 Jones Sliming Table --> 3 Round Buddles

For treating Pyrite, the initial sorting from the blende ores was done manually on the picking table and then fed into a separate circuit containing :-

Jaw Crusher --> Rolls --> 4 Jiggers

The crushing plant was driven by a Gunther Pelton Wheel fed by

a 17.18 cm / 7" pipe giving 61 metres / 200 feet head of water from the No. 6 Adit whilst the rest of the plant was powered by a large Petter oil engine. They also installed a compressor to supply air into the mine though !t one time electric rock drills were being used.

In 1903 the company produced zinc blende valued at £ 6020. Peak production for the Rheidol Mining Co. was reached in 1905 when 46 tons of lead and 1537 tons of zinc ores were produced and sold for £ 10,609, this gave employment to 70 miners and 36 surface workers.

In addition to this Pyrite was also being sold, but the annual production is not given, however, the quantity appears to have been about 1/3rd of the blende tonnage. viz: about 400 tons in 1904 and 500 tons in 1905.

The output of the Cwmrheidol Mine then started to decline after 1905 and apparently work at Tynyfron Mine was suspended from 1903 until 1912.

Output of Cwmrheidol Mine between 1906 and 1913.

Year	Zinc Blende	Pyrites	Lead Ore
1906	1134 @ 33.5 %	375	27 @ 77.7 %
1907	992 @ 34.2 %	325	25 @ 76.0 %
1908	991 @ 31.9 %	325	15 @ 73.3 %
1909	527 @ 32.8 %	175	18 @ 77.7 %
1910	652 @ 32.6 %	215	35 @ 77.1 %
1911	669 @ 31.2 %	220	27 @ 77.7 %
1912	429 @ 31.3 %	140	29 @ 75.8 %
1913	382 @ 31.1 %	125	12 @ 75.0 %
Total	5776	1900	188 Tons

The initial success appears to have boosted confidence in the industry and inspired Messrs. Booth, Brooks & Richards to take a lease of the Penrhiw & Temple Mines in 1908. No doubt encouraged by their neighbour's apparent success, they then formed The Aberystwyth Silver Lead Mines Ltd. in 1909 with Captain Richard Richards managing both their mines. Despite producing 170 tons of indifferent grade zinc blende and 101 tons of average grade lead concentrate from Penrhiw between 1910 and '12, the partnership did not thrive. Booth & Brooks withdrew from the company in 1913 and left Captain Richards to superintend the 9 men below ground and 2 surface workers at Penrhiw.

The rapid invasion and fall of Belgium in 1914 must have created problems for the Rheidol Mining Co., and coupled with the response of the British Government in shrouding domestic mineral production in a cloak of secrecy has resulted in very little information being available on these mines during the Great War. At the end of the War the Phillips Commission reviewed the direction in which financial assistance had been administered to boost domestic mineral production and in 1920 a Board of Trade Commission reported their findings and recommendations. From these two reports, and those of the mines inspectorate, it would seem that some production took place at both Cwmrheidol and Penrhiw in 1914 though to what extent cannot be precisely ascertained. It would be reasonable to suppose that Cwmrheidol produced some ore in 1914, before the fall of Belgium, possibly 100 tons of blende, 30 tons of pyrite and maybe 5 tons of lead concentrate whilst Penrhiw possibly produced a few tens of tons of ores.

There was no activity at Cwmrheidol in 1915 whilst Penrhiw is recorded as having sold 76 tons lead concentrate and 33 tons of zinc blende from the efforts of 12 men underground and 7 on the surface. Penrhiw was in production in 1916 and can only have sold a few tons of ore, it would seem that Cwmrheidol Mine was still suspended on a care and maintainance basis.

A valuable insight into into the state of affairs at Cwmrheidol is provided by Astley, a government geologist, who visited the site on the 30th of August 1917 and noted that the mine had been closed since 1914. He met Henry Francis, the acting Mine Agent, who reported that he had just received notification that the mine had been sold but was unable to name the purchasers.

Astley also visited Penrhiw Mine but unfortunately the report on his visit appears to have been lost.

From later accounts, the purchasers of the Cwmrheidol Mine were Anderson & Anderson of London, a company who may have been involved with improvements in the dressing of poor ores. They employed 26 below ground and 12 on the surface in 1920, this was reduced to 1 below and 12 above in 1921, and when they sold the site in 1922, 2 men were employed below ground with another 6 on the surface. There are no records of production available during these years but it cannot have been a significant ammount and it is unlikely that any development work took place. Conveyances also show the involvement of one Alfred James Hodgkinson Carrington on the 27th of September 1918, but he appears to have taken a passive role until the mid 1920's.

According to some local sources, Penrhiw closed in 1917 or '18 and was allowed to flood up to adit level - the No. 6. However, the Mines Inspectorate's records show that Penrhiw was still being run by Aberystwyth Silver Lead Mining Co. Ltd. in 1920 with 4 men employed below ground, this is the last official entry for Penrhiw. It appears to have finally closed in 1924 with absolutely no hope of revival as the plant was then dismantled. This was confirmed by the late " Old Joe " of Ystumtuen, and also the late Alf Jenkins of Yspty Cynfin who informed me that he and Captain Richard Richards were the last men to have come up the ladders out of the workings before the pumps were stopped.

In 1923 the Saron Anthracite Collieries Ltd. of London took over the Rheidol Mine from Anderson & Anderson and employed 2 miners with 2 surface workers. This was reduced to a single miner and two surface workers in the following year and in 1925 and '26 only David Mason of Ystumtuen was employed as the caretaker.

Saron then appear to have relinquished the mine, but there is evidence to suggest that they let it to A.J.H. Carrington, a Consulting Mining & Civil Engineer of Lancaster Gate, London.

His background is uncertain but may very well have been in partnership with Messrs Bullivant of London as a co-patentee of an aerial ropeway system. There is no doubt that he was a man of considerable means and enthusiasm who had excellent connections in the mining world. He is still remembered amongst older people in the area and described as a most gentlemanly person of advancing years.

Carrington appears to have been assembling a portfolio of mines in the Rheidol Valley since the end of the Great War with the intent of working them collectively. His proposals were probably the best that had been put forward for many years but to attempt such a promotion at the height of the depression was doomed to failure.

In the September of 1926, Carrington supplied details of the Rheidol and other mines to John Agnew of Consolidated Goldfields, one of the most eminent engineers in the world at that time, with the running of a joint venture project in mind.

However, the climate was wrong and insufficient details could be given regarding the tonnages and grades of the reserves remaining in the mine. The figures which Carrington had supplied to Agnew were originally calculated by Henry Francis in about 1914, but the calculation were in somewhat archaic units and whilst quite realistic yields were presented, they could not be verified as parts of the mine were now inaccessible. Carrington's valuation of the mine and plant at this time was £ 8,000 which was fully supported by Captain John James of Talybont in a report written in July 1929.

John Agnew, now the chairman of Consolidated Goldfields, was approached again in December 1931 with a slightly revised edition of his proposals for The Rheidol Mining & Metallurgical Corporation in which the Rheidol Mine was offered as a 160 acre / 65 hectare Sett with 50,000 tons of ore reserves available for immediate extraction for £ 3,500 with £ 15,000 working capital required.

Agnew again advised Carrington that " this business would have no interest for us ". It is not made immediately clear in the Carrington reports that he did not own the mine but merely held an option to take a lease of the property. Despite these attempts, nothing ever came of the attempts to promote the Rheidol Mine and in May 1938 The Saron Anthracite Collieries Limited sold it to Maurice Moulton Dandruck of Austin Friars House in the City of London, but with Carrington and the Andersons to have Rights of Way over it.

Dandrlick was a European refugee who had fled to London in the mid 1930's. His background was never fully revealed, he always tried to give an air of affluence and superiority but his modus operandii was one of deviousness and half truths. I have never found one person who spoke a kindly word of him.

There can be no doubt that he saw the mine as a good business opportunity with the increasing hostilities in Europe, and very soon after the declaration of war in 1939, he was trying to persuade The Ministry of Supply to give him money to assist the war effort. Had he not been in financial difficulty at the time, and asked for a realistic sum he may have received a better response.

Several government geologists visited the Rheidol Mine in 1940 and failed to substantiate the picture which Dandrlick had set. The mine was only partly accessible and had not been worked or maintained for years and yet it was stated that he had spent tens of thousands of pounds on care and maintenance. The geologists were only able to view the lode in one place and the results of their sampling was rather disappointing. The pyrite, which was much needed to ensure the domestic supply of sulphur, was contaminated with zinc and silica and was only of " acceptable " quality. One of the co-directors in his Mineral Holdings Corporation, a Mr Wilson, was later found to be the receiver appointed to liquidate some of the assets but Dandrlick did not take this as a serious matter. He tried to re-write the geologists reports on the mine to promote it and again saw nothing wrong with this. The Cwmrheidol plant was said to be used as a central ore dressing facility for his other mines; Professor David Williams of the Royal School of Mines was told by Dandrlick that they had produced 500 tons of lead concentrate from a new mine near Tre'r Ddol but Williams was familiar with the site and considered that it had probably only produced about 25 tons of crude ore containing maybe 5 or 10 tons of concentrate.

Dandrlick had still not raised any finance by the end of the war and ran The British Iron Ore Corporation on the strength of the sale of ochre from the late 1940's.

In April 1951, Dandrlick pressed the Board of Trade into granting him an audience with the intention of squeezing some finance out of them but his arrogance failed to impress them and once again they turned down his request. In response he complained to the Lord Chancellors Office suggesting that if the Board of Trade would not give him any money, then they must think him a liar. Not wanting to be drawn into a legal trap, a five page list of conflicting accounts which had been submitted to them, was sent to him with a point blank refusal to give him £ 40,000 to develop his mine. At this point Dandrlick appears to have realised that there was no point in following up this matter. The portal of No. 9 collapsed at about this time.

Throughout the 1950's Dandrlick seems to have been contented with the revenue which ochre sales brought in. By this date the mill had been emptied and three undercover settling tanks had been constructed to collect ochre from the No. 6 Adit.

Circa 1960, he instructed the firm of Mackay & Schnellmann to undertake some work but they were very wary of running up a large account and when they submitted a small account, Dandruck refused to pay as the work had not been completed. By this time it appears that Dandruck was running three companies on the strength of the Cwmrheidol Mine; Vale of Rheidol Properties, Mineral Holdings Corporation and British Iron Ores Corporation.

In the late 1960's, the Passing of The Mineral Finance Act was intended to stimulate mineral exploration in the UK, by refunding 30 % of the expenditure. This precipitated a great deal of interest in Mid Wales and Dandruck was successful in attracting Continental Mining of Zurich into some form of joint venture scheme.

Mining Joint ventures can operate in several different ways. The vendor parts with a percentage of the property in exchange for finance. The finance can either be paid as cash or as work to a pre agreed value. Dandruck seems to have chosen the latter route and contractors moved onto the site to commence deep core drilling at the portal of the No. 6 Adit. When this was completed, the contractors moved to the portal of the No. 9 Adit and commenced clearing a drilling platform. Up to this point, Dandruck was resident at Cwm Rheidol but then moved to London and never returned to the area.

Originally, this drill platform was only supposed to be about 4 metres square but the manager decided that it would be more convenient if it was 7 metres square and then thought that 10 metres square would be better. The portal of No. 9 Adit had collapsed in the 1950's and it was not appreciated that a considerable head of water had accumulated behind the fall. During the final stages of excavation, the digger driver noticed that ochreous water was being emitted from fresh tension gashes and went to report the matter to the mine manager, Mr Grant. No sooner than he had left his machine, than a large volume of highly acidic ochreous water blew out the remains of the plug and caused considerable pollution to the River Rheidol. Due to a number of other factors, Grant was replaced with Mr Matt Blick as mine manager.

Blick then repaired the open portal of No. 9 adit, cleared the ochre, relaid the old rails, installed an air main and compressor, and finally cut a chamber for a drill rig at 358 metres / 1175 feet inbye. Six or eight men were employed on these works. With the drill rig now located about 40 metres south of the South Lode in the No. 9 Adit the length of the hole which was necessary was reduced to 99 metres / 325 feet. Three holes were drilled from this chamber before the mine was once again abandoned in the autumn of 1970.

Since then, the mine has stood idle, Continental Mining became involved with Andex Mines of Vancouver and the operation was taken over by Shannon Mining & Manufacturing circa 1973. Shannon was eventually wound up when it transpired that it was part of a scandalous international fraud. M.M. Dandruck died in about 1975 and his solicitor, Derek Sparrow, continued to administer the Mineral Holdings Corporation until it was wound up in the late 1990s.

