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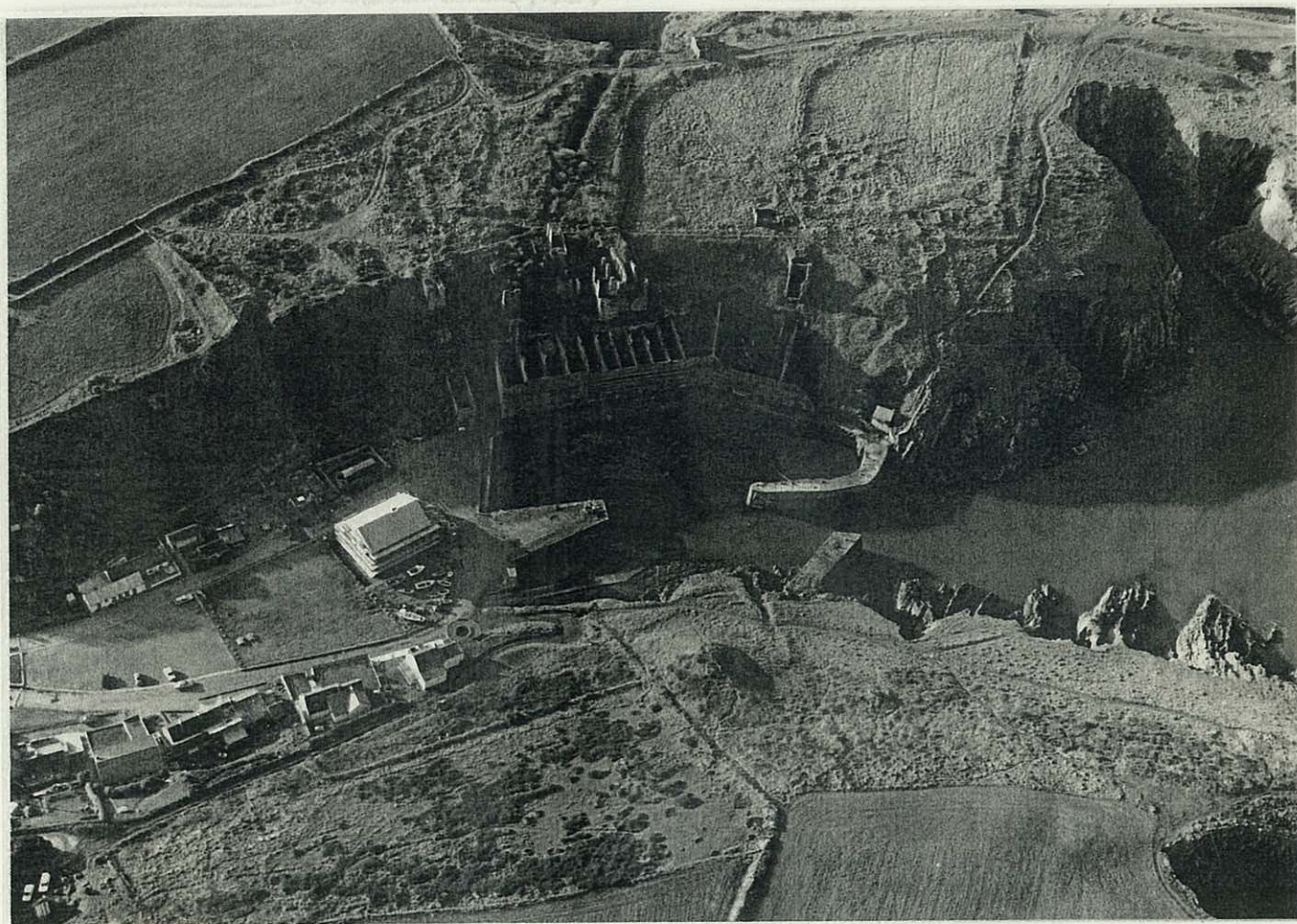
28/10/97

Porthgain

A Summary and Assessment of its Industrial Archaeology
with Recommendations for Conservation and Interpretation

prepared by Heather James BA FSA MIFA

as part of a Service Level Agreement on the provision of Archaeological Services 1997-1998
between Pembrokeshire Coast National Park Authority and Archaeoleg Cambria Archaeology.



SMR Project Number 35410
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Purpose of Study

The 'brief' for the study has developed following consultations with S. Brown and C. Mathieson, of Pembrokeshire Coast National Park Authority. The main purpose is to identify and evaluate the principal existing sources, surveys and reports on Porthgain's industrial archaeology and to summarize them in a form suitable for use in an overall Site Management Plan. This summary will include information that enables Porthgain's importance to be assessed in a wider context. Also included are summaries of current aims, guidelines and best practice in the conservation and management of industrial sites and landscapes. At a later stage, C. Mathieson also indicated that he would like to see some proposals and ideas on interpretation that could serve as the basis for bids for resources.

Methodology

Discussion with Park Officers refined the original suggested purpose and work programme for the study. Work began by consultation of the SMR, and rapid familiarization with information therein and easily accessible secondary works on Porthgain. This was followed by consultation of PCNPA's files, over a one and a half day period at PCNPA's offices. This led to a more extended final definition of the scope of the work and structure of the Report. A visit to the National Monuments Record at Aberystwyth to check on information there was combined with a consultation with Stephen Hughes, Head of Industrial Archaeology Branch RCAHMW and Secretary of the Welsh Industrial Archaeology Panel on current guidelines and best practice. A consultation by telephone was made with Rick Turner, Regional Inspector of Ancient Monuments, Cadw. A telephone consultation was also made with Dr E. Plunkett-Dillon, National Trust archaeologist, co-author of the National Trust's *Archaeological Survey* of Ynys Barri/Barry Island Farm. The Report was then compiled. Two days of field inspections were necessary rather than the anticipated one, although part of the site visit included inspection of the Coast Path for archaeological input to D. McLachlan. It was found that the 5 days estimate of time required was insufficient and 7 working days were spent on the project.

Scope of Study

Because Porthgain is not just an industrial archaeological site but a relict industrial archaeological landscape, the area under discussion also includes Abereiddy and part of the area between the two sites. It is recognized that this is not be under the direct management of the Park, but partnership arrangements and common aims with the National Trust who own Ynys Barri are clearly essential. The component areas into which the site and its hinterland is broken down have been principally defined with reference to industrial archaeological working and processing areas, although other divisions (Scheduled and non-Scheduled areas and Listed Buildings, Conservation Areas, also areas delineated in the Porthgain Enhancement Study exist.

Fig. 1: Map showing locations and areas mentioned in the text.

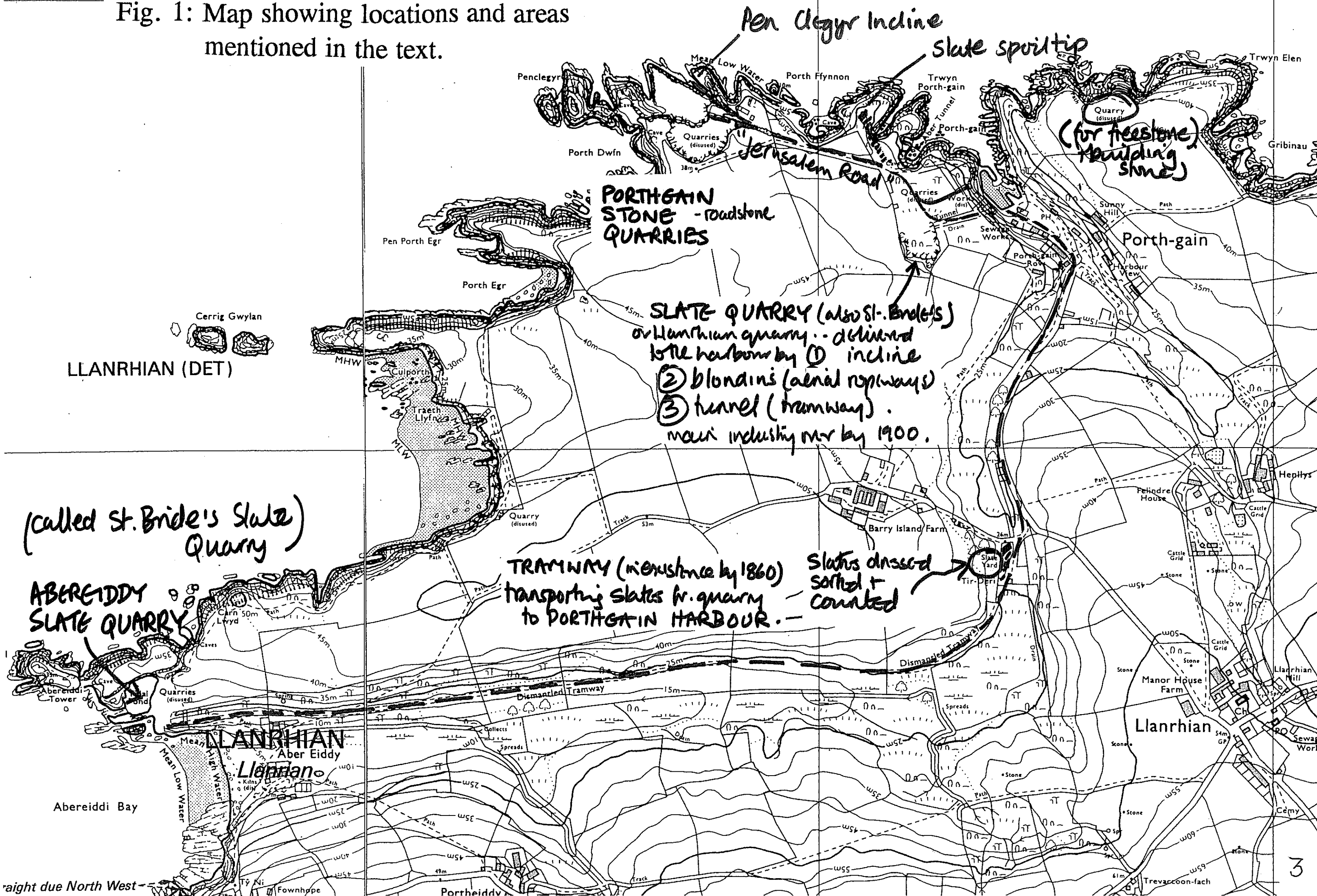
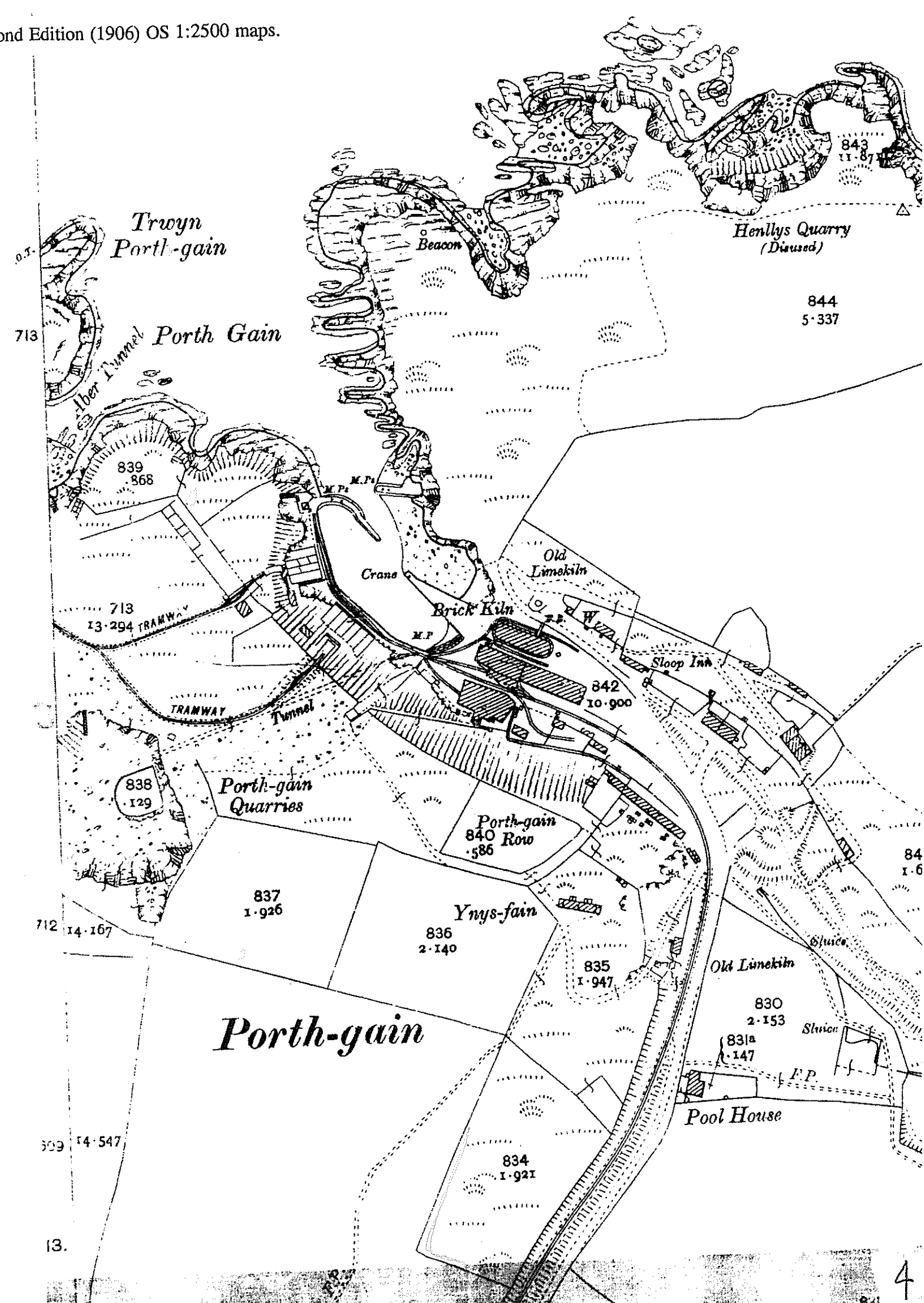
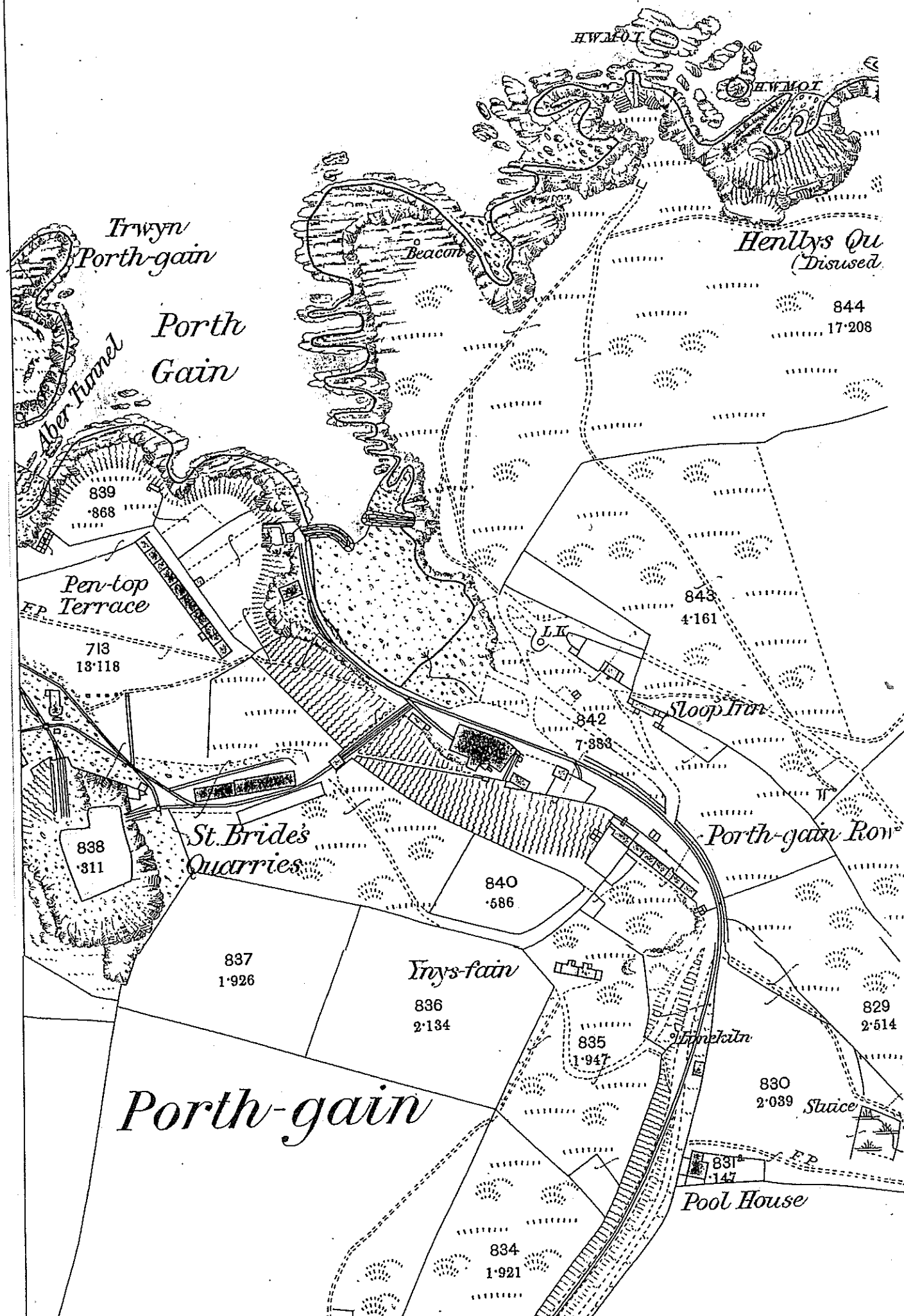


Fig. 2: First edition (1889) and Second Edition (1906) OS 1:2500 maps.



Site Description.

Overall:

Porthgain is a settlement on the North Pembrokeshire Coast, occupying the valley sides and valley floor at the mouth of a former stream now culverted down to its harbour. The name may derive from the now lost name of the stream (*cain*). The harbour and a slip occupy the whole of the rocky bay that is dominated on its western side by ruined brick and concrete hoppers cut back into the steeply sloping sides. At the top of the slope are the remains of the stone crushing and grading works. Between top and bottom of the steep valley side are high brick stacks that supported the chutes that delivered stone from the crushers to the hoppers and to the ships' holds. Much of these present industrial ruins and the harbour are of early 20th century date but the stone quarrying and crushing for export as roadstone were the latest in a sequence of industries - slate quarrying - brick making, that exploited the mix of geological resources in the immediate area.

The settlement still bears some traces of its industrial origins (flourishing between 1840 and 1914), in a row of quarrymen's cottages (Y Stryd) and a single surviving industrial building - the large brick making workshop of Ty Mawr. Removal of the mass of industrial structures around Ty Mawr of which it was but one part, have created an open 'green' and parking area over the valley floor. Before industrial quarrying began in the 1840s, Porthgain was a small fishing and coastal trading harbour. The Sloop Inn (1740s) and a limekiln (18th century) survive from this early phase. The clearance of much of the industrial workshops around Ty Mawr and the removal of rail lines has to some extent returned Porthgain to this earlier era. The 20th century harbour side brick ruins are now a kind of backcloth. Porthgain is no second-home, seasonally-occupied settlement and the harbour and foreshore are in active use by local fishermen. It is a popular place for tourists, due to easy parking and availability of refreshments.

Individual Components:

The Stone Crushing Works and Hoppers, west side of the harbour.

The storage bins or hoppers built against the steep slopes of the west side of Porthgain Harbour, immediately alongside the West Quay, are dominant and impressive ruins. Recent improvements for safety and operation of the harbour as a small fishing harbour for the local crab and lobster fisheries have given the main central line of hoppers (nos 1-11) a smooth facade with all entries blocked. This differs from their appearance when they were working structures with projecting chutes. Most of what is to be seen is of early 20th century build, of Porthgain produced bricks and relates to roadstone, the last and biggest industry of the Porthgain trinity of slate, brick and stone quarrying. From south to north, there is a free standing hopper with a brick stack to its rear. Between it and the main bank of hoppers is what appears as a rocky path up the steep slope now formly fenced off. This is the site of an incline transporting slate down from workshops on the cliff top adjacent to the 'St Bride's' quarries and thus relates to the 19th century slate-quarrying phase. (see Fig. 2).

As the quarry deepened, the incline was replaced by a tunnel from the base of the quarry to the West Quay for transport of slate. This is shown in the 1906 1:2500 map. It later had a hopper built over it, thus extending the 6 shown on the 1906 1:2500 OS map to the 11 that survive today. Nos 12-14 seem to have been in place by 1906 but have been remodelled into 3 larger bins. Recent improvements for the on-going use of the harbour by local fishermen (tarmacing of the west quay surface, renewal of lintels, grillage of openings) have resulted in a smooth facade to the hoppers that is far removed from their original appearance. Between the hoppers and the crushing plant at the top of the slope (supplied by rail from Porthgain Quarry on the sea cliffs between Porthgain and Abereiddy) are brick stacks that supported the chutes to charge the hoppers.

Fig. 3. Photo, c. 1900 of entrance to Porthgain Harbour showing the Pilot's House. Note the flight of steps behind to a gable end wall with an opening - a lookout for the Pilot to see what ships were in the offing, the steps being protected by a stone wall. An usual and interesting feature.

from *Old Pembrokeshire* by Roger Davies. Gomer Press 1991, no. 11.



The Harbour, Pilot's Office & Navigation Beacons.

The present harbour is intimately associated with the roadstone crushing and storage structures on the West Quay since it was expanded and remodelled in 1904-6 when more hoppers were built. The late 19th century harbour consisted of two piers sheltering a drying beach. The east pier survives unaltered from the earliest harbour. The west pier was extended and remodelled in 1904-6, a new centre pier and south Quay wall built. Modern resurfacing for present day uses has covered traces of earlier rail lines, apart from on the West Pier.

The Pilots Office (sometimes mistakenly called the Harbourmaster's office) is a simple single roomed building, Listed, together with the steps at its rear. Old photographs show that there was a flight of steps up to a gable end wall with opening in it that functioned as a lookout (See Fig 3). New steps with a hand rail perpetuate this interesting feature but the lookout has gone. All these harbour and navigation elements give a picture of the maritime history of Porthgain.

Ty Mawr, its environs and ruined buildings to the west.

Ty Mawr, now re-roofed, stands alone in an open area once densely packed by industrial buildings of which it was a part. It is a two storey height rectangular stone building, internally 16 m x 11.6m. It is the principal remains of the Porthgain brickmaking industry and served as the machinery shop for brick manufacture. A lean-to at the north end once housed a boiler and perhaps engine house. The roof line of former brick drying sheds can be seen on the south side of the building.

To the west are overgrown low ruined walls of the former water powered pugging mill and crushing works to prepare the clay. Modern uses, including the fenced compound for Porthgain Village Industries, have taken over most of this area. The engineering work to culvert the stream that flows down the valley, (recently repaired as part of village enhancement works) was contemporary with the rebuilding of the harbour. The role of water power in earlier industrial processes is no longer evident. The area still has considerable buried archaeological content and potential.

Top of the Cliff above Porthgain - Quarries, rail lines and ruins of Pentop Terrace and locomotive sheds.

All this area lies within the National Trust estate of Ynys Barri. Its content is described in the NT's Archaeological Survey by J. Latham and E. Plunkett-Dillon that was reproduced in its entirety in the Porthgain Enhancement Survey. Much is overgrown and visitors are discouraged for obvious safety reasons, especially to the Porthgain Quarry. Nevertheless the whole area contains the evidence for the sources of Porthgain's mineral wealth and how it was extracted and transported to the processing and shipping areas.

Current Condition and Influencing Factors

Hoppers and Stone crushers

These exist today as ruins, protected as Scheduled Ancient Monuments.

The principal influencing factor is public safety in that there is the danger of falling bricks or masonry from the facade onto the working and Coast Path Access area of the West Quay. The steep slopes to the sides and rear of the hoppers, as well as their interior and the bases of the brick stacks are also considered to be potentially unstable and dangerous. This has been dealt with in two ways:

Refurbishment and consolidation of the facade of the hoppers alongside West Quay and prevention of access by means of grills over all openings.

Fencing off access to the rear sides and top of the crusher house and allowing a dense undergrowth to develop that further deters visitors' access, accompanied by warning signage.

Harbour etc.

The principal influencing factor here is to maintain the harbour for use by the local fishermen. This involves:

consolidation of the harbour and quay walls

Repair of the culverted drain to avoid flooding of the Green and to serve as a scouring sluice for the harbour.

surfacing of the quays and piers

provision and maintenance of mooring and storage facilities

creation of a slip for getting boats in and out.

Not actively encouraging yachtsmen and pleasure boats.

Ty Mawr and environs.

The principal influencing factor for the building is the wish to find a use in order to maintain it. For the environs the main factor is to provide car parking and a safe play/congregating area for visitors and local people.

The building has been repaired and re-roofed. The floors need to be completed and then acceptable uses found.

Clifftop areas and Coast Path

Principal influencing factors are the need for path maintenance and safety, for visitor access and for farming uses by the Ynys Barri NT estate.

List & Summary of existing archaeological & historical information on Porthgain.

This is not exhaustive but takes the most important general and site studies. Information is presented either as extracts, or summaries of content.

1. General works on the mineral resources:

SLATE

F. W. North, National Museum of Wales booklet: *The Slates of Wales* 1925. (principally about North Wales):

A third important group of quarries in slate of Ordovician age occurs in the neighbourhood of the Prescelly Mountains, Pembrokeshire and the adjacent parts of Carmarthenshire and Cardiganshire . . Cleavage has been developed in other Ordovician strata and in some of the Cambrian strata near Abereiddy in Northern Pembrokeshire, but the rocks either weather very readily, or have so many hard grit-bands associated with them as to be of no commercial value and although numerous quarries have been opened, none has proved successful.

CLAY FOR BRICKS.

The harder doleritic rocks that were quarried for roadstone and as building stone are from a central igneous intrusion into softer, earlier Ordovician shales. At the junction between the intrusion and the shales the latter were softened, and it was these beds that were quarried and crushed down to a clay for making bricks. Brickworks were a common, on-site product from other mineral workings, both to make use of the softer shales and clays encountered and for on-site building material.

CRUSHED GRANITE ROADSTONE

Trevor M. Thomas, 1961: *The Mineral Wealth of Wales and its Exploitation*

Despite the ready availability of large reserves of high-grade stone in close proximity to the coastline, there have been no quarrying developments in North Pembrokeshire on the scale of those undertaken in Caernarvonshire. This is due primarily to the abundance of local roadstone and building materials of sedimentary origin in the more populated southern half of the county and in the industrial areas of the South Wales coalfield to the east . . the natural outlet for any marketed stone. Until about 1928 a quarry at Porthgain, working dolerite rock of rare quality, carried out a fairly extensive export trade by means of small coasting vessels . .

D. Morgan Rees, 1975. *The Industrial Archaeology of Wales* D & Charles, Industrial Archaeology of Britain series.

In North Pembrokeshire there has always been a plentiful supply of high-grade stone, but quarrying has never approached the scale achieved in Caernarvonshire. . Among the most interesting ventures in this area was one which has developed from the workings of the Porthgain quarries, one on high ground (SM812325) immediately to the west of the village and another about ½ mile to the N.W. on the Penclegyr headland (SM 806327). A third quarry which is shown on the 6" map as Porthgain Slate Quarries (Disused) was on the coast (SM795315) a short distance north of the village of Abereiddi.

Igneous rock from the three quarries was brought to a crushing and grading plant, operated by traction engines, above Porthgain harbour. The crushed rock was charged into large hoppers from which it was discharged as cargo into vessels moored alongside. The stone was a regular export after 1878, much of it carried by the quarry company's six steam coasters of about 350 tons each. The harbour was enlarged during 1902-4 to meet a growing trade which reached its peak before the 1914-1918 War. Subsequently it did not recover and the plant closed in 1931.

Site Specific Studies.

About Porthgain, Tony Roberts. 4 issue (revised). 1991. Abercastle Publications. £1.50.

At present, the only available 'local' history is Tony Robert's *About Porthgain*, Abercastle Publications, now in its 4th revised issue of 1991. This is a widely available, reasonably priced and a very informative and attractive booklet. It is based on local knowledge of the former industries and expresses a number of personal views, but does not contain any references.

The Railways of Porthgain and Abereiddi, R.C.Jermy, Locomotion Papers 159, The Oakwood Press. £3.95

This is an excellent, authoritative, well researched account that gives a good description of the Porthgain industries as well as the railway history. It is well illustrated with maps, plans and photographs. In his Foreword, Jermy explains that the book is based on much 'first-hand study of both the sites and much of the well scattered documentary evidence'. He provides a good description of the whole site from Abereiddi to Porthgain, which, incidentally, permits an assessment of how site conditions, visibility and access have altered since the early 1980s. In his Conclusion he advises:

Those wishing to know more would do well to avail themselves of the excellent guided walks organised by the Pembrokeshire Coast National Park Authorities which are well advertised locally. These walks are conducted by Iuean Griffiths and Roger Worsley, distinguished local residents and historians, whose knowledge of the area, its industries and shipping is extensive and detailed. It is hoped though that the appetite of the reader has been whetted and that personal visits to the sites will enable him or her to make the same walks of discovery that the present author has made. Much scope remains for detailed observation, investigation and recording. The jigsaw puzzle history of the railway and tramway systems is still far from complete . .

National Park Site Cards: Pembrokeshire's Sea Trading: PORTHGAIN.

These laminated 'blue cards' are now being withdrawn but contain a useful description of the industry and the site, with two old photographs and an aerial view.

In the 1970s there was an active and pioneering group of fieldworkers under the guidance of R A Kennedy, Curator, Pembrokeshire Museums - the Industrial Archaeology Group of the Friends of Pembrokeshire County Museum. PCNP staff were involved. This co-incided nationally of course with the rise of 'Industrial Archaeology' as a serious discipline in its own right. The higher profile given to industrial remains is evidenced in a separate essay in the 1973 HMSO Park Guide : 'Industrial Archaeology', by R.A. Kennedy, ch. 8 in *Pembrokeshire Coast National Park*, ed. D. Miles.

Members of the group included Roger Worsley, who has an important collection of photographs relating to the site. A copy is provided of his essay on the site from his book *Open Secrets*.

Brian John has written many local guides and studies, underpinned by his geological and geomorphological knowledge. A photocopied extract covering Porthgain, in his latest book *Pembrokeshire: Past and Present* (1995) is given below.

Finally the booklet a National Museum of Wales, *Maritime Heritage of Dyfed* has useful summary of Porthgain in the context of coastal shipping.

Archival material.

There is a rich archive for the quarries at Porthgain, principally deposited at Pembrokeshire Record Office. This is collection DB/7 available for inspection only with the written permission of Mr H Salmon, Sunny Bank, Porthgain. These mainly concern the 20th century quarry working, but constitute a major research resource for all aspects of the works. There are complete runs of time sheets, pay sheets, order books, lists of ships, bills of lading, machinery, specialist catalogues and so on. This source has yet to be systematically exploited to produce a full history, but they were extensively used by Jermy, for his railway history.

National Trust Archaeological Survey - Ynys Barri

The Survey is reproduced in the Porthgain Enhancement Report by 1990. It is to the standard format of the on-going National Trust Archaeological Surveys of the Trust's estate in Wales. Its principal purpose is "as an outline of archaeological features relevant to management". It contains brief site by site descriptions, evaluations of their relative importance, a land use history, recommendations for further reserach and field survey. It also contains a summary of Management Recommendations.

It should be noted that there is no comparable survey for Porthgain itself, for PCNP's estate. This present Report was not intended or commissioned as such a Survey.

Archaeological Work at Ty Mawr.

This was commissioned by PCNP from Dyfed Archaeological Trust in 1992 and 1993, in advance of repair and re-roofing of the building, preparatory, it was then thought, to a new use as a shellfish processing plant. The work was specified as part of the Scheduled Monument Consent for the consolidation and conversion.

The first stage of the work was an archaeological assesment of what the impact of the proposed works would be on the floor surface and below floor deposits. The building housed the brick making moulds and presses. Evidence was found for a machine base and a wheel pit. In addition a description and interpretation of the environs of the site and the brick making industry of Porthgain was provided. Rescue recording of the structure of the culvert alongside the building was also carried out, since this was under repair at the time of the excavation. A contractor's trench had also been cut through the site of the brick kilns. Roger Worsley kindly gave permission for some of his collection of photographs showing Ty Mawr and associated brickworks to be reproduced in the Report. The principal recommendation was for the

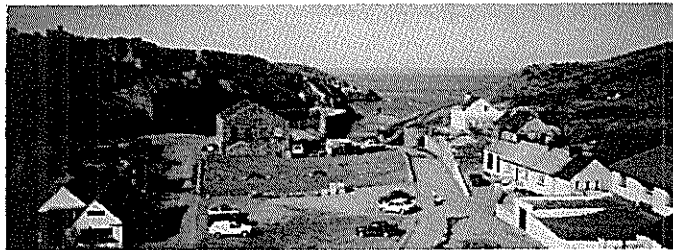
complex archaeological deposits below floor level to be preserved *in situ*.

Further excavation took place in December 1993 in advance of work to cut down into the subfloor levels for the supports for the steel frame on which the new roof of the building is supported. No less than 5 phase of use and operation were identified. It proved possible to link machine and wheel pits to detailed descriptions (especially in a document of 1919) of machinery and equipment within the building).

One of the main conclusions to be drawn from the excavations is the potential of the archaeological deposits in and around these buildings for elucidating the history and development of the site.

Conclusion:

Much general descriptive work has been written and gives a good picture. There is an unusually rich archival resource for the site in records and old photographs, in various hands. There is scope for academic research and publication, just as the site itself provides scope for detailed survey and recording. This should be borne in mind as a suggestion to any interested universities or colleges looking for an industrial archaeological project. It would also provide a suitable subject for a series of Adult Education classes and workshops, provided that a suitable tutor could be found.



Come and visit Porthgain

This little harbour and the quarries are an important part of our industrial archaeology, but this is a living community which welcomes visitors, both local and from away.

The Sloop, probably the best known pub in the county, is at the heart of it. The pub dates from 1743, when it was more of a workers' than a walker's pub. Nowadays, the wonderful cliff scenery and the walking along the Coast Path, make the Sloop a welcome centre.

The beer is good, and so is the food and coffee. There's plenty of parking and good company. Telephone 0348 831449.

The
SLOOP INN
Porthgain
1743 a.d.

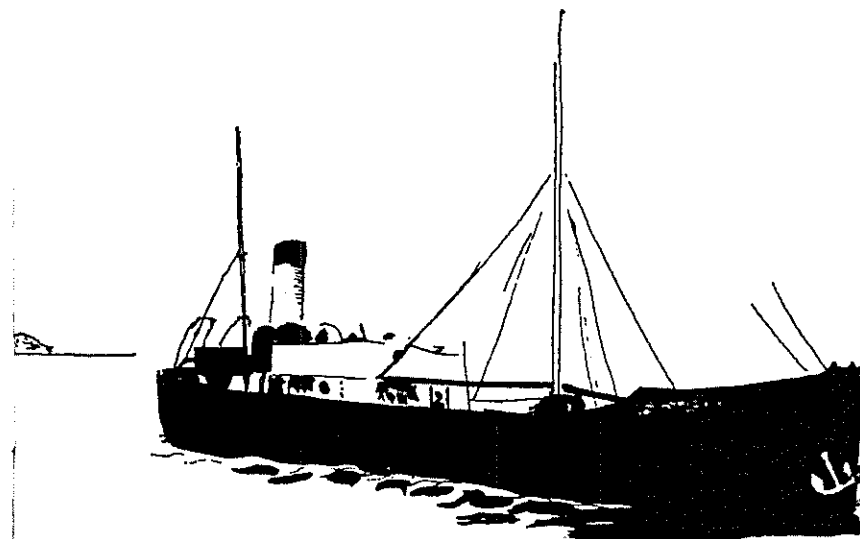


The famous walker's pub by the harbour
on the finest stretch of the Coast Path.

About PORTHGAIN

by
Tony Roberts

Illustrations
by
Elizabeth Roberts



Abercastle Publications

ABEREIDDI AND PORTGAIN

Prior to the nineteenth century, both Aberreiddi and Porthgain were two relatively insignificant creeks on the north Pembrokeshire coast at which occasional cargoes of limestone and culm were landed. Aberreiddi is also reputed to have been a favourite haunt of smugglers, and many illicit cargoes were landed on its beach during the eighteenth century. It was the mineral reserves of these two ports, however, that were to transform them during the nineteenth century: both locations had ample reserves of slates, but Porthgain also had deposits of a very high quality granite, which had in places decomposed, leaving a conglomerate ideally suited to brick production.

The first attempts to exploit these resources were made in the 1830s by a number of local landowners and entrepreneurs, none of whom was particularly successful. In 1849, however, the leases were taken up by three London businessmen and through their initiative Porthgain soon acquired the machinery, kilns and tramways required to handle its new found wealth. The slate quarry at Aberreiddi was also developed after 1850, and at first slates were exported in small sloops and smacks of some thirty tons. Due, however, to the exposed nature of the beach, which is in the teeth of the prevailing westerly winds, a tramway was constructed to haul the slates around the coast to Porthgain, which was provided with its first harbour and quays in the 1850s.

Thereafter, whilst Aberreiddi still handled the occasional cargo of lime or culm, most of the shipping in that area came to be concentrated upon Porthgain. Its high quality setts were shipped to Dublin, Liverpool and London for use in the construction of some of the most prestigious public buildings in those cities, and though its slates and bricks were not of such high quality as those available elsewhere, there was nevertheless a thriving coastal trade in these commodities to South Wales and Bristol Channel ports. In the late nineteenth century, as many as twenty sailing vessels could be seen in

the port at any one time and by the turn of the century, the Bristol-based company that owned the whole concern by that date had purchased six 350 ton steamers, all of which were exclusively employed in the carriage of granite from Porthgain.

By the early years of the present century, a further impetus to the trade of the port was given by the new demand for crushed granite roadstone. In response to this the harbour was extensively rebuilt between 1902 and 1904, and the massive brick hoppers that still stand today were built to hold the stone prior to its being loaded into the holds of the waiting vessels. The road-stone was shipped to destinations all around the British Isles: in 1909 for instance, 3,500 tons of stone were shipped to Bristol, 4,000 tons to Newhaven and many lesser shipments to Bridgewater, Minehead, Barnstaple and London. Local sailing smacks and ketches also took cargoes of stone to destinations in Dyfed; in 1910, Fishguard, Cardigan, Aberporth, Tresaith and Aberaeron all received loads of stone from Porthgain, mostly in connection with County Council contracts for road repairs in those areas.

The chief problem involved in the export of stone from Porthgain was that since the village was not connected to the national railway system, its products could only be transported conveniently to coastal locations. After the First World War, Porthgain began to face stiff competition from similar concerns whose quarries were served by railways and whose products could be taken more quickly and more conveniently to their destinations. By the late

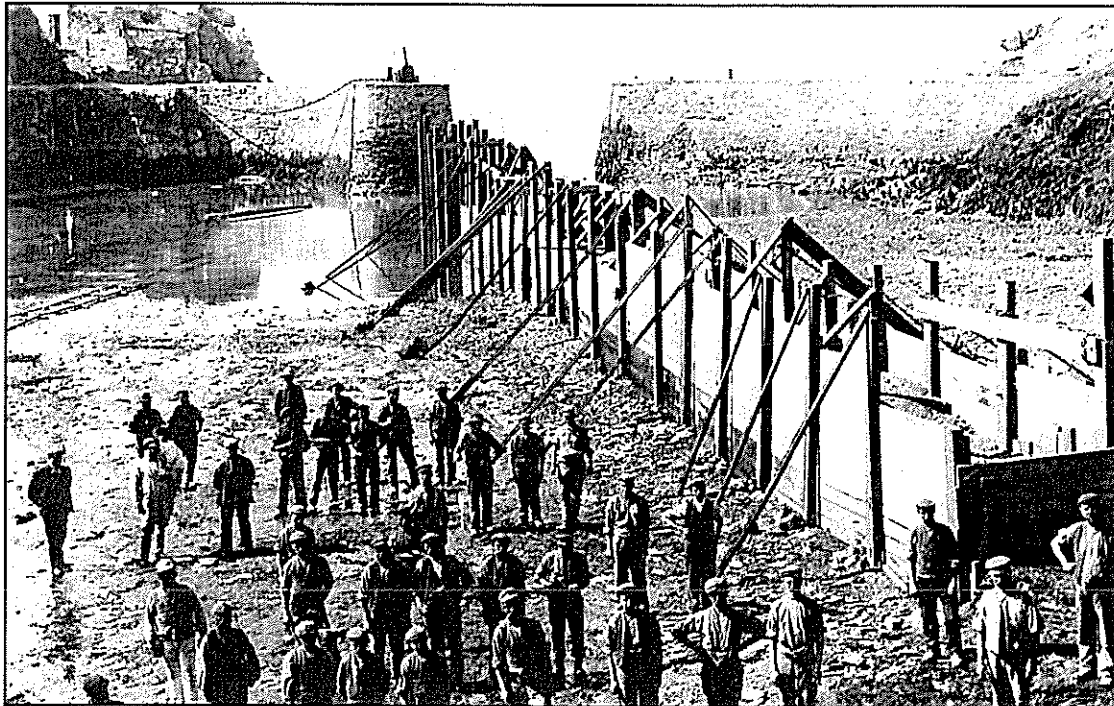
1920s much of the crushing equipment needed renewing, and there were problems with the silt and sand in the harbour. In 1929, the United Stone Firms (who by then ran the whole concern) went into receivership, and the last load of Porthgain granite was shipped out in 1931. Small loads left by road until the 1940s but today only the gaunt outline of the stone bins and the small and near-empty harbour remain to remind the present day visitor of the industry that once existed at Porthgain.



Seven ketches and two small steamers awaiting cargoes of stone at Porthgain, c. 1900.

Brian John was born in Carmarthen
in 1940 and brought up in

from Pembrokeshire Past & Present - Brian John Green CofP 1995
Coal, Stone, Slate and Iron



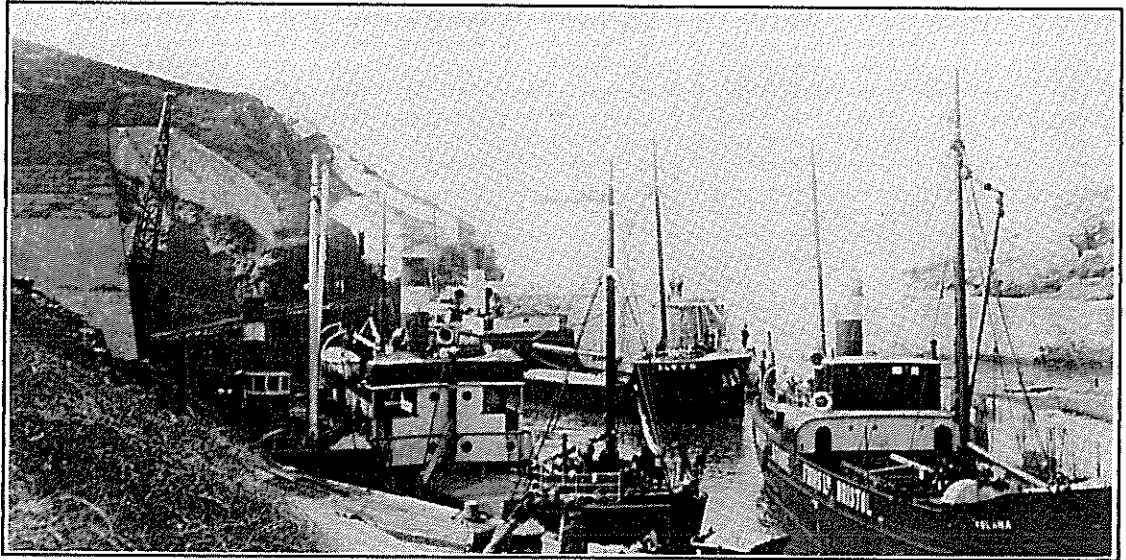
*Construction of the new harbour wall at
Porthgain, around the year 1902.*

locomotive shed and another building where slate slabs were dressed with the aid of machinery driven by a water turbine. There is a ruined viaduct, used for carrying slate waste across the railway line. The cast iron pipe, used to carry water for the turbine, the village water supply and the Rosebush fountains, is still visible. The main pit is like a hanging garden, and on its floor is a paradise of lush ferns, heather, bilberry, moss and rushes. Specks of cotton grass thrive on the water which trickles down from invisible springs. In July there are foxgloves, and plump bilberries for the picking. The sounds in the air are of sheep and skylarks and distant barking dogs and the alien sounds of traffic on the main road below. The massive ugly spoil heaps of shattered and discarded slate slabs contrast starkly with the lushness of the new green plants. Rosebush may be an industrial relic, but it has its own peculiar beauty.

Other Stone Quarries

Hard rock quarries are scattered throughout Pembrokeshire, since in the early days each community met its own demand for building materials, railway hard core, and roadstone. The best roadstone in the county came from igneous rocks (for example dolerite, andesite and rhyolite) which were quarried and then crushed down to various sizes. Typical quarries are those at Trefgarn, Penbiri, Middle Mill and Bolton Hill, and there are older quarries at Brawdy and Gignog.

Possibly the best known of all the north Pembrokeshire quarries was at Porthgain. Here Porthgain Village Industries Ltd operated a thriving quarrying and brick-making industry between 1878 and 1914. There were two main quarry pits, one producing slate and shale, and the other roadstone from andesite. Following the



Steam vessels loading their cargoes in Porthgain Harbour, around 1910.

rebuilding of the harbour in 1902-4 the little port echoed with the sounds of the stone crushers, and in some years there were more than 100 shipments of stone and bricks to ports as far afield as south-east England. After World War I, however, high costs made it difficult to operate the company efficiently and it was forced to stop working at Porthgain in 1931.

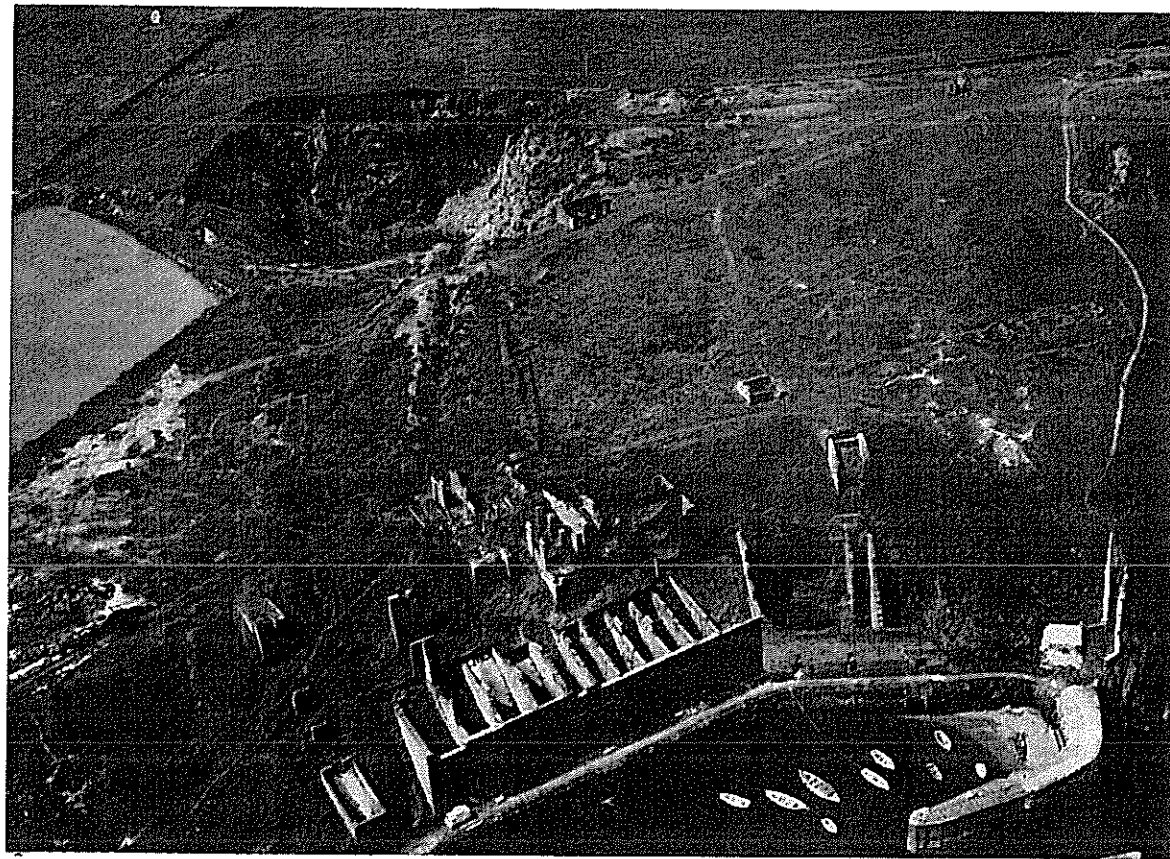
The stone quarries were on the cliffs to the west of Porthgain, and between them and the harbour one can still see several quarry buildings and the route of an old railway track. The stone was crushed and graded and then stored in hoppers on the west side of the harbour for loading direct into sailing ships and steam cargo vessels. The remains of these hoppers are still prominent features of the local landscape. The old brickworks building (now repaired) is a focal point in the settlement, and on the quayside is the entrance to the long tunnel through which shale for the brickworks was carried by trucks on a narrow-gauge railway. Despite its air of dereliction Porthgain has its own peculiar charm, and it is certainly

one of the most important of Pembrokeshire's industrial monuments. Thankfully, plans for the "development" of Porthgain were met by strong local protests, and the harbour and quarry buildings are now protected by the National Park Authority.

Many other quarries in the county were worked for building stone. In the north the beautiful purple sandstones for St David's Cathedral were quarried from the cliffs above Caerfai Bay. There were many small quarries in the centre and north of the county where shale was extracted for building purposes. It was mixed with clay (and sometimes straw) to make "clom", which was for centuries the cheapest building material available for poor people.

The hard grey and white limestones exposed in the south of the county have always been of great importance as building materials. As we have seen in Chapter 8, crushed limestone was also used, along with coal or culm, for conversion into lime. Most of the limestone was quarried from the outcrops on the coasts of South Pembrokeshire,

Porthgain

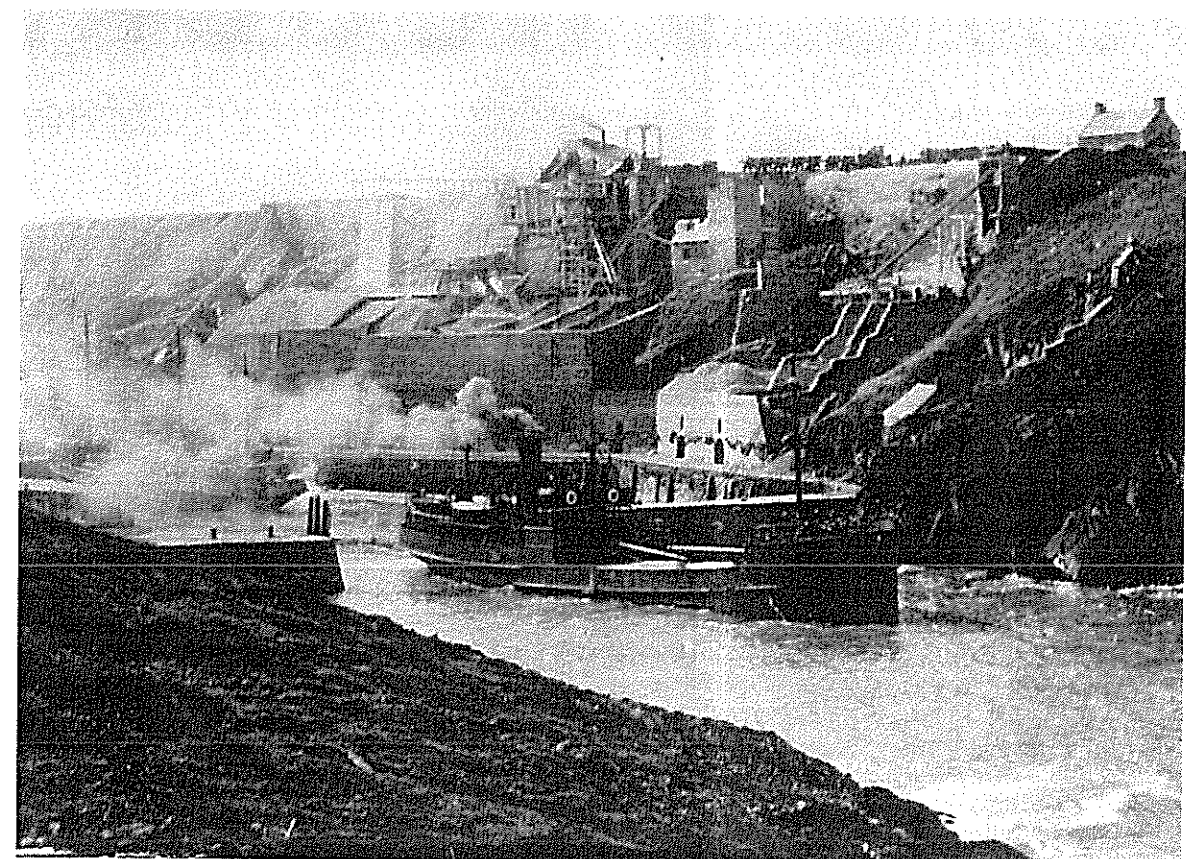


Porthgain—the port with everything—slate was worked from the pit (top of picture), from which also came a fine, brick-making clay—granite was quarried a mile along the cliffs and brought to the crushers by tramways. The hoppers in which the crushed granite was kept, the lines of railway, crusher, engine house, tunnel, leet and industrial housing all show up well from the air.

If you like history or archaeology, then this is a little heaven-on-earth for you; it's possible to potter among the ruins and rails and quarries and quays while your family can, if they wish, sun themselves or snooze, find sand, or tea, or a loo—there's room

for the dog, and you can even push a pram. Little wonder so many people number Porthgain among their favourite industrial sites . . . for that is what it is. The snug harbour cradles grandeur on a conveniently small scale; even the redbrick cliffs (reminiscent of the Valley of the Kings more than west Wales) are not *too* towering. The gaunt, yet lived-in buildings tell you straight away you are in the presence of archaeology.

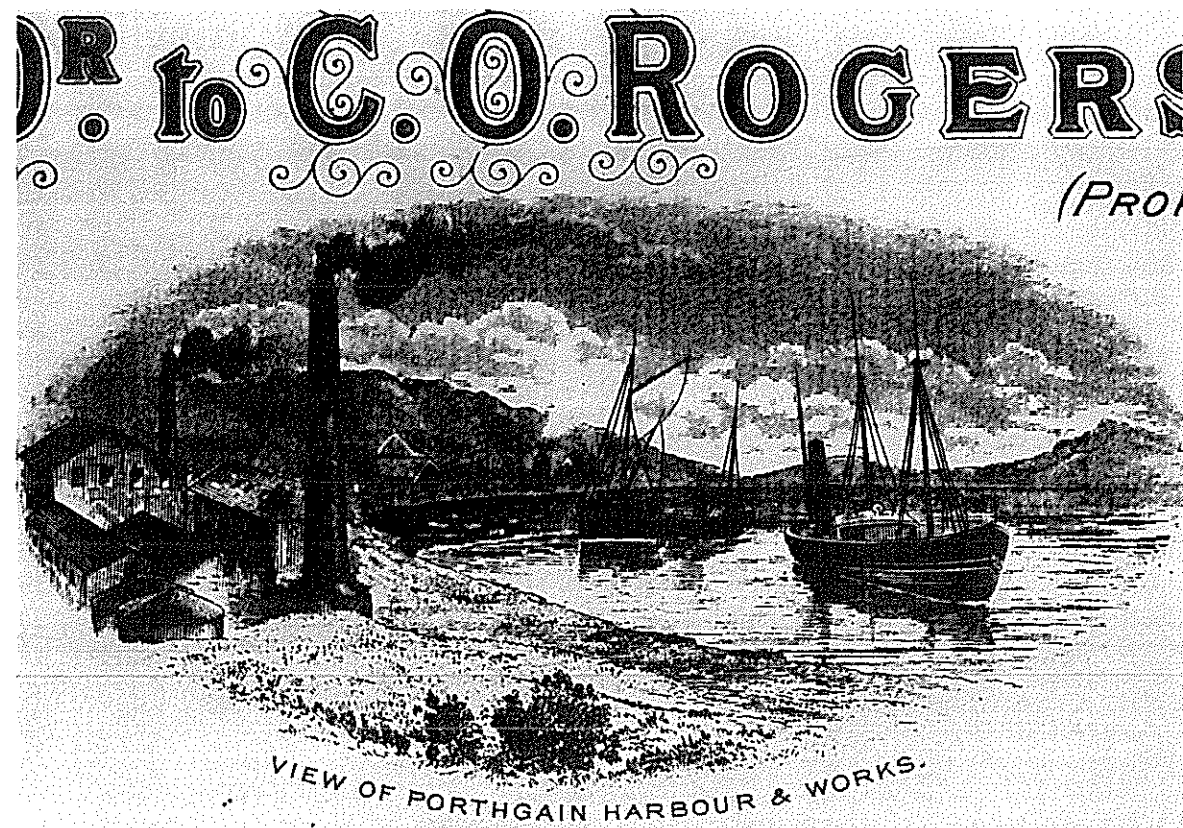
Porthgain had a fairly short—if dramatic—career in many ways, an intriguing tale of a set of unique natural assets near the sea exploited to the



Porthgain in 1910—the time of its greatest glory; one of its fleet of steamers leaves with a load of granite, bricks and slates, the haze of dust from the crusher is everywhere—a Peckett loco shunts a line of trams containing rough granite, at the clifftop.

full. Porthgain's development last century was an inevitable consequence of its three juxtaposed earthly riches; some shale had been pushed through by molten magma from deep in the earth's inner core, some 500 million years ago—the heat of the intrusion changed (or metamorphosed) the shale into slate, and the molten material cooled into granite. Around the edge of the intrusion, chemical action over the enormous time between then and now, decomposed some of the granite into a gritty clay rather like that on the edge of the granite *massif* of Dartmoor. So when man at last looked into the

potential of this little inlet, he found slate for roofing, granite for building and that fine grey clay, which could be baked into excellent bricks. No Victorian industrialist could have resisted it, especially as it lay by the sea, so all the bulky products could be carried easily and cheaply to market.



Porthgain—Detail of the harbour works (somewhat idealised!) from the Company's bill-head; the steam crane (c) was mounted on standard gauge track laid when there were rumours of an LNWR line to St Davids.

courtesy, Pembs Record Office

To begin with, exploitation was on a local scale—a couple of businessmen came to this straggly fishing village with its solitary limekiln, and lobster-pots drying in the sun. They did their best, but failed through undercapitalization; but a trio of men from far-off London saw its potential, saw the slate moving from nearby Abereiddi, and set to on Porthgain with *panache*. Their first enterprise was called St Bride's Quarries, hopeful advertisements appeared in local papers extolling the quality of their tombstones and kitchen floors and roof slates

... at a price to compete with other quarries ... A chasm opened up where their quarrymen took out the slate, levering it from its 500 million year old bed with crowbars, then splitting it into Duchesses, Ladies, Countesses and all the strangely feminine sizes of roof slates. Railway systems snaked about the clifftops, and the place bristled with little sheerlegs to hoist lumps of rock onto trams—it got too deep for cranes and a Blondin was set up. This is a high-wire device (named after the Victorian showman who pushed wheelbarrows across Niagara) with two towers between which cables hung, their pulleys and hooks enabling trams and chains to be lowered to the working floors for the slate slabs to be hauled out for dressing. Eventually the hole got too deep to haul out all its riches that way, and a railway tunnel was dug from the

harbour to the working base, with a 3'0" gauge tramway laid within it. Because not only slate was coming from the deepening hole.

Hoses splashed onto the sides of it to separate fine blue clay from the little bits of undecomposed granite. A leet had been built down the valley to supply water power to pugging and stamping machinery which turned the clay into bricks—an oval kiln was built next to the fine greenish granite building, its interior divided into four quadrants in which loading, firing, cooling and unloading were carried on in sequence continuously—it boasted a dramatic chimney, a landmark for the many little ships which now came here regularly. Another railway ran through cuttings down an incline to Pen Clegyr Point where the granite was being blasted out of the cliff, then trundled back to where the skilled masons turned it into the basis for fine architecture. Much of Dublin is built of Porthgain granite, as is the Tate Gallery in London.

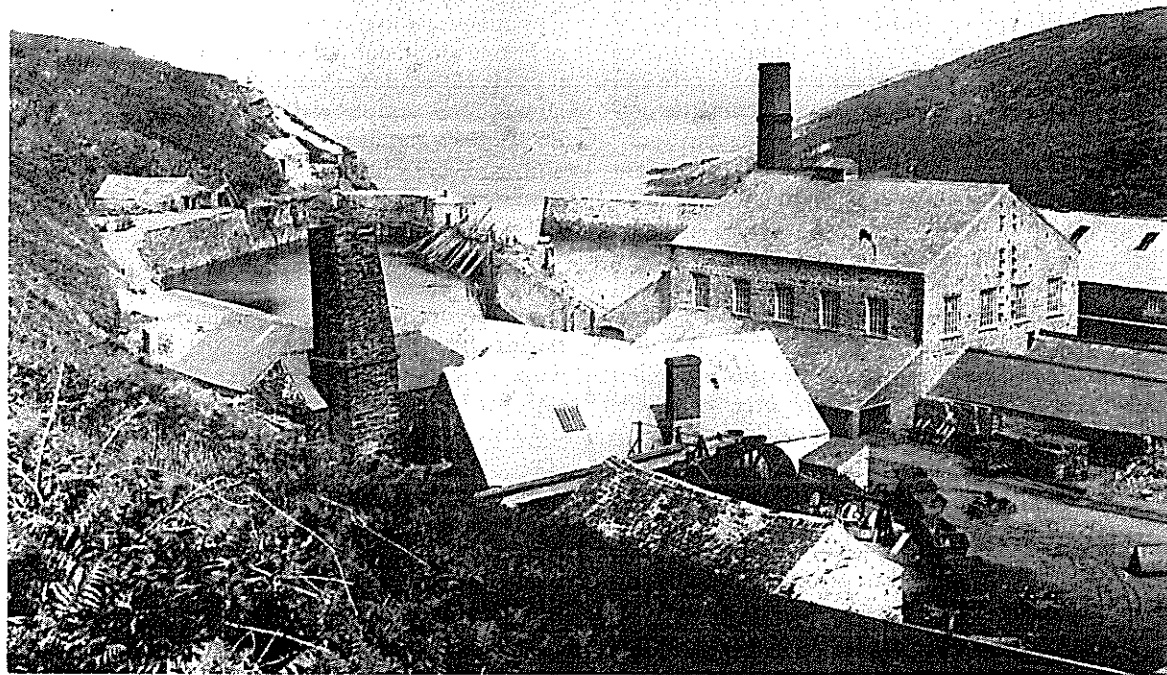
Now three industries ran side by side; granite, slate, bricks—the harbour was always crowded, the company's own fleet of fifty-two ketches and eight steamships being supplemented by many more independently owned coasters of anything up to 350 tons burthen. The brisk trade in bricks was partly

due to the company starting to advertise itself on each brick, proudly stamping 'Porthgain' on every frog; you can still pick them up right across the industrial belt of South Wales and the Midlands, into Ireland and even as far away as Bath, and along the Kennet & Avon canal in Wiltshire.

At the end of the century a new market for granite opened up—there was a newfangled machine, derided by nearly everyone as a noisy, smelly, here-today-and-gone-tomorrow contraption; it was the horseless carriage or Motor. It would never last of course. But in the meantime its rubber tyred wheels demanded a better road surface than our dusty hill-and-dale horrors or cobbled nightmares. Most country roads were dust-traps in summer and quagmires in winter, so from the 1800s on, Tarmac roads were being laid out, especially in the rapidly growing suburbs of the big cities with their red brick facades, clean blue slate roofs and granite gateposts—all of which could, and much of which *did*, come from Porthgain! So steam powered crushers started hammering and grinding

Steam and Sail—at the turn of the century; the jetty had to be altered to accommodate the larger steamships and the harbour regularly dredged to allow for their deeper draught.





Early Days—a leet drives a waterwheel (bottom of picture) to crush and pug the clay for brickmaking, as well as cut the split slates to size. The 'Green' brick-drying sheds, kiln and office buildings, as well as the first stage of the harbour works, are clearly visible on this early photo (c. 1885); there are as yet no hoppers for crushed 'road-stone' granite (left).

morgue of carcasses in the railway tunnel which means that the industrial archaeologist needs a strong nose or a clothespeg) or holidaymakers' boats. The leet still runs powerfully under it all to empty into the harbour below where the kiln once stood.

Now you can dream among the giant hoppers and walk past low lines of slate waste up on the cliffs which were, not more than a lifetime ago, kitchen gardens with runner beans and washing and prams and dogs barking . . . see the base of the Blondins . . . the Harbourmaster's Office next to the entrance . . . even the heap of rubbish dredged from the harbour by steam drags when this place was proud among the ports of the world for its trade and

commerce . . . and every now and again you may run up against a person with a furrowed brow, possibly talking to himself and scribbling on the backs of envelopes. He will be a railway buff trying to work out how in thunder you managed to do any shunting on a triple-gauge railway system . . .

Top right:

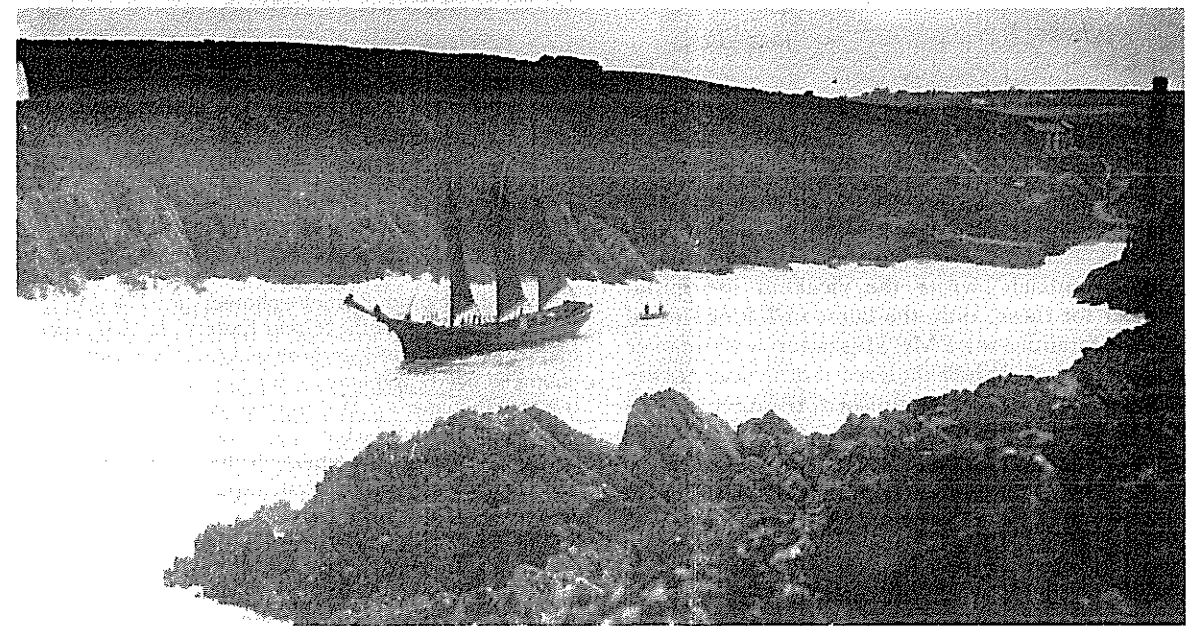
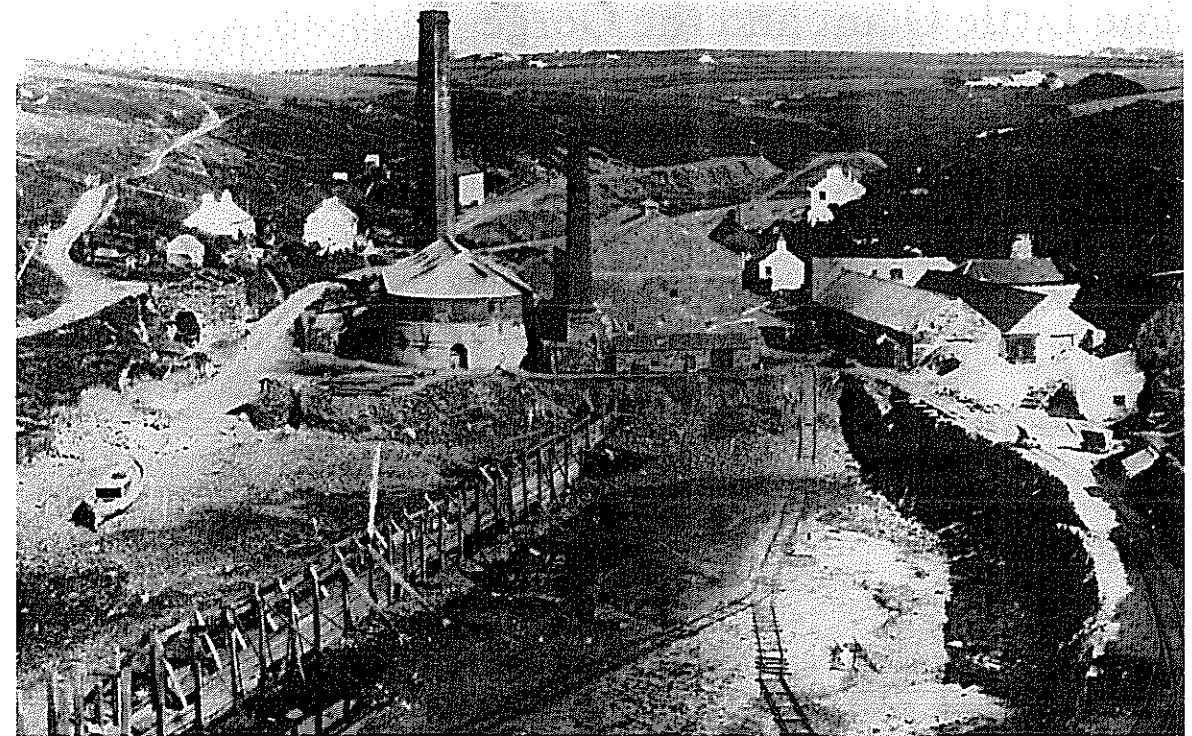
Brickmaking—The continuous kiln (1 of centre) always had one quadrant firing another loading; the third cooling and the fourth unloading; the coal was powdered anthracite (from Pembrokeshire pits, brought around the coast by steamer) pumped in by compressed-air 'jiggers' whose descendants could still be seen at work at Goodwick brick works in 1969.

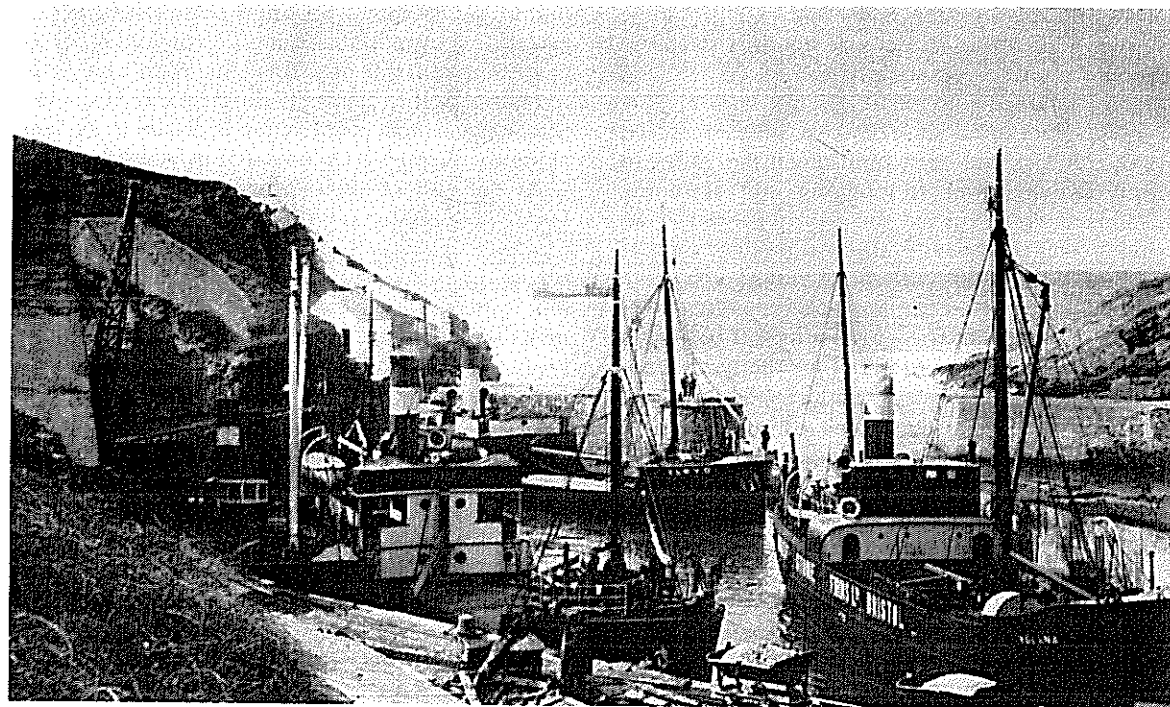
photo dated 1890

Lower right:

Three masted barque leaves the harbour into the teeth of the gale. Porthgain was a difficult port to enter in sailing days, the master having to 'aim' his ship at the small entrance while well out to sea, using as his beacons the main stack and a pair of white-painted obelisks on the cliff (one is visible, left)

photo 1895





away on the clifftop, fed by narrow gauge tramways and Peckett steam locomotives, and great brick hoppers were built to store the various grades of road metal while they awaited shipment to far away places to make our road system one of the finest in the world. Porthgain had reached its finest hours.

The harbour was altered and enlarged in 1902-4 as it was awkward for the larger generation of steamship; everyone still aimed for the dangerous inlet by using the tall brick stack and two white marker-cairns, and it must have been a nightmare for sailing ships, trying to get enough way on them to ease their hulls through a narrow, wave-torn gap in the cliffs once in their shadow and without motive power. Now ships took bricks and tiles and granite blocks to Cardiff, London, Dublin, the West Country, Kent, Rotterdam, France and Germany and the Baltic ports. The company had an imposing billhead to match its prosperity. There were rows of cottages by the harbour side, up on the cliffs and up the valley inland, and a little corrugated-iron

Porthgain's Zenith—with its fleet of 8 steam ships supplementing more than 50 small sailing vessels—the flagship, 'Porthgain', is loading crushed granite for use as road metal.

schoolhouse for the workmens' children. There were rumours of a connection with the railway system, and so a third gauge was added to the already complicated points system in the harbour—with 1'11½", 3'0" and 4'8½" it must have been an engineer's nightmare, especially where the lines met or crossed!

But troubled days lay ahead. Porthgain now had competitors on the main trunk railway lines—Blaenau Ffestiniog, Bethesda and Nantlle in North Wales, Corris and the others, all had links with the great railways; Porthgain had had hopes of this when the London and North Western Railway had planned to run a link from Fishguard to St David's—there are even plans of this odd scheme to be seen in libraries, but like many enthusiastic rail dreams, it faded, and all Porthgain's standard gauge track

ever carried was a steam crane. After the peak year of 1909 the Company must have thought they were in the big time—four hundred shipments of over 40,000 tons of slate and granite chippings (bricks were no longer made and the kiln was being demolished), their proud little fleet of steamships constantly on the move with 4 smacks, 43 other steam ships as regular visitors, a permanent haze from the ground granite (which must have been a terrifying health hazard, but no-one knew about pollution then), mounds of road metal, waste from the old brick-clay washing, and loads being hauled about the place by traction engines . . .

The First World War killed Porthgain as it killed so many of her sons. The labour force vanished, some never to return. Some ships (including the flagship *Porthgain* herself) were sunk by U-boats; building was drastically cut as was new road building; the railway never came: Porthgain hoped for better days after the fighting, after the Boys Came Home. It wasn't to work that way. Other places could offer cheap road metal by rail, cheap slates

(which in any case were being supplemented by new materials like concrete or asbestos); by 1931 only one shipment a month was leaving the little port. It closed down, as these places often do, the labour force simply walking out and leaving the Peckett loco and its trucks, the railway lines, houses and workshops like some ghost town on the cliffs; though scrapmen and vandals have been through since. Although much ironwork went in the Second World War, there is still much to see of this extraordinary place, summing up how industries, like living organisms, grow and thrive and die. The horses are no longer in their smart, brick red stables alongside an engine repair shed and donkey engine stand at Pen Clegyr Point. The main brickmaking building stands in its magnificent granite glory as a centre piece to the now abandoned harbour, used by local lobster fishermen (who seem to leave a

Advertisement for Porthgain's wares, 1888, from a local paper. The granite was used to build much of Dublin and other fine city buildings including the Tate Gallery.

St. Bride's Quarries, Porthgain.

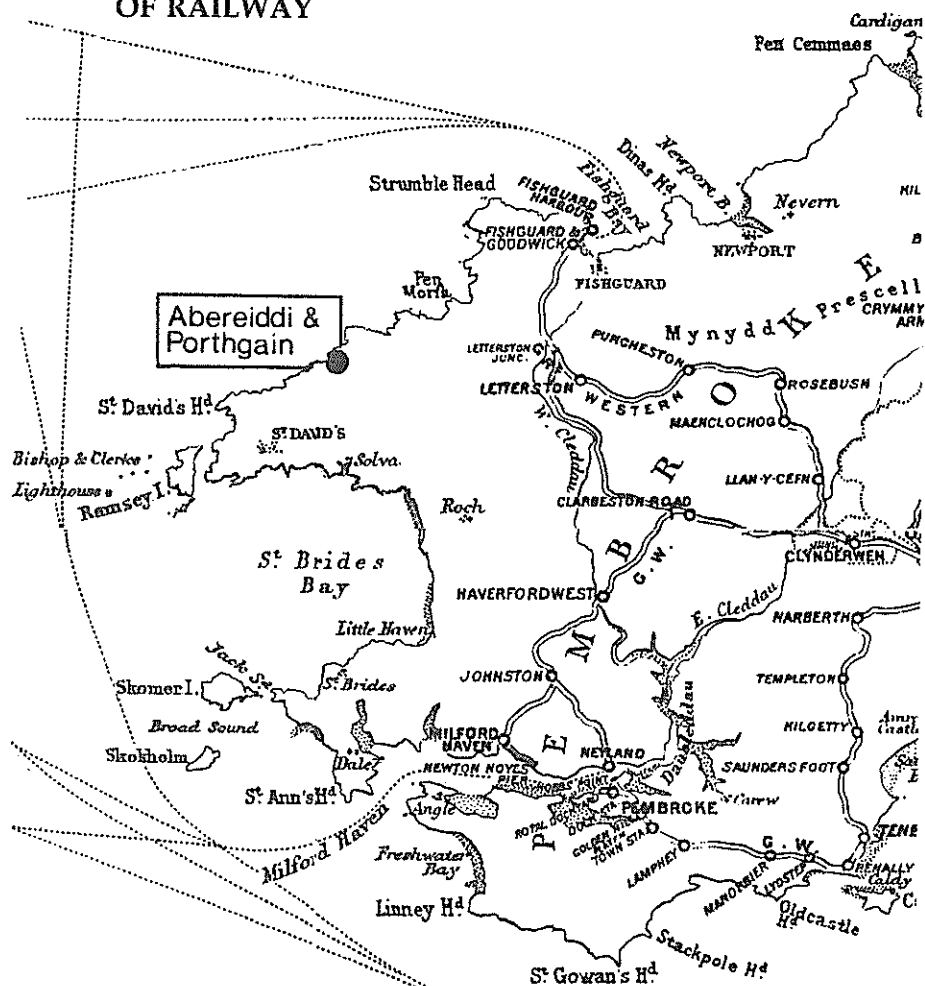
THE Manager of these Quarries wishes to draw the attention of Builders, Farmers, and others to the large quantity of Third Quality Slates which he has in stock and which will be sold cheap; also to the splendid Flooring Flags that are now ready. Floors are cut to order at the lowest price possible. There are also some excellent Trwyn Llwyd Slabs suitable for Tombstones and Trwyn Llwyd Sills which cannot be excelled in Wales; these will be sold at a price to compete with any other Quarries. For further particulars apply to the Manager, JOHN FRASER, St. Brides Quarries, via Letterston, R.S.O.

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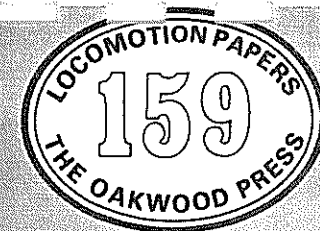
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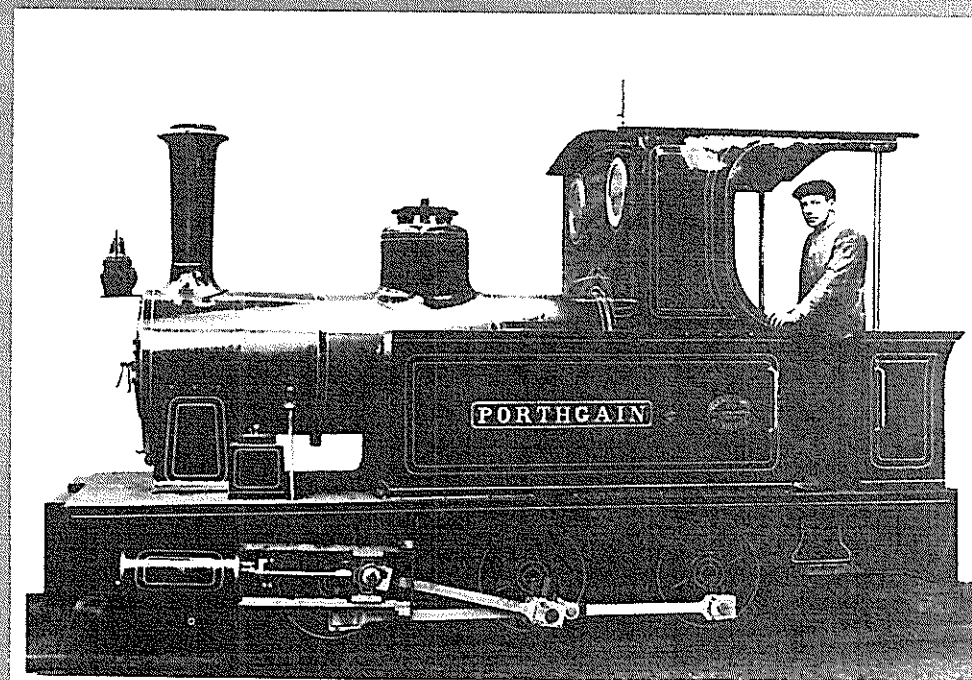
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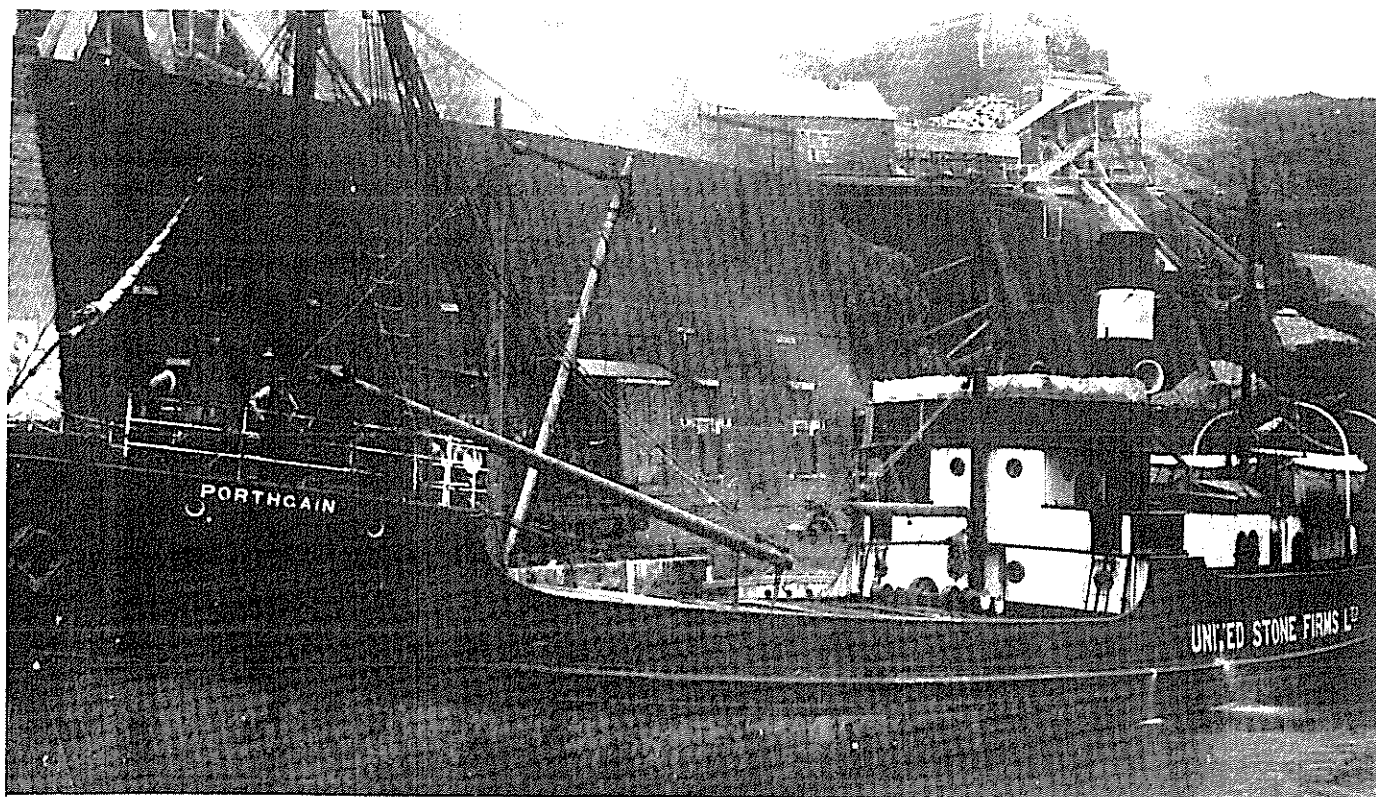
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THE RAILWAYS OF PORTHGAIN AND ABEREIDDI

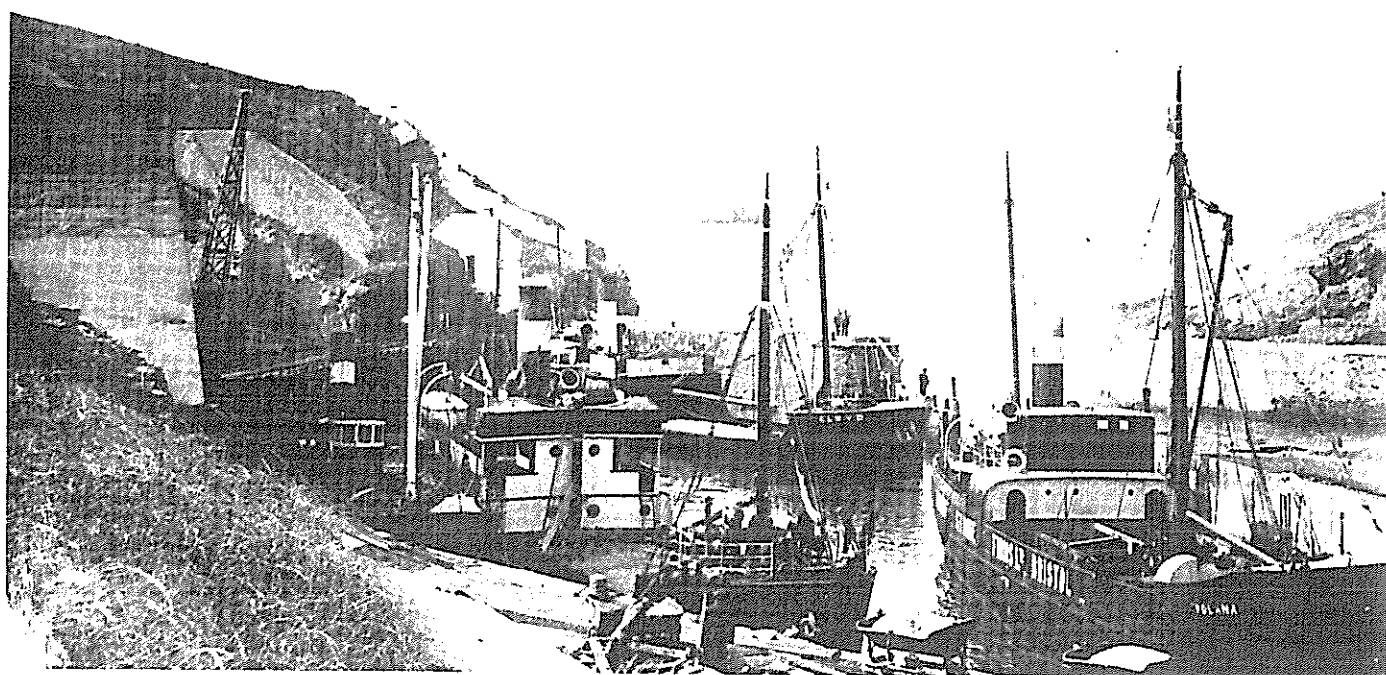
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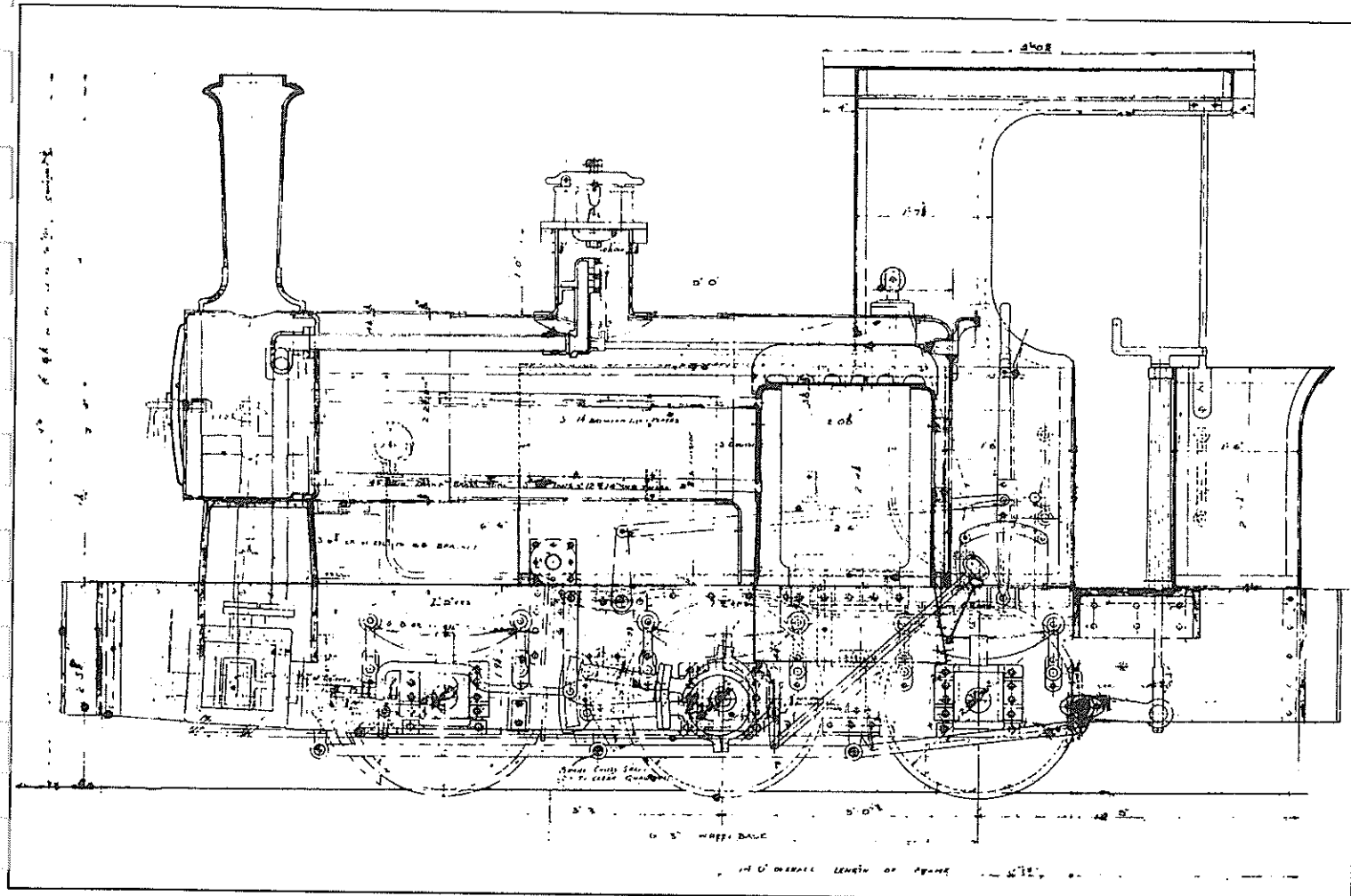
One of the steam cranes loads a cargo of crushed stone into the holds of S.S. Porthgain. c.1910.

R. Worsley

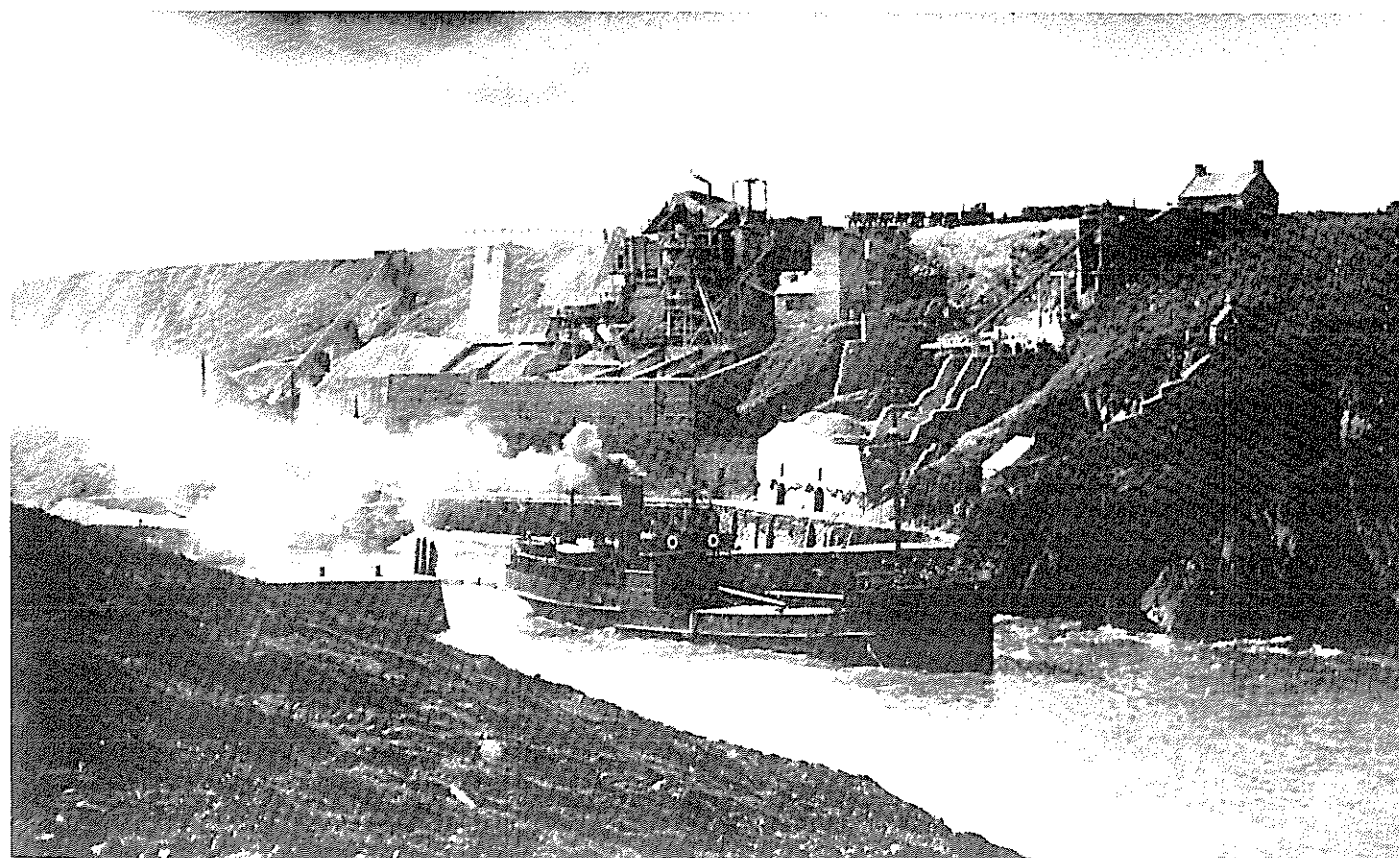


Congestion in Porthgain Harbour! Five of the United Stone Firms' fleet are visible in this 1909 view.

R. Worsley

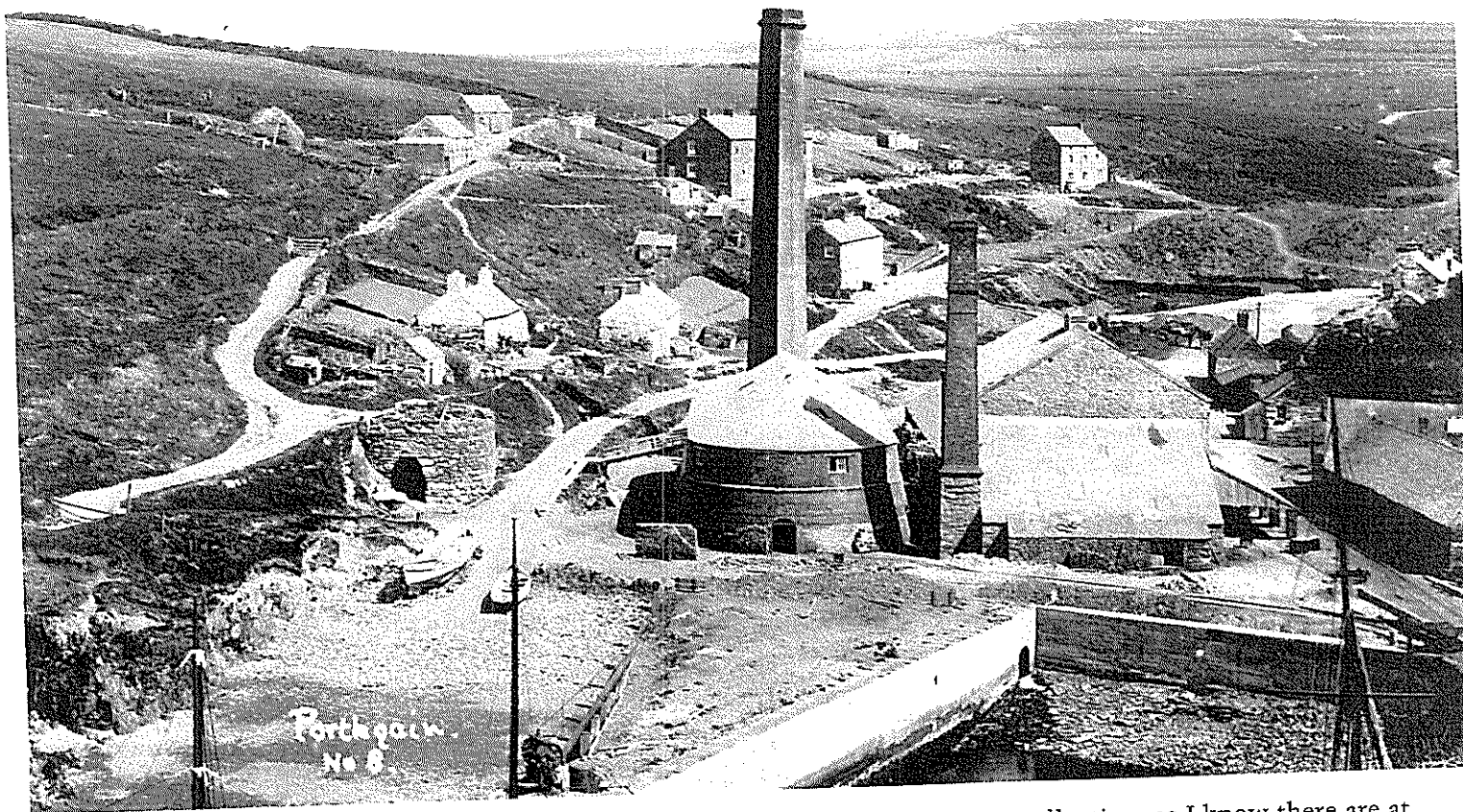


Official line drawing of Porthgain from Andrew Barclay & Sons. Glasgow Museum



Porthgain propels a rake of tipper wagons towards the stone crushers as a laden steamer leaves Porthgain Harbour. c.1910.

R. Worsley

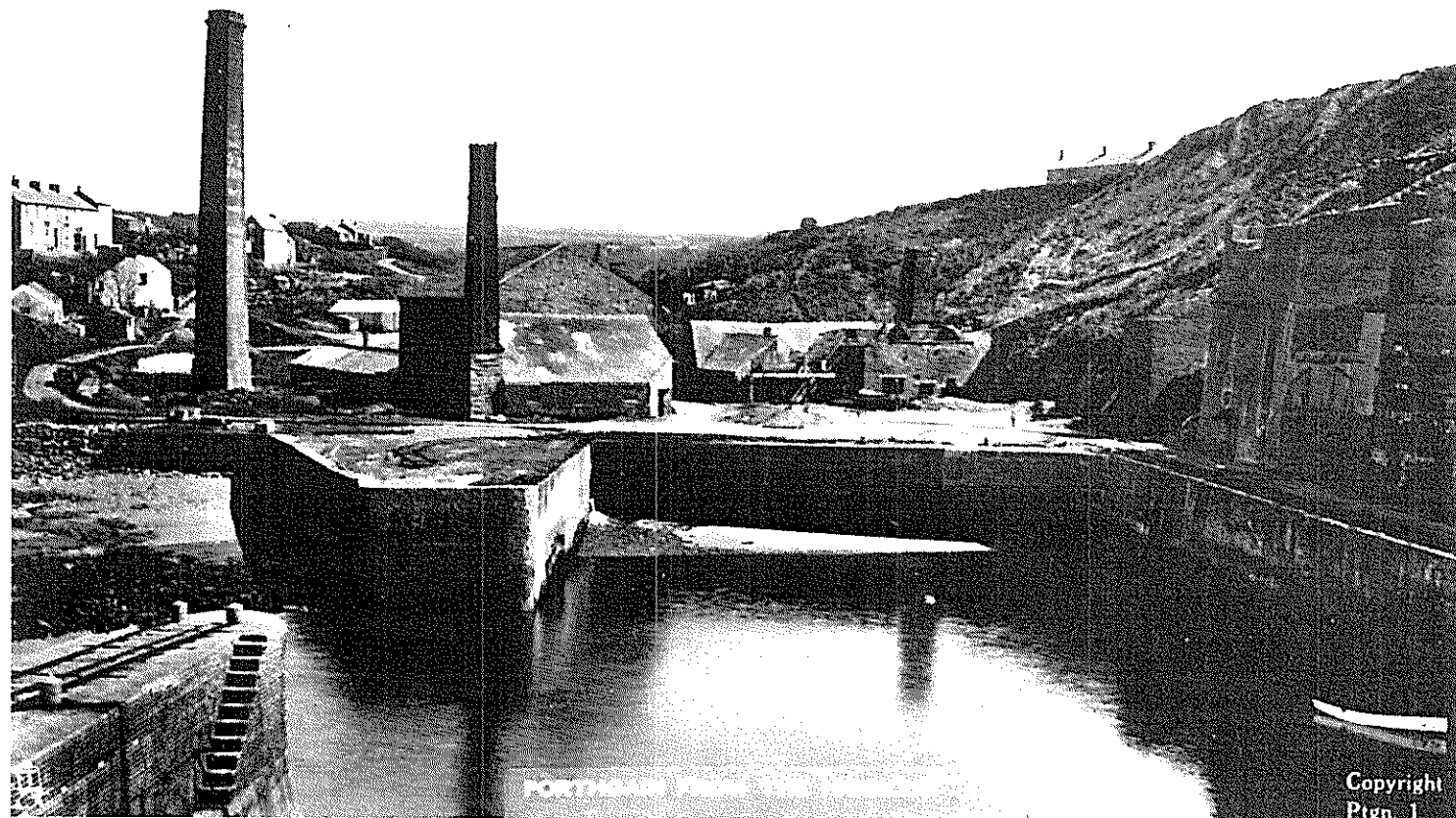


12. Another Porthgain card and as you can see it is marked no. 8. I have five in my collection, so I know there are at least another three to find somewhere. The Brick Works was a place of work for a number of local people, and if you look very closely you can see in the background men loading stone or brick waste with their horse and cart. Notice the two men on the lower path having a break from work. On the bottom right you can see the mast of one of the schooners or ketches in the harbour.



11. This card and the next are superb examples showing Porthgain Village and the Brick Works and shows how busy this place was at one time. The row of cottages on the left still stands, and in the background there is a sailing ship in the harbour. This is a rare and much sought-after card.

wn
rket



10. In this collection of postcards I have included many rare cards which have not previously been seen, such as this interesting view, by Raphael Tuck, of Porth-gain harbour, taken in about 1918.

List and Summary of the Management, Structural and Enhancement Surveys and Previous Work with regard to Industrial Archaeological Interests.

Porthgain Improvements.

This term is used to describe the recent works carried out at Porthgain over the last decade and they are considered here only for their impact on the industrial archaeology. Information source : PCNP's Porthgain files assembled by S. Brown and read through by HJ.

Harbour Repairs & Improvements:

In 1994 G Mouchel and Partners, Consulting Engineers, carried out a Harbour & Hoppers Study for the Park. (with Phil Roach, final Report not seen by HJ).

Important points are that plans and elevations were drawn which could serve as a basis for archaeological recording of the structures. It is great pity that archaeological survey was not carried out at the same time - a missed opportunity. See Fig. 4 for details that could be added to Mouchel's elevations of the hopper facades. Similarly for the harbour, the different methods of construction and different materials were noted by the engineers also that 'the interfaces between the various stages of construction are very apparent.'. If any detailed drawings were made these too could serve as a basis for archaeological annotation.

The repairs and improvements to the harbour have given new concrete cappings to the harbour walls, a new wall and bench at the inner end and new bollards on the 1904 harbour pier. It seems that the tarmac surfacing of the west quay at the base of the hoppers has covered the remains and seating for earlier rails (Jermy p. 44). Was any record made ?

Mouchel were glad to report that following consultation with Cadw, there appear to be 'no undue constraints for conservation requirements' and 'in summary, Cadw accept that any money available for repair at this stage should be concentrated on providing a robust repair of the main facade in materials which would have been appropriate had the structure still been in use - i.e. lintels in concrete or steel.'.

The facade has been consolidated - the hopper chutes and entries have all been grided and in some cases adapted to local fishermen's use. Electric lighting has been installed (the SMC from Cadw required some archaeological observation and records of any details revealed during this work. I haven't seen any, and we don't have any information in the Archaeological Trust's SMR.

Porthgain Enhancement Survey

This contains an excellent Report *The Industrial Heritage of Porthgain* by Judith Alfrey, sub-consultant to Peter Holden. This provides a good overview by a recognized and respected practitioner in the field. This present Report complements Ms Alfrey's. (A recent publication of hers with C. Clark *The Landscape of Industry: patterns of Change in the Ironbridge Gorge* Routledge 1993 is well regarded.

(HOPPERS, facade W. Quay. Porthgarni).



Status and Interest of the Site

Statutory Protection.

Ancient Monuments and Archaeological Areas Act 1979.

The west side of the harbour, the hoppers and remains of the stone crushing works, the harbour master's office and the tunnel and tramway from the quarry to the works are all designated as Scheduled Ancient Monument Pe 382. Following the roofing of Ty Mawr the boundaries of the scheduled area were redrawn to exclude the building, now designated a Listed Building, Grade II. The Scheduling indicates that the complex is considered to be of national importance and the latest assessment of importance on the 1989 Cadw AM107 forms states:

An important and imposing industrial complex, little changed and dramatically sited in what has become a beauty spot on the Pembrokeshire coast.

Also scheduled is the limekiln Pe 388, NW of The Sloop Inn, scheduled in 1976 as 'a good example' and thought to be of late 18th/early 19th century date. In 1991, Cadw descheduled the monument and considered it was better protected as a Listed Building Grade II :

this limekiln is typical in date and form to a large number of limekilns in Pembrokeshire subject to a recent study . It cannot now be viewed as an exceptional example , and is therefore better protected as a listed building Grade II.

Planning (Listed Buildings and Conservation Areas) Act 1990

In addition to Ty Mawr and the limekiln, now Listed, the following have also been Listed within Porthgain. :
(photocopies of the full listing descriptions were reproduced in the Porthgain Enhancement Study.)

Y Stryd/The Terrace: Grade II.

The reason for listing is because they are considered: 'a rare survival of industrial workers' housing in rural south Wales' The buildings were extensively renovated for modern uses in 1985.- BUT were any records, plans and photos made or taken of the buildings prior to modernisation ? DAT don't have any, The National Monuments Record hasn't and I saw none in the Porthgain files at PCNP.

The Pilot House

The reason for listing is 'Group value with other listed and scheduled items at Porthgain harbour. This seems to get called The Harbourmaster's office but it wasn't. It is important to get right because its an important part of the maritime history of Porthgain that there was a pilot. Note that the steps are included in the listing. Not mentioned, but clear from earlier photographs, is that there was a gable end shaped wall with a window in it at the top of the steps providing a sheltered look out point, for incoming vessels in the offing which might need the pilot's services to enter the narrow nd difficult harbour. Future research (which I haven't had time to do) could be directed at looking at 19th and early 20th century Pilotage and Sailing Directions handbooks, which would give details of the Porthgain Pilot. Could be useful to get some nanes and characters if there were to be any Interpretative facility at The Pilot's House.

Other items listed - the telephone kiosk and the eastern navigation beacon .

Porthgain's place in the Park

Conservation Area:

An 'official', or planning recognition of Porthgain is in the proposed Conservation Area statement: 'Porthgain has a unique character which it is considered deserves conservation and enhancement'.

Comment: the architectural descriptions and characterisation as an 'estate' village is perhaps a little misleading in that it was an industrial village - the present day 'open' feel is of course due to the near wholesale removal of the former industrial buildings from the valley floor. In another project within the 1997/1998 Service level Agreement for provision of specified archaeological services, between Cambria Archaeology and PCNPA, information on settlement typology and morphology will be forwarded to Park Officers preparing Conservation Area Statements and the information gathered for Porthgain will be recast for this separate need.

Industrial and Maritime Archaeology.

Porthgain is one of a group of small harbours on the north Pembrokeshire coast - Porthclais, Abercastle, that have made the transition from coastal trading to modern fishing/leisure use without losing their character. This is principally due to the difficult weather, lee shore, tidal and other navigation difficulties of the cliff coastline - these constraints give the harbours an even greater interest and appeal. This has discouraged any 'marina' type projects.

Porthgain has a **unique position** in Pembrokeshire's industrial archaeological heritage - there are or were other slate quarries, there were brickworks, there were stone crushing and grading plants, there were tramways and railways for industrial use, there were harbours for export of bulk cargoes from inaccessible locations by road - but Porthgain combines all these aspects.

Fishing.

Porthgain today is portrayed as a living community that does not dwell overmuch on its industrial past, but relies on the crab and lobster fishery and tourism. There was coastal fishing before the intense, but relatively short-lived industrial phase, to which the local community has now returned and for which the harbour has been utilised. Continuity then rather than discontinuity. Recent work by former National Museum Director, Dr. Geraint Jenkins, on the history and heritage of the Welsh fishing industries has useful information on the Pembrokeshire Crab and Lobster fisheries that provides a past and present context for the Porthgain fishery.

Summary of current guidelines and 'best practice' in conservation, management and display of industrial archaeological sites.

In 1991, the Association for Industrial Archaeology produced in 1991 a policy document *Industrial Archaeology: Working for the Future*, offered as "a preliminary policy statement for industrial archaeology in the 1990s with recommendations for their implementation".

Relevant to Porthgain are recommendations for storage and dissemination of records on sites in the regional *Sites and Monuments Record*. PCNPA has adopted the relevant sections of Dyfed Archaeological Trust's regional SMR as its record for archaeological planning purposes. Programmes of Typological Research are recommended "to establish the significance of individual buildings and sites in relation to others of similar function". The impact of industrialisation on a landscape has been little studied and this is strikingly demonstrated at Porthgain. It is recognized that in the Policy Statement that not all industrial structures and buildings can be maintained; even if not demolished, they will continue to deteriorate. Surveys and plans are therefore very important. Perhaps more controversially The Association recommended that the statutory bodies (i.e in our case Cadw) should "be prepared to undertake emergency repair and consolidation work on Scheduled structures . . . subject to Management Agreements".

As a very much larger body than Cadw, it is not surprising that **English Heritage** are able to produce a series of policy statements and then provide resources to implement them. EH's 1995 policy statement on Industrial Archaeology is reproduced here. Cadw have been criticised for not making strategy and policy statements:

23. Many witnesses argued that Cadw was still too cautiously reactive to events while it should do more to promote awareness of the heritage and to develop a strategy for its protection. It is suggested that Cadw should do more to communicate information to other professionals; and in this it is compared unfavourably with both English Heritage and the Countryside Council for Wales. In our view, **Cadw should take a more proactive role in forging a strategy for the protection of the heritage of Wales.** (Third Report from the Welsh Affairs Committee 'The Preservation of Historic Buildings and Ancient Monuments: Follow Up. 1996).

It would be unfair and irresponsible therefore to take explorations in a phone conversation between HJ and Rick Turner, Regional Inspector Cadw as representing Cadw's Official Policy to the Industrial Archaeology of Porthgain. However, he stressed that grants for repair and consolidation of monuments (such as the Porthgain hoppers and crushing works) were hard to get and that a public benefit in terms of access and visitors would need to be produced. In my personal opinion therefore, an approach to Cadw for financial assistance for consolidation might be best advanced if a policy of provision of vantage points for the public to get a better view of the monument were an integral part of a consolidation programme.

North Wales. I have not been able to fully explore what other National Parks in Wales' policy is towards their industrial sites. Obviously the remains of slate quarrying are a very much more dominant feature of Snowdonia National Park. Cadw has funded the Gwynedd Archaeological Trust to carry out surveys and assessments of the remains of this industry and put forward recommendations for conservation and management. The relevance of all this to PCNP and Porthgain is not so much that Park policies differ or fall short of those of other Park authorities, but rather that PCNPA might find it helpful in seeking funds for monument consolidation to have precedents for other, similar monuments being grant-aided in other areas.

I have obtained information from E Plunkett-Dillon, NT archaeologist, who attended a recent **Industrial Buildings Conservation meeting** in Cornwall (summer 1997). The Cornwall Archaeological Unit have long been involved in advising Cornwall County Council on the county's industrial sites. Special attention was paid at the meeting to the coastal remains of tin-mines, several of which have been repaired and consolidated and are seen as a significant heritage resource for the County's tourist industry. There is a growing awareness that so much has already been lost of once plentiful industrial archaeological sites and remains that action needed to be taken to preserve what was left. I have ordered two publications, *A Guide to Conserving Historic Tin Mines* and *Conservation Value of Metalliferous sites in Cornwall*. It can of course be argued that tin mines are an integral part of Cornwall's heritage and that there is nothing comparable in Pembrokeshire that is so typical. Porthgain however is a unique resource both as a coastal industrial site and a coastal industrial archaeological landscape.

Industrial archaeology: a policy statement

- 1 English Heritage recognises the unique international significance of the country's industrial heritage and will complete theme studies of industrial buildings and monuments under the Monuments Protection Programme and List Review in order to identify important sites and structures which deserve to be retained and recorded. We will encourage the government to provide appropriate statutory protection for the industrial heritage and we will offer planning guidance where necessary for the management of significant sites in their landscape context; we will also seek urgent action where needed to safeguard important threatened industrial sites which are suitable for long-term preservation.
- 2 Encouragement will be given to the identification and repair of industrial buildings and monuments which are at risk, through commissioning example feasibility studies, targeting repair grants in accordance with financial need, and promoting the suitable and flexible reuse of former industrial buildings.
- 3 Responding to a period of rapid economic and technological change, English Heritage will work with RCHME, local authorities, and the Science Museum to encourage the timely identification and recording of significant industrial landscapes, sites, buildings, structures, machines, and processes, and to help with their effective management. Where the option of retention cannot realistically be achieved, a record of last resort is essential.
- 4 Public appreciation of the industrial heritage will continue to be promoted through education and publication and through access to, and the interpretation of, our historic properties.
- 5 English Heritage will explore with the national agencies – particularly the Museums and Galleries Commission and the Science Museum – the suitability of existing arrangements for management of the country's most important preserved industrial sites and monuments.
- 6 We will review the adequacy of existing resources to sustain the special needs of display and demonstration for industrial archaeology where appropriate and will cooperate with government agencies and others, including the National Trust, to preserve important industrial sites.
- 7 Our commitment to education and training in industrial archaeology and conservation of the industrial heritage will be maintained through relevant publications and lectures by English Heritage staff.

Conservation Objectives

1. It should be recognized that there are still many aspects of the site that are not precisely understood - exactly how all the surviving structures and features, however slight, relate to the industrial and transport processes known to have been carried out at the site. A full survey with a plan, profiles and measured drawings and elevations should be seen as an urgent and important conservation objective for the following reasons:

to record details that are likely to collapse or erode, thus removing and destroying evidence for the site.

to better understand and appreciate the whole site which should be seen as a long term asset and resource for PCNPA not a problem and a liability.

a survey and record would be required for Scheduled Monument Consent for any extensive or intensive works.

2. A strategy for the hoppers and crushing works needs to be developed to, ideally, 'conserve as found'. This strategy needs a detailed structural survey and assessment as its basis. R. Turner of Cadw thought that WS Atkins had carried out such a survey but I have not seen this. If not, and if a fresh survey were to be commissioned, any dedicated archaeological survey and record should form part of the engineering survey. This would be much more cost-effective than a stand-alone archaeological survey.

3. The strategy (likely to be delivered through a long-term repair/consolidation programme because of cost) should be shaped by decisions on an Interpretation and Display strategy (see next section). If, for example, a decision is made to provide access to a secure vantage point on the Crushing Works to look down on the hoppers, any clearance, consolidation and safety fencing programme will be determined by this objective.

Interpretation Objectives.

These divide into site and access-based and static, undercover interpretation ideas.

On-site and Coast Path-based.

1. At a basic level the industrial structures at Porthgain are appreciated as striking ruins in a landscape (Piranesian is the over-worked adjective!). Other visitors may welcome an opportunity to see more of the site. Both purposes would be answered by the provision of one or more **vantage points**. It has to be recognized that at present, and for the foreseeable future, Porthgain hoppers and cliff top works are unsafe for free access by visitors. Two possible positions - one at the top of the flight of steps up from the Pilot House and the other on top of the Crushing Works are marked on Fig. 5.

2. It is recognized that it may not accord with Coast Path philosophy to provide a number of **Interpretation Boards or Panels** on the site. But equally so-many alterations have been made to the facade of the hoppers by the West Quay that a single plan-type panel would not be intrusive. An Appendix to this section summarizes possible Panel location and content either as a line of Panels on a facade or on plinths at specific locations. The latter may be seen as intruding onto the wildness of the location, and also be technically difficult in harsh wind, weather and cliff top locations. A single, basic information board might be necessary to direct the visitor to specific vantage points and warn them off other areas. A panorama type display with names and functions of buildings and structures labelled could be designed to be incorporated into the secure railing demarcating the vantage points.

3. Possibilities for an **Industrial Archaeology Porthgain and Abereiddy Trail and Trail Leaflet** should be explored with the National Trust, promoted by production of a simple, robust Trail leaflet widely available and grafted onto any suitable series of Park, or NT walks leaflets or pamphlets currently produced. Decisions on the Conservation and Interpretation Strategies would need to be taken first in order to sort out where access could and could not be provided. This would also function as a circular walk.

4. Undercover Interpretation/Heritage facility.

It is assumed that this would be in Ty Mawr. This could be produced in many ways; to give a few examples:

As **Backcloth** (perhaps simply with a series of old photographs) to permanent, changing or temporary displays, exhibitions, events or activities.

Using the Industrial Archaeology as a **link subject** to the **geology** of the area - or the Park by stressing the source materials for the industry. Using the maritime history of the area as a link to today's maritime and fishing activities, either locally, Pembrokeshire - wide or covering the Irish Sea. - or even as a 'twinned' exhibition featuring similar subjects from *Parc Armorique* - twinned of course with a similar heritage promotion in Brittany on Pembrokeshire?!

(see photocopy from *Earth Heritage* attached)

