A Guide to the INDUSTRIAL ARCHAEOLOGY of Mid-Wales
The centre two pages of this booklet are in the form of a map with every site mentioned in the text shown. This, together with the National Grid reference, will enable sites to be identified, even though, especially in the case of lead mines, they are not on a metalled road.

Front cover: Underground waterwheel at Ystrad Einion mine (22).

Author's Preface. The appearance of this modest publication has been planned to coincide with the 1984 Annual Conference of the Association for Industrial Archaeology in Aberystwyth. In preparing it I must express my gratitude to many friends and fellow workers, but especially to my co-authors and former colleagues Brian Malaws, who has also drawn the map, and his wife Hilary. Thanks also to Fleur Michael and Iain Wright in the photographic unit of the Royal Commission on Ancient Monuments in Wales (RCAM) for supplying photographs, and to my friend and neighbour Ceridwen Lloyd Morgan for the specially prepared appendix on the nature of the Welsh language as a useful guide to the understanding and pronunciation of local place-names. David Bick has kindly allowed me to use his photograph of Llywernog mine; the remaining photos and drawings are the copyright of the National Monuments Record for Wales and are reproduced by kind permission of the Secretary of RCAM. Finally, Margaret Akers has dealt admirably with the typing.

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Llanafan, Aberystwyth

This booklet has been produced in order to draw the attention of visitors to the remains of buildings or structures which can be classified as 'industrial archaeology'. This classification is not clearly defined and includes not only those of the dominant lead mining industry for its ancillary industries, but transport, bridges, the varied uses of water power, forestry and agriculture and the research establishments associated with them.

Preference is given to sites which are either accessible to the public, or which can be seen and understood from a public road; a few of them are run as commercial enterprises. Some are clearly on common land, others on unfenced land whose ownership is difficult to establish, but, in all cases, the land and its usage should be respected. When a site is on enclosed land and the owner or occupant is at hand permission should be sought; it is rarely refused.

All mine sites are potentially very dangerous due to unstable buildings and unprotected open shafts; the element of risk is always present and it is unwise to go alone.

Geographical and Historical Introduction. The differences between the folk of North Wales and South Wales are as marked as those between Northumberland and Devon. In Wales there is an ill-defined area, or 'buffer-state', Mid-Wales; this comprises the old county of Cardiganshire and most of the counties of Montgomery, Merioneth and Radnor with Aberystwyth as the most important cultural centre.

The uplands, blessed with a good rainfall, provide the sources of both the Severn and the Wye, whilst from the western side of the watershed the Teifi, Ystwyth, Rhedol and Dovey (Dyfi) flow into Cardigan Bay. This upland area at about 1500 ft above sea level contains some of the least populated land in Britain; it is unspectacular undulating moorland with acid soils given over to sheep and forest. Here are to be seen the rare red kite and the mounted shepherd with his happy dogs, whilst our ears are delighted with a Schubertian melange of a mountain stream, the bleating of distant sheep, the barking of a far-off dog; an idyllic scene, alas all too often shattered by the fiendish roar of earth-skimming military jets. In contrast, the coastal strip and some of the alluvial soils of the river mouths are fertile. Both Borth Bog (Cors Fochno) protected from the sea by a sand spit.
several miles long and Tregaron Bog (Cors Goch) at 53 ft, formerly the floor of a moraine-dammed lake, are of considerable botanical interest.

With the exception of the rhyolitic lava intrusions in the extreme north and south of the area, where gold has been found, all the exposed and underlying rocks are sedimentary shales and grits, mostly Silurian with small areas of Ordovician and the quality of building stone is poor. However, as these rocks are badly broken by faults and cracks, they contain very rich deposits of lead and silver lodes which have been exploited from earliest times to the present century. These riches have been shared by a few powerful families, notably the Prices, Vaughans and Powells. With the exception of Nanteos, the home of the Powells, the houses are not distinguished, and the northern part of the county lacks the attractive smaller houses to be seen in the south and in Merioneth, north of the Dovey.

Cardiganshire, or Ceredigion, now forms the northern limb of the unwieldy gargantuan county of Dyfed, whose creation and survival depends on political manoeuvring and expediency. It has Carmarthen as its county town. Llanelli, Haverfordwest and Pembroke have claimed this distinction, but not Aberystwyth, which has every reason to consider itself the cultural capital. To some it is just a small seaside town at 'the end of the line' but there is much to commend and endear it to both residents and visitors; its twelve thousand inhabitants are fortunate in many ways. It has the oldest college of the University of Wales; it is the home of the National Library of Wales, one of the six copyright libraries in the British Isles. Here too is the Welsh School of Librarianship, the Welsh Plant Breeding Station, the Forestry Commission headquarters for the Principality, the offices of the Royal Commission on Ancient Monuments in Wales and diverse other organizations. The presence of these establishments gives the small town an unexpected cosmopolitan atmosphere in which a good deal of its cultural life is self-generated but the concert hall and theatre attract visiting artists of international calibre.
It is an intimate, friendly town and those who live or work there find that on every corner there stands a friend eager to discuss the state of the world or to entertain one with wholesome gossip.

The plan of this guide differs from that followed in previous ones which covered Norfolk and Lincolnshire. With obvious exceptions, including the often dramatically sited castles, the scale of archaeological monuments in Wales is small; an assessment especially true of this area. Here we have no great warehouses, breweries, maltings or distilleries, nor do we have large manufacturing industries such as those found in some rural counties of England. Throughout Wales the greatest and most lasting monuments to industry are those left by generations of miners and quarrymen; many of these true Welshmen were from immigrant stock, some skilled miners came from Europe, many in mid—Wales from Cornwall. Their alien names are recorded in the burial grounds where they lie in peace with their mates who shared the privations and dangers of a calling as fearful and perilous as that of the sea.

The guide has been designed to include the greatest concentration of sites in the hinterland of Aberystwyth, but with selected sites further afield. All the sites will be given their most well-known names as appear on published maps and guides and all will have their grid references, for railways their beginning and end, whilst in the case of reservoirs, the centre of the largest dam. The area is covered by the Ordnance Survey 1:50,000 series sheets 124, 125, 135, 136, 146 and 147 and on the older One-inch cover, sheets 116, 117, 127, 128, 139, 140 and 141.

The numbering of sites is quite unrelated to their importance, age or quality. It has been arranged merely to facilitate reading of the map. In general, the sites included will be worth a visit, but as the great majority are totally unprotected, they may at any time suffer from stone robbing, natural decay and collapse, use as an unofficial rubbish dump or be cleared and afforested. For the full appreciation of any lead mine site in the area, David Bick's booklets are essential companions.

The following descriptions are for various reasons of differing lengths and will be presented under four headings:

Metalliferous Mines
Slate Quarries
Railways
Mills and Miscellanea.

As many sites within the classes have features in common, each section will be preceded by a short explanatory introduction.

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Metalliferous Mining

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Slate Quarrying

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Railways

GMetalliferous Mines

Metalliferous Mines. There is little doubt that the most important industry enshrined in the landscape of Mid-Wales is to be seen in the remains of mining for lead and the associated metals. In some cases the exploitation goes back to Roman times, often with later periods of activity continuing to the present century. In medieval times the monastic houses of the Cistercians, situated 'away from the haunts of man' (today these austere foundations usually harbour a caravan site), had interests in mineral deposits which were not spiritual. After their demise certain favoured families became 'entrenched' and some made and lost vast fortunes whilst some still retain the mineral rights today. Cardiganshire was the main centre of the Society of Mines Royal in the early 17th century when characters such as Sir Hugh Myddelton and Thomas Bussell (co-Surveyor General) were involved. In the 18th century the Company of Mine Adventurers became active under Sir Humphrey Mackworth and William Waller and later Lewis Morris the cartographer.

It was in the second half of the 19th century that the industry reached its zenith. This was a time when techniques of working had been improved by the advent of compressed-air drills, whilst after the turn of the century both oil-engines and eventually electric power enabled much deeper working. However, the industry was always at the mercy of foreign suppliers who could exploit cheaper labour and richer deposits of ore. The uncertain state of the world and the resilience of the mining corporations have prompted deep borings to be made in quite recent times, whilst improved methods of handling spoil and more efficient ways of extraction have made it worth re-working some of the previously discarded waste heaps.

Not only have mining and quarrying on a large scale made their mark on the landscape to a degree as lasting and eloquent as the Ice Age, but the ruins of the buildings are to be compared in their way to those of the great castles. Despite the poor building stone, the 19th century engineers took great pains to get the best possible for the construction of the great water-wheel pits, engine-houses and stone crushers, and all structures subjected to severe vibration and shock. A great deal of ingenuity was displayed in the use of heavy timbers to distribute loading and to reinforce the masonry.

Every mine had its levelled working platforms where hoppers and crushers were situated, whilst at a lower level the remains of buddies can often still be seen. Normally circular, these are shallow settling-tanks used for the gravitational separation of the crushed ore. All these areas maintain a high level of lead and support little vegetation, but any water-filled hollow can support healthy horsetails (Equisetum). On the hillsides above can be seen the black burrow-like openings of adits with a spread of excavated spoil on the slopes beneath, the size of this deposit usually indicating whether the adit was a short trial tunnel or one yielding ore.

Converging on all mine sites will be either one or a complicated system of leats or water channels taking water for the series of water-wheels which were used for pumping, hauling, crushing and operating other machinery; a considerable quantity of water was needed for the buddies. All possible use was made of the water and a wheel at the lowest level could be utilised by transmitting its power through reciprocating pumping-rods or cables over considerable distances. The leats, sometimes rock
cut and often carried over gullies by means of wooden channels, stretched for miles along the contours and were fed by small streams on their course. The water was often stored in specially built reservoirs, and fortunately many of these have been preserved by the angling community. These leats which carried unpolluted waters and consequently support vegetation are best seen when the sun is low on a spring morning or evening.

Unlike Cornwall where Welsh coal could be shipped across the Bristol Channel it was difficult and expensive to transport coal to the remote lead mines of central Wales until the advent of railways in the mid-19th century and for this reason water continued to be used, eventually providing electric power. Consequently, steam engines were not common and when erected were done so by Cornishmen. When installed they were quite often kept in reserve for times of extreme drought or frost when the leats could not function.

Although lead was the principal metal mines in the area, as might be expected others were found too: of these gold is the best known, being mined at Clogau between Dolgellau and Barmouth and at Dolaucothi, south of Lampeter. Gold from the former has been used to make wedding rings for the Royal Family. In association with lead, silver was found in considerable quantity and used in the production of the 17th century coinage struck at the Aberystwyth and Furnace mints. Some copper was found but in quantities that did not compare with the deposits in Anglesey.

Apart from the dominant mines on the scale of Cwmystwyth which defy conifers and have made an indelible mark on the face of the land, reminders of this past industry are evident on almost any journey in the area. Tantalizing glimpses of grey scree pierce the mantle of forest; hillsides are scarred with trial trenches and the black and mysterious mouths of adits are irresistible to all but the most timid walker.

18. **Rhoawyddol Lead Mine** (SN 838975). Now partially afforested, this mine was reputed to have been worked in the 12th century, but its most productive periods were in the 1840s and 1880s. The spoil dumps are now landscape features and the shell of the large dressing mill, together with the 45ft wheelpit, ore bins and short stretches of tramroad remain.

19. **Llancynfelin Lead Mine** (SN 651922). Known to have worked in the 18th and 19th centuries and possibly of much greater antiquity, little now remains save the notable chimney stack of a long-vanished Cornish engine-house.

20. **Bryndyfi or Neuadd Llwyd Lead Mine** (SN 683934). A visit to this mine is worthwhile for the magnificent view it commands of the Dovey estuary and for the quality of its architectural remains which stand as a manifestation of arch-skullduggery. It was started in 1881 with a good deal of publicity, but no sound geological prospecting had been done and investors were duped by ore being brought from elsewhere. Consequently, it closed after a few years leaving almost intact fine ore bins, a crusher house with a 45ft wheelpit, four well preserved buddies with an associated 22ft wheelpit and a considerable length of tramroad.

21. **Ystrad Einion Lead Mine** (SN 707938). Now buried in forestry at the head of the beautiful Artists Valley, this site was active only during the latter part of the 19th century. It is notable for the 16 ft underground water-wheel which, with its pumping and drawing machinery, survives largely intact although viewing is not advised, in fact the access has been blocked to assist its preservation. The remains of the crusher house, buddies and three wheelpits can be seen; the site is well worth a visit too for the exceptional tearooms at Vyn-y-cwm about half a mile down the valley.

22. **Clogau Gold Mine** (SH 676201). Gold was not discovered here until the second half of the 19th century; it has been worked intermittently ever since and even now exploration is planned to ascertain whether commercial mining is viable. At the car park (SH 668198) a display board gives an account of the operations and there is a walk along the river where gold has been panned.

23. **Esgairhir** (SN 735912) and **Esgairfraith** (SN 741912). These two lead mines north of Nant-y-moch reservoir covered a large area and were worked by the landowner Sir Carberry Pryse from 1689, thereby challenging the Crown monopoly. There were several shafts including...
one for copper, and a shaft on the northern slopes was pumped by a half-mile long run of flat-rods. Many fraudulent claims were made regarding the richness of the mines and eventually it went into liquidation in 1882. The engine-house still stands, as do wheelpits, dressing floors and tramroad embankments, and evidence can be found of early workings.

24. Dyfgwym Lead Mine (SN 850931). A potentially lucrative mine with a history of mismanagement in the 19th century, it later re-opened yielding several thousand tons of lead ore before its final closure in 1935. Visible remains include dressing floors, wheelpits and a horse-whim circle.

25. Dylife Lead Mines (SN 856940). Remains of very extensive workings including the wheelpit of the largest wheel, 63ft in diameter. Work in the area started in Roman times and throughout the 18th century involving Mackworth and Waller; it reached its peak production in 1863. Some of the miners' cottages have been rehabilitated.

29. Hafan Lead Mine (SN 732880). This mine was worked by Myddelton in the 17th century and subsequently by Waller. Mining operations continued with varying degrees of success until about 1900. The site is worth visiting in conjunction with the unconnected Hafan tramway for its impressive location overlooking the Cyneiniog Valley.

31. Bryntail Lead Mine (SN 915869). The site now dominated by the Clywedog Dam is the first such monument to be taken into guardianship by the DoE. The consolidated remains are those of the Barytes mill; these include massive Yorkshire stone slab tanks, but the processes used are far from clear. A footpath leads to the remains of the old pumping buildings at Gundry's shaft in the hill above from where an incline drops to a 60ft wheelpit close to the river.
Former water-wheel at Llwynnog lead mine (46).
32. Penyclun Lead Mine (SN 932874). Most of the remains of the site have been cleared, except for an unusual small rotative Cornish engine-house and stack.

33. Van Mines (SN 942878). In the 1870s this was one of the most productive lead mines in Europe, but little remains today except three yellow-brick chimneys. So rich was the output of the mines that a standard-gauge railway six miles long was constructed in 1871 to join the Cambrian main line at Caersws. The lode was so wide that it had to be filled with packed waste to prevent collapse, a technique not used elsewhere in the Principality.

40. Bronfloyd Lead Mine (SN 659835). An interesting site first worked by Myddelton and Bushell and in the mid-18th century by Lewis Morris by means of levels and open cast. Later in the mid-19th century it had a new lease of life and lower lodes were mined from four shafts. There are well-preserved remains of buddies and tramways and evidence of long runs of pumping rods. The site has recently been cleared of growth and fully surveyed.

41. Daren Mine (SN 677828). A lead, silver and copper mine of great antiquity, it was largely worked-out by the middle of the 19th century, but enjoyed a further profitable period in the 1870s. Extensive open-cast workings can still be seen together with ore slides and the remains of a tramway.

42. Goginan Mine (SN 690817). A highly-prized lead and silver mine worked by Myddelton, Bushell and the Company of Mine Adventurers in the 17th and 18th centuries. By the time of its closure in the late 19th century, 25,000 tons of lead ore and 500,000 ounces of silver had been raised. Little evidence remains today except for Taylor's inclined plane of the 1840s and the village of miners' cottages.

43. Cwmerfin Lead Mine (SN 695829). This is an early site operating in the first half of the 17th century under Myddelton and Bushell. It was worked successfully in the 1860s when a good yield of silver was produced. As at Cwmsymlog the site has been landscaped and features lost, but we are fortunate in still having one of Bushell's drainage adits very low down in a field to the south-west. Here the adit was formed by the cut and cover method of tunnelling; the sides are of dry rubble and the roof is of slabs. By this means Bushell was able to drain several local mines.

44. Cwmsymlog or East Darren Lead Mine (SN 699837). A very rich mine, extensively worked from the 17th to the 19th century. Much of the site has recently been landscaped and re-seeded in order to prevent the spread of lethal dust, but one landmark survives: the chimney of a ruined engine-house.

45. Nantyrarian Mine (SN 705814). A small lead mine with two wheelpits, a ruined crusher house and two buddies still identifiable.

46. Llywenog Mine Museum (SN 733809). Probably first worked in the 18th century, this is now an excellent museum where all the constituent parts of a typical mid-Wales lead mine can be investigated. For anyone with even a passing interest in lead mining this should not be missed.

49. Ystumtuen Lead Mines (SN 735790). A group of four mines clustered around the village of Ystumtuen: Waller, Bushell and the Taylors worked here and evidence of the long and extensive workings lie all around the area. Crusher houses, wheelpits and an engine-shaft collar with an arched bob-pit chamber are among the relics which can still be identified.

50. Temple Mine (SN 749792). As so many lead mines are beautifully situated it might seem invidious to single out one, but Temple Mine, a short distance from Parson's Bridge, is the exception. It is a blissful, peaceful site set in the narrow, deep and wooded gorge of the upper Rheidol which has cut for itself grotesque pot-holes or deep pellucid pools; surely Attila would have tarried here and mused. Yet the engineers and the miners were not poets; their dreams albeit naive, were to make money — alas the mine only worked for a decade.

The mine is set on the west bank where a rock-cut platform houses the buddies and hoppers; further upstream is a splendid wheelhousing built up from the river bed. Adjacent is
a vertical shaft and beyond, a cascade of scree falls from an adit higher up the bank from which a graded path leads down to the site of the original 'Parson's Bridge'.

53. Grogwinion Lead Mine (SN 713723). An old and rich mine dramatically set on the steep 700 ft slopes rising up from the meandering river Ystwyth, the great quantities of waste from the adits resembling natural scree.

54. Frongoch Lead Mine (SN 723745). Until recently this site was one of the most dramatic, extensive and well-preserved mine sites in the county with a number of good and accessible buildings; now alas it serves as a squalid monument to an indulgent society content to foul its own nest with its own hideous detritus. In short, Frongoch has become an unofficial rubbish dump for numberless derelict cars, washing machines, TVs, mattresses, noisome domestic garbage and dead sheep.

Those prepared to endure these cannot fail to observe the remains of three engine-houses and an impressive crusher house with two wheels, the larger one said to be used for pumping. The most impressive building is the large Cornish-type engine-house which housed a 60in, 11ft stroke steam engine for pumping the old 'Vaughan' shaft (see plan). The eastern side of the building has collapsed, but on the opposite side the boiler house and coal bunker can be traced. Unusual features are the two counterbalance pits; that to the west is original, but when the shaft was deepened the second was added obliquely to the south-east in order to clear the existing culvert outlet and to avoid weakening the foundations of the house. To the north-east are the remains of a winding engine-house; the crusher house must have been most imposing when intact, its masonry is massive as are the holes which carried beams supporting the crushing mill. At the far end of the site the opencast is worth a visit and there are a number of shafts sited down the slope to the west where the workings were known as the Wemyss Mine (SN 716742); both were combined in the later periods. Apart from the recent treatment the site has received, excavation of grit and stone has destroyed much of the working area to the south; from here a long incline passing under the road carried the ore to the later crushing mill. The smithy stands and some

buddles are visible; fortunately, Llyn Fronoch to the north-east which provided water power is still filled and gives pleasure to anglers.

The shell of the powerhouse (SN 706743) that contained the water- and steam-powered generators for the last phase of working at the adjacent mines of Frongoch and Wemyss still makes an impressive monument beside the road.

55. Level Fawr Adit Mouth (SN 739722). This handsome portal to the longest drainage tunnel in mid-Wales served four mines and was commenced in 1785. The keystone inscription also includes crossed miners' picks. Nearby on the roadside is an accounting house where the miners drew their pay. Of the four mines, least remains at Penygist (SN 745716); the wheelpit at Logaulas (SN 743717) can still be seen, whilst a long leat, wheelpit and dressing floor, all dating from the 19th century, survive at Glogfach and Glogfawr (SN 747706).

56. Cwmystwyth Lead Mine (SN 805746). Possibly the oldest, richest and most extensive mine in the area, it was almost certainly mined in Roman times and later a possession of the Cistercians of Strata Florida Abbey, although the dating and identification of such early works has been masked or eliminated by later workings. Leland visited the site and observed that lead had been smelted there. In the 1640s the mine was worked by Thomas Bushell, in the 1780s most successfully by Thomas Bonsall, and yet another period of prosperity began in 1848 when John Taylor was in charge. As was the case at Frongoch the mine was worked in the present century, first by Henry Gamman and later by Cwm Ystwyth Mines Co, who ceased trading in 1923, and interest in the potential of the mine continued after the last war when bores were made. In recent years it has become the haunt of the red kite and mine explorers. The large wooden and corrugated-iron crusher house is a conspicuous relic; creaking and clattering in the wind it serves as an eloquent and evocative reminder of centuries of human endeavours.

65. Dolaucothi Gold Mines (SN 664402). Extensive surface and underground evidence illustrate the exploitation of rich gold deposits from Roman times to the present century. The site is situated near the village of Pumpsaint and
This area levelled in recent times.

Frongoch & Wemyss Lead Mines, Cards.
Remains of 60in pumping engine-house at Frongoch lead mine (54).

consists of large opencast pits and trenches together with underground workings and an unusual and extensive series of aqueducts and tanks. It is now owned by the National Trust, and run jointly with the Department of Mineral Exploitation of the University of Wales in Cardiff and the Archaeological Unit of Lampeter University. It is used both for training students and as a novel tourist attraction.

66. **Nantymwyn Mine** (SN 783446). This was the most important and largest lead mine in the south of our area; it started in the last quarter of the 18th century and continued until the 1930s. Many opencasts, buildings and the dressing floor survive.

**Slate Quarries**

**Slate Quarries.** The largest and best known slate quarries are situated in North Wales; Bethesda, said to be second in size only to Carrara in Italy, still works, but the impressive Dinorwic quarries and splendid workshops are now a slate museum. The slate extended to the south into mid-Wales, the greatest concentration being around Corris. Some of the slate was mined and quite a number of sites produced a very hard slate which was used for slabs, and is cut rather than split like the beds used for roofing slates. A characteristic feature of the slate quarries were the gravity operated inclines, each with its sturdy drum-house resembling a little temple, alas not many survive. Many disused quarries have been covered by a blanket of forestation and the buildings demolished and some have fallen victim to wildly extravagant road improvement schemes. Ingenious use of waste slate can be seen in the vertically set slate-slab fences, secured at the top by twisted wire, and also in the often spectacular cantilevered slate steps projecting from the face of massive retaining walls.

As in the case of lead mining the quarrying of slate has left an indelible mark on the landscape. The amount of waste material produced was prodigious, and the weight and volume of the dressed slate presented a formidable transport problem which was solved by the narrow-gauge railways. It is ironic that the virtual eclipse of the slate industry coupled with the disappearance of steam from our main line trains has resulted in a fantastic interest and enthusiasm for the narrow-gauge lines, which at the height of the tourist season see more traffic than in their heydays.

5. **Hendre-ddu** (SH 798126). A remotely sited quarry at the top of the Angell Valley, along which a tramway connected with the privately financed Mawddwy Railway that joined the Cambrian line at Cemmaes Road. The quarry closed in 1946.

6. **Ratgoed** (SH 784119). About two miles north of Aberllefenni, this small quarry is one of the most remote in the Corris area but working
Crusher house remains at Cywystwyth (lead mine) [65].
View of Gaewen slate quarry from the incline at Abercwmboi (9).
continued into the second World War. It was connected to the Corris Railway by the horse-worked Ratgoed Tramway.

7. **Cymerau** (SH 777107). A small quarry beyond Aberllefenni, it continued to be worked by six men up to 1972.

8. **Aberllefenni** (SH 768103). Situated at the top of the beautiful Dulas Valley east of Corris, these quarries were worked in the 16th century, but mined in the early 19th century. From 1859 the slates were transported by the horse-worked Corris Machynlleth and River Dovey Tramroad to the Dovey beyond Machynlleth; in 1879 this was later converted to steam operation and became the Corris Railway.

9. **Abercwmiddau** (SH 746089). The hard slate slabs from here were transported via a tramway to the Corris Railway. The remains are extensive although the quarry closed before the end of the last century.

10. **Llwyngwern** (SH 758085). A small quarry connected to the Corris Railway and closed around 1950. The lower part of the site is now occupied by the National Centre for Alternative Technology.

11. **Braichgoch** (SH 748078). As often happened, the quarry was amalgamated with others in the area; in this case Abercorris (SH 754085), whose great slate-working sheds were demolished in the van of road improvements, and Gaewern (SH 745086), which was an underground working and one of the earliest, being opened around 1820. This, with Aberllefenni, is still worked by the Wincilate Group, who specialize in slabs cut to regular sizes for wall facing, memorials and similar inscribed tablets.

12. **Bryneglwys** (SH 695054). Slate was mined here from 1847 by means of a vertical shaft and tunnels. Water power was used for hauling and an incline later replaced the shaft. Being a little over seven miles from the sea, the slate was transported to Aberdovey via the well-known Talyllyn Railway (opened in 1865) which extended above Abergynolwyn into the quarry workings. The quarry closed in 1948 and most of the site has been afforested.

### Railways

**Railways.** One cannot write of railways in Wales without mention of the "Great Little Trains". The fact that standard-gauge railways were difficult and expensive to construct through the mountainous districts, coupled with the success of the Ffestiniog Railway in North Wales, gave rise to many schemes for narrow-gauge lines further south. The Corris Machynlleth and Rover Dovey Tramroad (later Corris Railway) of 1859 is the earliest in the area, whilst the Vale of Rheidol is a relative newcomer at only 82 years old. The narrow-gauge railways generally sought the shortest route from their associated mine or quarry to the nearest navigable river or harbour; passengers were of little importance.

However, the area is not without its full-size railways, even today. The line across the country to Aberystwyth and up the Cambrian Coast to Pwllheli was built by a series of small companies that eventually merged to form the Cambrian Railways (always plural!).

From the south came the grandiose-sounding Manchester and Milford Railway; this ill-conceived scheme, rather than struggle through the inscrutable mid-Wales uplands, turned away from its plotted course and headed through easier country to peter out in Aberystwyth; from it ran the Aberaeron branch and Newcastle Emlyn line. Cardigan was also rail-served by a sinuous little branch from the South Wales trunk route to Fishguard.

Fortunately, today the Cambrian Coast lines are intact; surprisingly, in view of the terrain, there are few impressive earthworks or viaducts save Talyllyn cutting and the infamous Barmouth Bridge. The remaining narrow-gauge railways now depend on volunteers and hordes of tourists for their very survival, and deserve all the support they can get.

A name which turns up repeatedly in connection with the construction of railways in mid-Wales is that of David Davies of Llandinam who later became a leading light in the highly successful Ocean Collieries and Barry Dock & Railway in South Wales; his memorial statue stands beside the road in Llandinam (SO 026886).
1. Clogau Gold Mine (SH 676201) 37. Llanidloes Station (SN 957844)
2. Penmaenpool Bridge (SH 695185) 38. Aberystwyth Harbour (SN 581812)
4. Fairbourne Railway (SH 615128-616149) 40. Bronfolland Lead Mine (SN 669835)
5. Hendre-ddu Quarry (SH 798126) 41. Daran Lead Mine (SN 677828)
6. Ratgoed Quarry (SH 784119) 42. Goginan Lead Mine (SN 690817)
7. Cymerau Quarry (SH 777107) 43. Gwmerfin Lead Mine (SN 695829)
8. Aberllefeni Quarry (SH 768103) 44. Cwmshynog Lead Mine (SN 699837)
9. Abencwmeiddau Quarry (SH 746089) 45. Nantyrarian Lead Mine (SN 705814)
10. Llwyngwern Quarry (SH 758085) 46. Llywernog Lead Mine (SN 733809)
11. Braichgoch Quarry (SH 748078) 47. Manchester & Milford Railway (SN 445372-585816; SN 899802-955820)
12. Talylllyn Railway (SH 586005-678068) 48. Vale of Rheidol Railway (SN 585816-738770)
13. Bryn峨ys Quarry (SH 695054) 49. Ystumtuen Lead Mines (SN 735790)
15. Talerdig Cutting (SH 930008) 51. Devil's Bridge (SN 742771)
16. Aberdovey Harbour (SN 614959) 52. Abermawger Saw-mill (SN 666737)
17. Dovey Junction Viaduct (SN 695979) 53. Groswynion Lead Mine (SN 713723)
18. Rhoswydol Lead Mine (SN 583875) 54. Ffrochog Lead Mine (SN 723745)
19. Dovey Furnace (SN 685952) 55. Level Fawr Adit Mouth (SN 739722)
20. Llancynfelin Lead Mine (SN 651922) 56. Cwmystwyth Lead Mine (SN 805746)
21. Bryndyfi Lead Mine (SN 683934) 57. Aberaeron Harbour (SN 455629)
22. Ystrad Einion Lead Mine (SN 707938) 58. Felin Gffur (SN 720643)
23. Esgairhir Lead Mine (SN 735912) 59. Elan Valley Reservoirs (SN 925645)
24. Dyfnogw Lead Mine (SN 850931) 60. New Quay Harbour (SN 390600)
25. Dyliife Lead Mines (SN 856940) 61. Cardigan Harbour (SN 178458)
26. Lerry Tweed Mills (SN 651890) 62. Felin Geri (SN 300423)
27. Ceulan Woollen Mill (SN 658894) 63. Maeslyn Mill (SN 368448)
28. Hafan tramway (SN 626886-723878) 64. Rock Woollen Mills (SN 450420)
29. Hafan Lead Mine (SN 732880) 65. Dolaucothi Gold Mines (SN 664402)
30. Clywedog Reservoir (SN 913870) 66. Nantymwyn Lead Mine (SN 783446)
32. Pencrclune Lead Mine (SN 932874) 68. Alltcafan Mills (SN 386392)
33. Van Lead Mines (SN 942878) 69. Penllyn Mill (SN 386392)
34. Wallog Lime Kiln (SN 590857) 70. Hafanon Creamery (SN 355386)
35. Felin Gyffin (SN 642863)
3. **Barmouth Viaduct** (SH 622152). The longest timber estuarine bridge in Britain at 800ft long, it carried the Cambrian Coast line across the Mawddach. There are 113 spans made of 500 timber piles. The original iron rolling centre-section was replaced by a steel lattice swing-bridge in 1899.

4. **Fairbourne Railway** (SH 615128-SH 616149). Unexpectedly this ‘miniature’ railway with a 15in gauge and operated by scale models of large locomotives, started its life as a 2ft gauge horse tramway in the last century. Laid by a Mr McDougall (better known for his self-raising flour), it was used in the construction of a small seaside village; in 1916 it was re-gauged and has been a tourist line ever since.

12. **Talyllyn Railway** (SH 586005 - SH 678068). Gauge 2ft 3in. Opened in 1866. Although it was the first narrow-gauge railway to be promoted as a passenger carrying line, its main function was to transport slate from the Bryneglwys quarry south of Abergynolwyn the 7½ miles to Tywyn for transhipment to the main Cambrian line; it was steam operated from the beginning. Despite the closure of the quarry in 1947 a skeleton service was maintained; fortunately for all railway lovers a group of enthusiasts met in 1950 and formed the Talyllyn Railway Preservation Society. Since then much hard work has been done by members both on the track and rolling stock, and to their credit the line with its five steam locomotives is flourishing and is one of the most popular tourist attractions in Wales. One of the best known and loved characters associated with the resuscitation of this delightful line was the writer of so many books about engineers and their works, the late Tom Rolt.

14. **Corris Railway** (SH 770095 - SH 745014; formerly to SN 711994). Gauge 2ft 3in. Opened 1860, closed to passengers in 1931 and goods in 1948. This six-mile line from Machynlleth to Aberllefnant was the first to be constructed in mid-Wales and its original purpose, when it was a horse tramroad (11 miles long), was to carry slate to a quay at Derwenlas on the River Dovey. The railway company was unusual in having a special schooner, ‘Aberllefnant Quarry Maid’, built for them in 1859 which sailed from
the quay until the main railway line to Aberystwyth was built in 1863; from then on slate was taken by rail to the port of Aberdovey.

15. **Talerddig Cutting** (SH 930008). Excavated for the Newtown and Machynlleth Railway and opened in 1863, at 693ft above sea-level this was the highest point on the line and is still in use. When cut sheer through the rock 120ft in depth, it was the deepest cutting in the world; the exposure of the geological features led to the discovery of what are now known as 'Talerddig grits'.

17. **Dovey Junction Viaduct** (SN 695979). A wooden piled structure similar to the much larger Barmouth Bridge, carrying the northern coastal line of the Cambrian Railways to Pwllheli. It is about 360 ft long and has eleven pairs of wooden piles on the north side and four on the south; the main section has four composite steel spans and girders.

28. **Plynlimon and Hafan Tramway** (SN 626868 — SN 723878 (incline foot)). Gauge 2ft 3in, opened in 1897 and closed in 1899. A seven mile long tramway designed to carry 'granite' road setts from Hafan quarry. It was steam hauled up to a height of 800ft and an incline reached the higher levels where there were several branches. One bridge survives at SN 645879; the main loco (originally built for a Brazilian sugar-plantation) was eventually sold to the Vale of Rheidol Railway.

37. **Llanidloes Station** (SN 957844). An imposing, intact, Georgian-style edifice built in 1864 by the Llanidloes & Newtown Railway as a joint station to be shared with the Mid-Wales and Manchester & Milford companies. Once threatened by the ubiquitous 'road improvements' this grade II listed building is well worth a short deviation from the main road.

39. **Aberystwyth Cliff Railway** (SN 583825). A funicular railway connecting the extreme north end of the sea front to the top of Constitution Hill where a camera obscura and other amenities were established. Originally it was operated by water-balance and had the unusual distinction of being the fastest in Britain; it is now electrically operated. The attractive station is dated 1896.

47. **Manchester and Milford Railway** (SN 445732 — SN 585816; SN 899802 — SN 955820). The extraordinary M & M was authorised in 1860 to construct a line between Pencader, north of Carmarthen, and Llanidloes as part of a grand trunk route between Manchester and the deep-water port of Milford Haven. A start was made from a junction with the Mid Wales Railway, just south of Llanidloes, only to run out of money three miles on near Llangurig. Better progress was made with the southern section of the line up the Teife Valley, until Strata Florida was reached, where the financial impossibility of joining the two railways across the Plynlimon massif was at last realised. Having carried but one train, the northern section was abandoned whilst the remaining 27 miles were extended westward to Aberystwyth in 1867 in an attempt to salvage something of this unfortunate scheme. The line became an important, if somewhat slow, rural link between Aberystwyth and Carmarthen, but inevitably fell victim to the Beeching 'axe' closing section by section until final shut-down in 1973.

The remains are not notable, but one can always dream of the extensive tunnels, colossal earthworks and the 240ft high, 170ft span bridge across the Ystwyth river that were planned for the mountain section but never built.

48. **The Vale of Rheidol Railway** (SN 585816 — SN 738770). Gauge 1ft 11¼in. It climbs the twelve miles from Aberystwyth at sea-level to Devil's Bridge at about 600ft. At present this popular tourist attraction has the distinction of being the only steam-hauled railway run by British Rail. Whereas most narrow-gauge railways in the Principality were built to carry slate this was planned to carry lead ore from the several mines in the Rheidol Valley. Building commenced in 1901 and the line was opened for freight traffic in the following year; a passenger service followed soon after. However, its completion coincided with a decline in the lead industry but during the first World War considerable quantities of timber were sent for export to South Wales for use in the collieries. The original terminus was on the quay at Aberystwyth. The line was taken over by the Cambrian Railways in 1913 and subsequently by the Great Western
Railway who, in 1937, replaced the old wooden coaches with the present steel ones. Finally it became vested in British Railways in 1948 and has since survived several threats of closure. The single line is operated by three steam locomotives, which have recently been converted to oil burning to lessen the risks of sparks causing forest fires, and happily a variety of former liveries have been re-introduced.

16. Aberdovey Harbour (SN 614959). The modest facilities here hardly justify the term of harbour, but its extensive use in the 18th and 19th century demonstrates how early mariners utilised the tidal water and its position at the mouth of the wide estuary to great effect. A great deal of slate was exported from here; today much use is made of the port by the Outward Bound Sea School, and there is a small but interesting maritime museum.

19. Dovey Furnace (SN 685952). This is perhaps the finest example in Wales of a mid-18th century charcoal iron-furnace, and it is also one of the most picturesque industrial monuments in mid-Wales, set below a spectacular waterfall on the river Einion of such potential that it must have been used as a source of water power from the earliest times. (Such a use was the smelting of local silver for the mint operated by Thomas Bushell in the Civil War). The site and the building present many problems of interpretation some of which may be resolved by excavations being carried out by the DoE.

The most striking feature of the present building is the 30ft diameter water-wheel covered by a pentice roof, this alas, is a comparatively recent feature installed to power a saw-mill which occupied the upper floor, originally the charging platform. The building has recently been restored and re-roofed and the top of the furnace restored to its full height. The original wheel which drove the bellows was enclosed in a small building shown in early drawings but all traces of it were destroyed when the larger wheel was fitted. The site of the casting house, which would have been an open structure, projected westward from the furnace. At a higher level on the hill to the south the large charcoal barn or store adds further interest to this important site.

Mills and Miscellanea

Mills and Miscellanea. If Lincolnshire is the land of wind power then mid-Wales must surely be the land of water power; either a study of a large-scale map or an actual walk along a river will indicate how intensely water power was harnessed. The great mining needs apart, notable use of the power was made for corn and woollen mills, also for saw-mills and numerous small farm-machinery installations. The many corn-mills were generally small concerns serving the immediate locality and remains can be found scattered throughout mid-Wales. Material remnants (I) of the woollen industry are particularly evident along the Teifi valley where there are some fine mills although none are of great architectural distinction. No windmills survive, except as place-names, but there were a few, including at least one in Aberystwyth. Both the mining and water power ventures gave rise to ancillary industries, such as foundries, but little evidence remains in the area today.

Welsh water is still an expanding industry. It is exploited to supply distant towns such as Birmingham and Liverpool and its most recent use is for generating electricity, although the total lack of Alpine-type deposits of winter shows anywhere in the Principality limits the output of the industry to auxiliary proportions.

2. Penmaenpool Bridge (SH 695185). An attractive wooden toll-bridge over the Mawddach three miles west of Dolgellau.

26. Lorry Tweed Mills (SN 651890). An early 19th century spinning mill operated by a breast-wheel with an iron axle which is probably original. The adjacent weaving mill is powered by an iron wheel at its gable end which is inscribed "Samuel Owens Newtown Foundry 1858".

27. Ceulan Woollen Mill (SN 655894). This woollen mill operated between 1860 and 1962; the machinery is probably coeval with the wheel dated 1891, the iron hub of which is marked J Edgar Dublin
30. **Clywedog Reservoir** (SN 913870). Completed in 1967; the waters are retained by the tallest mass-concrete dam in Britain, 237 ft from the valley bottom. A smaller dam at Bwlch y Gle prevents the waters from flowing into an adjacent valley. The purpose of the reservoir is to control the flow of water in the lower reaches of the Severn which the Clywedog river joins near Llanidloes; to maintain a regular supply of wholesome water for extraction downstream and also to supply a small amount of water for electricity generation.

34. **Wallog Lime Kiln** (SN 590857). A rather elegant single kiln, better preserved than most, set on the shores of Cardigan Bay and used mainly for bettering the acid soils. The coal and limestone would have been off-loaded on the beach.

35. **Felin Gyffin, Dolau** (SN 642863). One of the few waterpowered cornmills to retain almost all its late 19th century machinery, although the main hurst beam of an earlier mill survives with a date of 1714. Spur-wheel machinery replaced this in the early 19th century. The wheel, which has an iron rim and hub, was cast at the Rheidol Foundry, Aberystwyth.

36. **Rheidol Hydro-electric Power Stations** (SN 695795 and 743827). Opened in 1961 the output of the scheme is 53 megawatts. The 5,700 million gallon Nant-y-moch reservoir (SN 754863) with normal water level at 1113 ft O.D is impounded by a reinforced concrete dam 1150 ft long and 172 ft high. From here the water drops 278 ft to the smaller Dinas reservoir then via the main turbines at Cwm Rheidol to discharge through a small regulating reservoir to the river at about 150 ft O.D.

38. **Aberystwyth Harbour** (SN 581812). The Edwardian castle and town were started in 1277 at the mouth of the river Rheidol. The original Norman settlement had been at the mouth of the river Ystwyth but, from the mid-18th century, attempts were made to divert the Ystwyth into the harbour (successful only when a rock cutting was made) and so the name of the town is justified. Like other Edwardian towns and castles Aberystwyth was serviced from the sea and here ships would have been beached south of the town where some
protection would have been given by a sand spit to the west, now the site of the main quay; alternatively ships could be beached on the north east side of the town. A harbour was only built when it was realised that it would be easier to export the growing amount of lead ore from Aberystwyth than from the somewhat limited port at Aberdovey. Various improvements were suggested and shelved, but the present arrangements owe a good deal to the proposals made by George Bush in 1834. There were lead ore stores to the south above St David's wharf and for some time a limited amount of lead smelting was done here.

On the east side, the lime-wharf kilns survive, as does an oast-house from the now defunct brewery. The fine three-arch bridge was designed by Sir James Szlumper in 1886. A good deal of ship-building took place in the 18th and 19th centuries when general cargo was brought to the town but, in the 1860s, the advent of the railway caused a slow decline; the last shipload of material was unloaded in the 1950s. Since then a few local fishing boats and the college research vessel have been the main users, but recently large number of private yachts have taken moorings here; this is likely to increase if plans to build a marina go ahead.

A warehouse (SN 582817) in Eastgate Street is one of several such buildings surviving in the town and, although this dates from the late 19th century, it is fairly typical. The building has been well renovated and is now occupied by the tourist information office.

51. Devil's Bridge or Pontarfynach (SN 742771). This well-known tourist attraction with its spectacular waterfall is well worth a visit; Wordsworth, in 1824, appeared to think so, and his query '...can such a force/Of waters issue from a British source...' is supported by records of the River Authority which indicate the caprice of local weather. In cubic feet per second the river Mynach averages 10 in the summer and 75 in the winter whilst the month of August in 1973 recorded 6750.

The Bridge consists of three superimposed bridges, although the building periods exceed this number. The oldest is the lowest, a masonry arch of 16ft span which by analogy could date from the 13th century; in the mid-18th century, using the old bridge to support center-
ing, a 32ft span segmental arch was built some 12ft higher. With the advent of carriages it was necessary to improve the approach to the bridge and, in 1814, 6ft of masonry was added to the parapets of the earlier bridge and a pretty cast-iron balustrade supported by external brackets was added. Finally, to accommodate motor vehicles, a steel lattice girder 60ft long was put in place 7ft higher, which in turn has recently been extensively restored.

57. Aberaeron Harbour (SN 455629). Together with the town this is a pretty example of Georgian planning, which apart from the somewhat obscured medieval core of Aberystwyth, is the only town in mid-Wales that has been deliberately planned. Its survival may not be unconnected to the fact that the county planning authority is based here, but it is clear that the inhabitants are rightly proud of this gem. The harbour was killed completely by the railway linking Aberaeron with Lampeter which opened as late as 1911, it too being closed in turn in 1965 by the all-powerful road juggernauts which now batter our bridges and roads with impunity. It is proposed to reinstate a cable-way crossing the harbour mouth. The harbour is simple and had no tall warehouses; one contemporary store is now used as a restaurant. Although Georgian in appearance, a great deal of Aberaeron was built well-on in the reign of Victoria.

58. Felin Fflur (SN 720643). A large, and for this area, imposing cornmill of the early 19th century with its machinery intact. The overshot wheel has an iron hub cast at Coalbrookdale.

59. Elan Valley Reservoirs (SN 925645). An extensive system of water storage in the upper reaches of the Elan and Claerwen rivers and built by the City of Birmingham; four reservoirs were completed by 1904. Originally, five dams were planned; that at Dol y Mynach (SN 908619)
CROSS SECTION 1.0041N4

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SOUTH (UPSTREAM) ELEVATION

CROSS SECTION LOOKING W

LEGEND

DEVIL'S BRIDGE (PONTARFYNACh) Cardiganshire
was never finished, but in 1952 the present Claerwen Dam (SN 869636) was completed and the resulting reservoir has a capacity almost equal to the earlier four. The Elan model village is a delightful essay in Art Nouveau architecture.

60. **New Quay Harbour** (SN 390600). Although inundated with visitors and holiday traffic at the height of summer, New Quay out of season can be seen as the most attractive small fishing harbour and town in the area. A number of waterside buildings and small warehouses survive and have been tastefully converted to other uses. The little harbour is protected on the west by New Quay Head and a small stone pier, and is open only to the north-east. It was at one time considered for transformation into a port for Irish traffic; this and numerous schemes to put New Quay on the railway map came to naught, even the authorised Lampeter Aberayron & New Quay Light Railway of 1906 mercifully failed to reach this charming town.

61. **Cardigan Harbour** (SN 178458). Being set three miles up the sinuous river Teifi, the riverside wharves serving the ancient town of Cardigan hardly merit the term ‘harbour’. Nevertheless, on the south bank upstream of the fine medieval bridge are two very attractive stone warehouses. The area produced a considerable amount of cloth from local mills, and unexpectedly, slate and even tin-plate. The defunct railway station on the south bank is surprisingly intact.

62. **Felin Geri** (SN 300423). This working corn-mill with a pitch-back waterwheel was restored ten years ago and now operates on a commercial basis. The same stream supplied an overshot wheel driving a circular saw which is still housed in an adjacent timber shed.

63. **Maesllyn Mill** (SN 368448). Now a working museum this mill was established during the great expansion of the woollen industry in the Teifi valley in the latter part of the 19th century. The contemporary machinery includes a willying machine, carding engines and a rotary loom.

64. **Rock Woollen Mills** (SN 450420). A fully operational mill founded in the 1890s and which retains the original overshot wheel and most of the machinery.

67. **Cambrian Mill, Drefach Felindre** (SN 356386). As the name implies Felindre is a mill settlement. The Cambrian Mill, a typical late 19th century mill building of the Teifi valley, and adjacent mills are now administered by the National Museum of Wales as the Museum of the Woollen Industry. Apart from the exhibits parts of the mills will be in production.

68. **Alltcafam Mills** (SN 386392). Established in 1885, this mill was well situated on the riverbank close to the railway; its three turbines are still intact.
A Guide to the Pronunciation and Meaning of Welsh place-names

Welsh spelling is entirely phonetic, unlike English. This means that every word is pronounced exactly as it is spelt; each letter has one sound and there are no 'silent' letters as there are in so many English words.

Consonants

b, d, h, l, m, n, p, t are roughly the same as in English.

c always hard (K) as in Eng. eake. Never soft as in pace.

ch counts as one letter. Similar to the hard sound in Scottish loch, or german Nacht. Never soft as in chocolate.

dd counts as one letter. Like the sound in English those or that.

f always like English v.

ff always like English f.

g always hard, as in English green; never a 'j' sound.

ll no English equivalent. Listen to Welsh speakers pronounce Llanelli, Llanfarian, etc.

ph counts as one letter. Like English f.

r similar to the 'r' in merry, but more trilled.

rh a strong aspirated ('breathy') r sound. Do not confuse with the French r: that is produced at the back of the mouth; the Welsh rh is just behind the teeth.

s always sibilant as in snake. Never a 'z' sound.

th counts as one letter; like English thin or pith.

ng counts as one letter; as in English pang. Very occasionally you will hear the 'g' element sounded, in special cases like Bangor or Capel Bangor.

Vowels

Welsh vowels can be short or long, but they are always pure, like the vowels in Italian, even when followed by r.

a as in English cat.

æ as in English pet.

i as in English pit, never as in kind.

o as in English hot.

u similar to 'i', in South Wales, a broader sound in North Wales, not unlike that in English ribbon. Further back in the mouth than French u. You will probably hear both types in this area as it is the region where the two main dialect areas meet.

w as in English put, or could.

y the only letter with 2 sounds: (i) like English i, eg Bryn (hill).
(iii) the sound in English cut, eg y/yr (the). If there are 2 y’s in a word, the first is like (ii) and the second like (i), eg mynydd (mountain).

**Stress**

In Welsh the stress is usually on the last syllable but one, eg Llywelyn, Machynlleth, Pontrhydfendigaid.

But if the elements in a place name are still felt to be separate words, the emphasis may be elsewhere, to underline the meaning, eg Pontrhydygroes, Talybont.

Sometimes the words will be separated for this reason, eg Waun Fawr. Or hyphens can be used to separate the elements, especially with house names, eg Bryn-gwyn, Ynys-hir.

**Common place-name Elements**

Note that because initial letters can change in Welsh according to what comes before them, the form you find in a place-name may be different from the dictionary.

- **aber** confluence, eg Aberystwyth, or river mouth, eg Aberdyfi.
- **afon** river.
- **ar** on, upon.
- **bach, bychan** small.
- **bod** dwelling.
- **bont** see **pont**.
- **bryn** hill.
- **cae** field.
- **caer** fortress.
- **canol** middle.
- **capel** chapel, eg Capel Dewi, Capel Seion.
- **carreg, craig** stone, rock.
- **coch** red, eg Comins coch, Penrhyncoch.
- **coed** wood.
- **cors** marsh, eg Cors Focno (Borth Bog).
- **cwm** valley.
- **dan** see **tan**.
- **dau** two (masc.).
- **dinas** fort, city, eg Pendinas.
- **dol** pl dolau or **dole** meadow(s), eg Dolybont, Dole, Tre'rDdol.
- **dref(f)** see **tre(f)**.
- **du** black.
- **dwr** water.
- **eglwys** church, eg Eglwysfach.
Brewery malt house at Aberystwyth harbour (38).

Abermawr saw-mill (52).
fach, fechan see bach, bychan.
fawr see mawr.
felin see melin.
ffordd road, way.
ffynnon spring, fountain, well.
glan river bank or water's edge, eg Glandyfi.
glas blue or green.
gwaun moor or mountain pasture, eg Waun Fawr.
gwen (f.).
gwyn (m.) white.
gwydd green.
hafod, hafoty farmhouse used in summer.
hen old.
hir long.
llan church, enclosure, eg Llanbadarn.
llyn lake.
maes field.
mawr big.
melin mill, eg Rhydyfelin.
melyn yellow.
mynydd mountain.
nant stream, small river, eg Nantymoch.
newydd new.
pen head, end, top, eg Penparcau.
plas big house, mansion, eg Plas Penglais.
pont bridge, eg Talybont.
porth gateway, or harbour, eg Borth.
'r see y, yr.
rhiw hill.
rhyd ford, eg Rhydyfelin, Pontrhodygroes.
tai end, eg Talybont.
tan under.
teg fair.
tir land.
tra(f) settlement, town, eg Tre'r Ddol.
ty, pl tai house(s).
y, yr, 'r the.
ynys island, eg Ynys-las, Ynys-hir.
yspyty hospice, eg Yspyty Ystwyth.

For further information — dictionaries, teach-yourself books, etc ask at Siop y Pethe, the Welsh bookshop in the centre of town. And if Welsh seems difficult, console yourself with the thought that, for English people, Irish is much more difficult to spell and pronounce correctly!

This booklet is published by the Association for Industrial Archaeology and is sent to all AIA members whether or not they are attending the 1984 Annual Conference in Aberystwyth. It is part of the Association's policy to publish continually information about industrial archaeology in Great Britain and overseas and to build up an ongoing file of site details and historical descriptions available to all. Similar booklets about the areas around Norwich and Lincoln were produced in conjunction with AIA Conferences in 1981 and 1983 and copies of these can be obtained from Stuart Smith, AIA offices, The Wharfage, Ironbridge, Telford, Shropshire TF8 7AW, telephone 0952-245 3522.

If you have purchased this booklet and are not yet an AIA member it would be worth your while sending for an explanatory leaflet, again contact Stuart Smith.. The Association has various categories of membership which all include the provision of four illustrated AIA Bulletins each year, two issues (each year) of the Association's Journal; Industrial Archaeology Review, booklists, exchange and mart leaflets and calendars of industrial archaeological conferences, courses and exhibitions, at home and abroad.