

The Slate Quarries at Easdale, Argyllshire, Scotland

By D. G. TUCKER

SUMMARY: *In this article the author draws attention to the little-known slate industry that flourished in the Slate Islands off the west coast of Scotland. From small beginnings in the 17th century, the industry reached a peak around 1900, before declining to extinction in the 1960s. Attention is focused on the unusual location of some of the quarries—below sea-level—and of their consequent vulnerability to natural disasters.*

INTRODUCTION

THE SCOTTISH SLATE INDUSTRY is much less well-known, even in Scotland, than the corresponding industry of North Wales. No doubt this is mainly due to its much smaller size, and perhaps also to the geographical remoteness of its location. Apart from some minor quarries, which are mentioned later, it was concentrated in two main places: Ballachulish, about 10 miles (16 km.) S.S.W. of Fort William, and the so-called Slate Islands, of which the most important was Easdale, about 11 miles (18 km.) S.W. of Oban. The industry had probably started in both places before the end of the 17th century; in Easdale before 1631, and at Ballachulish in 1697.¹ As demand for slates expanded in the 18th century, new quarries were opened, and in the Slate Islands some of the new quarries were in the islands of Seil, Luing, and Belnahua. The industry reached its peak production around 1900, declining only slowly for two or three decades, then more rapidly, finally dying out in the early 1960's—thus following much the same pattern as the Welsh slate industry. The peak output from Ballachulish and the Slate Islands, taken together, was probably just over 32,000 tons (about 25 million slates), in the year 1904, with a value of about £60,000.² The number of persons employed by the quarries was at its peak of perhaps 600–700 some decades earlier; increasing mechanization had enabled output to increase while the number of employees decreased.

This paper is concerned with the present-day remains of the industry at what is loosely called Easdale.* In fact this comprises the village of Ellenabeich,† formerly

¹ David Bremner, *Industries of Scotland*, (Edinburgh, 1869), 424–432.

² B. N. Peach, H. Kyneston, and H. B. Muff, *The Geology of the Seaboard of Mid Argyll*, Mem. Geol. Survey Scot., (H.M.S.O., 1909), 104.

* Since this paper was submitted for publication, a short article on the same subject has appeared in *Argyll* Vol. 2, R.C.A.H.M. [Scotland] H.M.S.O. 1975.

†Spelt Ellanbeich on Ordnance Survey maps. I have used the spelling Ellenabeich as it was used by Bremner in 1869 and in the minutes of the Parochial Board in the 1880's, and the additional syllable accords better with the 18th century spelling Islanabeich which appears in the accounts and memoranda of the Marble and Slate Co. of Netherlorn.

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a very small, separate island, but for a century or more joined by the debris of the slate industry to the large island of Seil, and the Island of Easdale, separated from Ellenabeich by a narrow strait. It was from the beginning the headquarters area of the industry in the Slate Islands, and the company working the quarries was generally known as the Easdale Company. It differs from most of the other quarry areas of the Islands in having its quarries below sea level. The other areas would doubtless repay close study, but so far have been only rather superficially inspected by the author.

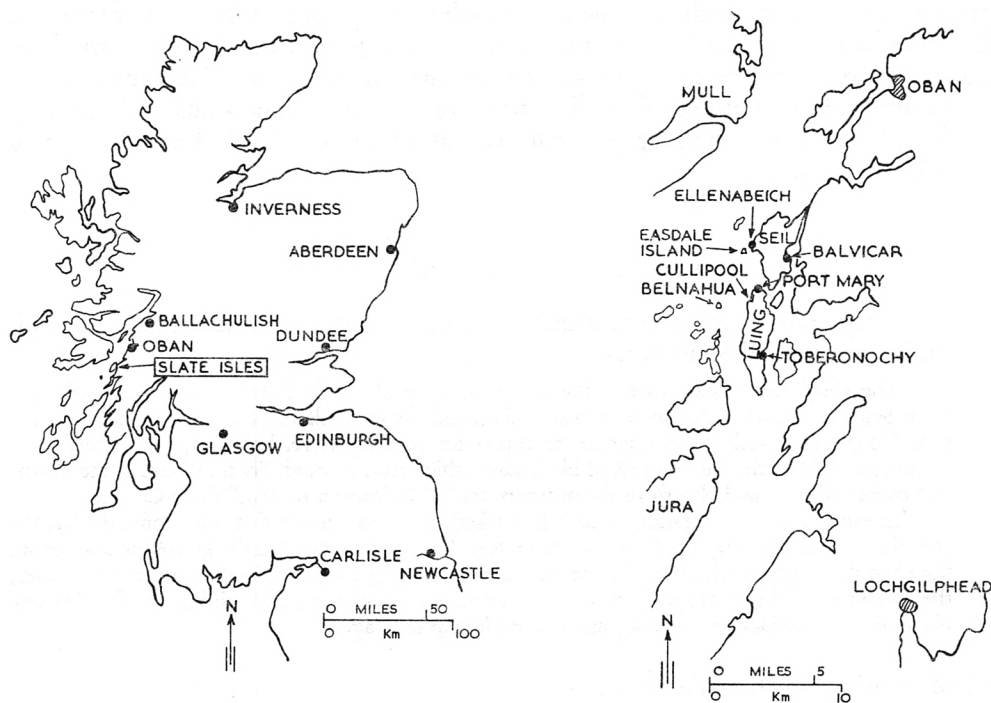


FIG. 1

- (a) Map of Scotland showing location of the Slate Islands.
 (b) Map showing location of quarry areas within the Slate Islands

LANDSCAPE AND COMMUNICATIONS

Seil and Luing are sizable islands, each some 5 miles (8 km.) long by about $1\frac{1}{2}$ miles ($2\frac{1}{2}$ km.) wide, with rocky hills reaching 479 ft. (143 m.) on Seil and 269 ft. (81 m.) on Luing. Easdale and Belnahua, on the other hand, are diminutive islands, the former roughly 700 yd. (630 m.) and the latter roughly 300 yd. (270 m.) square, with no substantial elevation. The consequence is that Seil and Luing have been merely slightly scarred by the quarrying, whereas Easdale and Belnahua have been entirely dominated by it. There is still a resident population on Easdale, but none on Belnahua.

Communication with Seil is simple; there is a bridge at Clachan, built in the late 18th century, across the narrow strait separating the island from the mainland. Easdale can be reached, on foot, by means of a small ferry-boat across the narrowest part of Easdale Sound; and Luing can be reached by a car ferry at Cuan. Belnahua remains very inaccessible.

During the period of the slate industry, these parts were undoubtedly very inaccessible, and the only reasonable transport medium was the sea. Slates were transported from all the quarries by ship from piers built as close to the quarries as possible, mostly around the middle of the 19th century; before the piers were built, the slates had to be transferred to the ships by small boats. Between the workplaces and the shore, pack horses were used at first, but tramways were introduced in the 19th century, some with mechanical haulage. In the winter conditions could be very bleak and rough, and shipping generally was at a very low level of activity during the winter months.

GEOLOGY OF THE SLATE ISLANDS

A few quotations from authoritative sources will give the essential background. Peach, Kyneston, and Muff say:—

'The chief belt of slate rock is the broad outcrop of Black Slates which runs southward from Seil and Easdale through Belnahua, Luing, and the east side of Scarba and Jura. Slates are now (1909) raised only from quarries on this outcrop. They have, however, been quarried in former years from the narrow belt of black slate which runs through Shuna Island, at the north-east corner of Jura, and also from the outcrops east of Cairnbaan on the Crinan Canal.³

'In each quarry a succession of beds is worked, from two to six feet thick individually, the combined thickness varying from 20 to 70 feet. The beds vary slightly in colour and grain, the chief differences noticed by the ordinary observer being variations in the quantity of pyrites, the glossiness of the cleavage faces, and the amount of puckering and frilling on the cleavage planes due to the incipient development of strain-slip cleavage.'⁴

Nicol, writing much earlier, said:—

'The slates extracted for roofing purposes on Easdale and Seil are usually dark-blue or almost black, with a silky lustre. They are split along true planes of cleavage; but the thin laminae are uneven and undulating. Their surfaces are thus often striated or wrinkled, similarly to what is named ripple-mark in other beds, but in this case clearly produced in an entirely different manner. Crystals of iron-pyrites (usually cubes, but with one axis often abnormally shortened) are dispersed in more or less abundance through these slates. As these crystals are not readily acted on by the atmosphere, they do not injure the durability of the slates; but, with the unevenness of the cleavage-planes, they prevent the slates from splitting so thin, or of such large dimensions, as in the Welsh quarries.'⁵

The beds are much folded, and this has resulted in some peculiar landscape formations, as on Easdale where a thin ridge like a long fin runs partly across the island.

³ *ibid.*, 104.

⁴ *ibid.*, 105.

⁵ James Nicol, 'On the Slate-rocks and Trap-veins of Easdale and Oban', *Qly. J. Geol. Soc. Ldn.*, 15 (1859), 110-16; esp. p. 111.

HISTORICAL OUTLINE⁶

Practically nothing is known of the history of the Easdale slate quarries before the formation of the Marble and Slate Company of Netherlorn in 1745.⁷ The company comprised four kinsmen, all Campbells, of whom the senior was the second Earl of Breadalbane. It purchased the rights and effects at Easdale for £826 18s 8d from Colin Campbell of Carwhin, who was one of the partners in the new company. Seven crews were taken over, each comprising four or five men, and together they were able to produce about a million slates a year at a price of about 10s per 1,000. The company, which had also to pay overseers and day labourers and certain overheads, sold the slates for up to £1 per 1,000 at Easdale. Purchasers, who came from most coastal parts of Scotland, had to arrange their own shipping. Demand grew and new quarries had been opened at Ellenabeich on Seil and in the Island of Luing by 1751 and in Belnahua by 1766. Production rose to about five million per annum in 1800, but seems to have declined during the 19th century. The number of men employed had, of course, increased during the second half of the 18th century, numerous additional quarries had been opened in many places in the neighbouring island and on the mainland, and cottages—probably numbering about 300—had been built to house the quarriers' families.

The company was dissolved in 1841, and Lord Breadalbane, who had been a partner and was in any case the landlord, took over direct control until his death in 1862. He continued a process of gradual mechanization, which had already involved a Newcomen steam engine towards the end of the 18th century, then a windmill, and later other steam engines, together with the construction of some tramways; but it is probable that he failed to make a success of the business. After his death the quarries evidently ran down very quickly. The organization broke up and after some years of uncertainty the quarries were divided among a number of separate companies. They never again came under a single control.

From this time onwards the slate quarries at Ballachulish had an annual production greatly exceeding that from the Slate Islands as a whole, so that the Easdale contribution to the Scottish slate industry became rather insignificant. Statistics of production for the individual areas have not been found, but it seems likely that the output at Easdale declined more rapidly than that of other areas, and repeated financial failures led to a final closure in 1911. Some sporadic working on a very small scale took place until the 1950s. Slate production in the Slate Islands as a whole ceased just after 1960.

There are records of repeated negotiations between the management and the quarriers regarding conditions of work, especially the methods of payment. Originally the men were paid only for the slates which the company sold, so that in bad years they produced an accumulation of unsold slates and earned little money. Later, in 1769, provision was made for the men to be paid most of the value of unsold slates, but in 1799 the system reverted to the earlier one. There was usually

⁶ D. G. Tucker, 'The Slate Islands of Scotland: the History of the Scottish Slate Industry', *Business Hist.* in course of publication.

⁷ Various journals, minutes, letter books, etc. of the Co. are in the Breadalbane muniments in the Scottish Record Office, ref. GD112/18.

provision for day wages to be paid for preparatory work in clearing the ground and removing rubbish. The great decline in the slate trade after 1900 brought many labour troubles, including strikes. During the Breadalbane regime, at least, the employers had shown much concern for the general welfare of the workers, physical, mental, and spiritual.

After the break-up of the Easdale Company (as the Marble and Slate Company of Netherlorn was usually called) in 1866, the Easdale quarries became for the first time openly exposed to competition from the other quarries in the Slate Islands. Far more serious, however, was the competition from other areas.

From outside Scotland, the competition of the North Wales slate industry was, of course, severe, and resulted in the markets for Easdale slate being confined to Scotland.

Within the rest of Scotland, there was competition from a number of other quarry proprietors, widely distributed over the country, and some nearer the markets. Some minor slate quarries were operated at a number of places for purely local purposes, but only two of these are worth mentioning. The quarries at Birnam, near Dunkeld in Perthshire, employed in the first decades of the 19th century a force of 15–20 men, producing mainly blue slates. There were also two quarries at Luss, by Loch Lomond, which at the end of the 18th century were selling about 300,000 slates a year; these were not good quality slates and were said to decompose after about 20 years.⁸

The only real competition in Scotland came from the Ballachulish concern. According to Bremner,⁹ the West Quarry there was opened a year or two before the end of the 17th century by Mr. Stewart of Ballachulish, and the larger East Quarry was not opened until 1780. The quarries remained the property of the Stewart family until 1862, when they were sold to Robert Tennant of Leeds. During the Stewart ownership, the slates were sometimes worked under the direct control of the owner, sometimes by a tenant.

According to Smith,¹⁰ the Ballachulish quarries were, in 1825, not so extensive as those at Easdale, selling only about one-half as many slates. By about 1845, according to M'Pherson,¹¹ the slate production was around 5–7 million per year, about the same as that of the Easdale Company. From the 1860's onwards, the Ballachulish production greatly exceeded that from Easdale as far as the limited records go.

THE INDUSTRIAL ARCHAEOLOGY OF EASDALE

QUARRY REMAINS IN THE SLATE ISLANDS GENERALLY

The most obvious feature of the slate quarries as one approaches Easdale is that they all appear to be below sea level, and in consequence are now all flooded. Certainly the slate was removed by excavation downwards, and from the 18th

⁸ G. Smith, 'Account . . . of the Principal Slate Quarries in Scotland', *Trans. Highland and Agric. Soc.*, 10 (series 2, vol. 4) (c.1825), 94–7.

⁹ Bremner, *op. cit.*, 429

¹⁰ Smith, *op. cit.*

¹¹ Finlay M'Pherson, 'Parishes of Kilbrandon and Kilchattan', in *New Statistical Account of Scotland*, 7, Part 2 (Edinburgh, (c.1845), 71–81).

century pumping was used to keep the quarries free from flooding as they became progressively deeper.

In this respect the quarries at Easdale Island and Ellenabeich are not typical of all quarries in the Slate Islands. At Balvicar and on the island of Luing the slate has more generally been taken from hillside quarries, with the result that the working faces are exposed to view. This causes the scene to be far less attractive to the eye. On Luing one still finds neat stacks of unused slates, generally of a small size, but at Easdale only worthless debris remains, presumably because of less recent closure and the closer association with modern and tourist development. A number of small stone buildings remain, derelict, in most places, and it is hard now to determine their original functions.

The trackbeds of tramways remain at all the quarry centres, and form convenient paths for exploration. A large proportion of the quarriers' cottages still stand and are in use. The remains of quarry equipment are negligible.

ELLENABEICH: THE GREAT STORM AND THE DEEP FLOODED QUARRY

The spectacular feature of Ellenabeich is the great lagoon between the old village and the strait called Easdale Sound on the O.S. map, Fig. 2. This was the largest and deepest of the Easdale quarries, reputedly 250 ft. deep. It had tramways on its floor, inclines and winding engines for bringing the slates and spoil up, and, of course, pumps. Although adjacent to the sea, it was protected from it by a wall of slate rock which had been deliberately left. One feels that the operational expertise of the manager and quarriers must have been good. It was unfortunate that its life as a quarry was brought to an untimely end on 22 November 1881. On that day there arose a great gale which brought with it such a storm and such tidal waves that the wall between the quarry and the sea was broken.¹² The quarry was immediately flooded with sea water and has remained so ever since, see Plate XVIIa. There was no opportunity to remove any of the equipment in the quarry and it must still be there, buried under layers of debris and over 200 ft of water, quite inaccessible by any means available to researchers. The flooding was a tragedy for the local population and it was said that 240 men and boys were thrown out of work. There was naturally other damage too to quarries, equipment, and piers throughout the islands.

The reputed depth of 250 ft. is not hard to believe. Fig. 3 shows the result of a modern sounding survey, made by staff of the Marine Laboratory at Dunstaffnage. Even after almost a century of receiving the sewage, refuse and discarded hardware of the village, the depth of water is still over 200 ft. The steep walls of the quarry are clear from the cross-section shown in Fig. 3.

At the point marked by an encircled cross in Fig. 3, i.e. on the ground level just at the quarry edge, and surrounded by the ruins of several unremarkable buildings, stands a ruined building of very substantial construction. A rough plan of its internal arrangements is given in Fig. 4. It must clearly have been an engine house,

¹² *Oban Times*, 3 Dec. 1881.

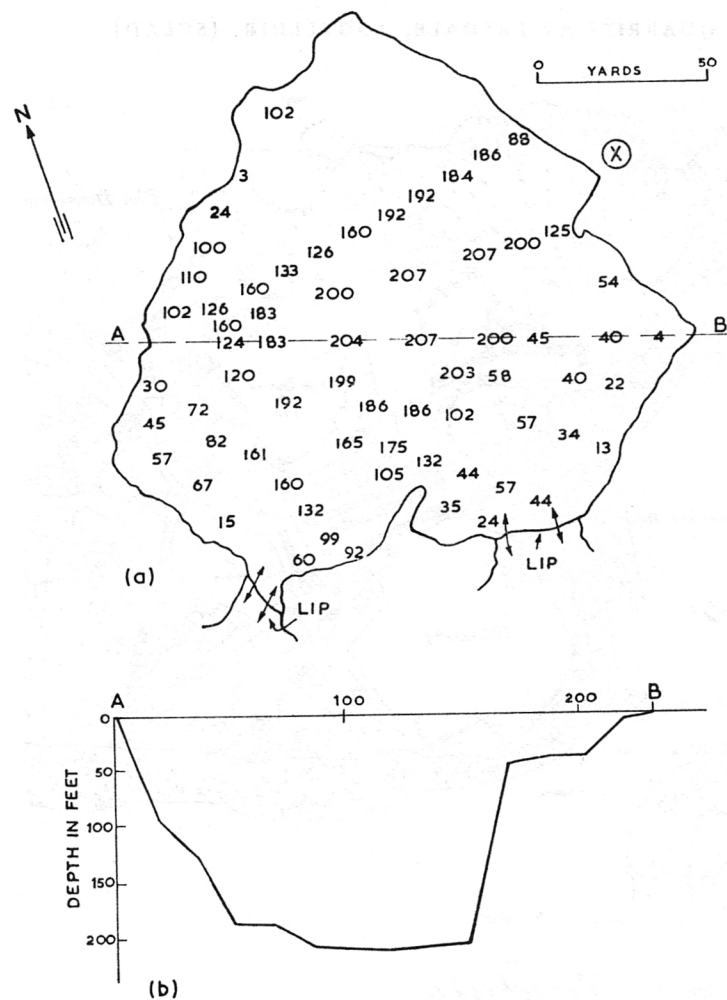


FIG. 3

Plan and cross-section of the Ellenabeich quarry showing depth soundings in feet.

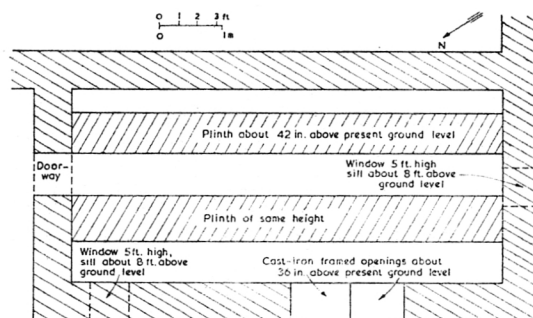


FIG. 4

Plan of old engine house at Ellenabeich quarry.

either for winding or pumping or both. There is now no sign of how the equipment operated.

There was a small weighbridge near this building of which the weighing platform and lever arm still remain; the former is marked 'W. & T. AVERY LTD MAKERS GLASGOW TO WEIGH 2 TONS'. It was presumably for weighing the small wagons or 'bogies' of slate as they were prepared for departure to the jetty.

As can be seen from the map in Fig. 2, there is another flooded quarry to the north-east of this. There is no indication of how it was operated, nor is anything known of its history. The footings of several apparently-related buildings remain.

THE QUARRIES ON EASDALE ISLAND

There are half a dozen flooded quarries, more or less at sea level, on Easdale Island; they are those which carry numbers on the O.S. map of Fig. 2. Although smaller and reputedly less deep than the large quarry at Ellenabeich, they have mostly the same feature of being separated from the sea by only a thin wall of slate, and were therefore exposed to the danger of the same calamity that befell it. A stout wall of slate slabs built between quarry No. 52 and the sea may represent an attempt to protect this quarry from this danger, see Plate XVIIb. Other stone walling at the eastern edge of quarry No. 50 was probably only to protect the quarry lip from collapse. This quarry had an inclined cutting through the upper part of its south-eastern face, presumably as the top portion of the tramway from its floor to the land-level tramway above.

A curious fin-like ridge runs across the island centrally from the north-west

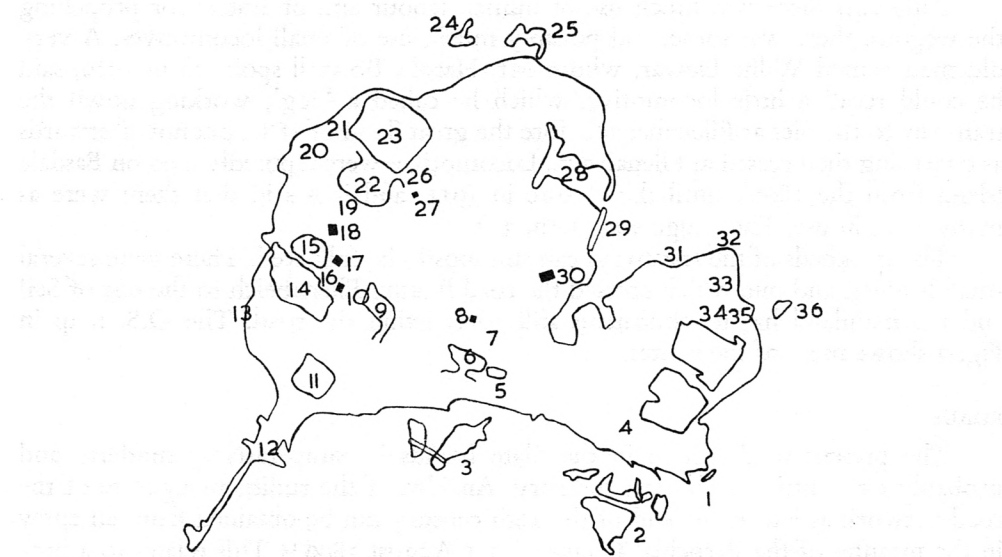


FIG. 5

Key to locations of place-names of Easdale Island.

to the south-east, and there were one or two small quarries in this, well above sea level, but they do not appear to have been very significant.

Several old buildings survive as ruins, and can be identified with the help of the Gaelic place-name map which is discussed later. In the vicinity of the quarry No. 51 are the old boiler and engine houses, and there lies nearby the greater part of a small boiler 82 in. high by 36 in. in diameter. In the same vicinity is the smith's shop, and this still has its chimney stack and two small hearths. Near quarry No. 50 is the powder house or magazine.

Along the quayside is a series of slate slabs erected as supports against which finished slates awaiting shipment could be leaned.

An idea of what the working faces of the quarries were like before flooding may be obtained from the old photograph in Plate XVIII.

TRAMWAYS

Almost all the quarries in the Slate Islands, and also those at Ballachulish, used tramways for the transport of slates and other materials within the quarry area and from the quarries to the quays or jetties. At Easdale the use of tramways started in 1836 according to White,¹³ who refers to 'railway inclines' being introduced in that year. The New Statistical Account suggests that tramways were in general use by 1843. There were considerable extensions during the second half of the 19th century; indeed very many new lines and extensions were introduced throughout the Slate Islands between the O.S. map editions of 1880 and 1900. Altogether by 1900 there were about 3.2 miles of tramway on the Islands, of which almost a mile was on Easdale Island, with just over a quarter of a mile at Ellenabeich.

Although there was much use of human labour and of horses for propelling the wagons, there was some, and possibly much, use of small locomotives. A very old man named Willie Dewar, whom Mr. Harold Bowtell spoke to in 1969, said he could recall a little locomotive, which he called a 'pug', working down the tramway to the pier at Ellenabeich before the great flood of 1881, but not afterwards as quarrying then ceased at Ellenabeich. Locomotives were reputedly used on Easdale Island from the 1860's until the closure in 1911, and it is said that there were as many as 14 in use. The gauge was about 3 ft.

The trackbeds of the tramways can still mostly be followed. There were several small bridges, and one which crossed the road linking Ellenabeich to the rest of Seil and the mainland has its abutments still constricting the road. The O.S. map in Fig. 2 shows most of the routes.

ROADS

The present road system in the Slate Islands is comparatively modern, and probably owes little to the slate industry. An idea of the rudimentary state of the road network as late as the end of the 19th century can be obtained from an entry in the minutes of the Parochial Council for 1 August 1899.¹⁴ This relates to a pro-

¹³ John White, 'The Island of Easdale', supplements to *Mining Jnl.*, 34, 23 Jan., 6 Feb., and 13 Feb. 1864.

¹⁴ Minute books of the Parochial Board for the combined parishes of Kilbrandon and Kilchattan, Argyll County Offices, Lochgilphead.

posal to build roads at Balvicar and Toberonochy quarries, on the islands of Seil and Luing respectively. Such roads would, of course, be for the benefit of the lessees of the quarries, and the Council considered that to build such roads would be a 'very dangerous precedent as there are other villages which have not advantages of access by a rate maintained road much less of roads maintained at public expense within their bounds, we refer to the important village of Easdale.' We can therefore conclude that roads played a negligible part in the operation of the slate industry.

SEA TRANSPORT: PIERS AND JETTIES, QUAYS AND HARBOURS

The transport of slates away from the quarry areas was, for almost the whole duration of the industry, by ships. In the 18th century, they were very small, each carrying 20–30 tons of slates, but by the early 20th century each ship carried about 100 tons, bringing in coal for the steam engines and taking out slates. Each quarry area had its little harbour, quay, or jetty. Before the tramway system developed, many of the quays were rather exposed, having perforce to be near the individual quarries.

At Ellenabeich the little old harbour remains with its stone quay. It is, of course, tidal. Its main use now is for the small ferry that serves the island of Easdale, but is used by occasional fishing and pleasure craft. For the slate trade, it was replaced in the 19th century by a large timber pier which ran out into the middle of Easdale Sound, and was equipped with cranes. This pier is now derelict but remains in place; see Plate XIX).

At Easdale Island there is a good small tidal harbour, with substantial stone quays.

HOUSING

There is no doubt that in the early days, the Marble and Slate Company of Netherlorn (1745–1866) and its main proprietor, Lord Breadalbane, accepted responsibility for providing housing for the quarry workers. By the end of the 18th century, the Company had provided 51 cottages at Ellenabeich, 114 at Easdale, and 96 elsewhere.¹⁵ Doubtless many of these were replaced or abandoned during the following century and a half, but there are numerous cottages still in use; particularly noticeable are the tidy rows of cottages in the main streets of Ellenabeich. On Easdale Island there is more dereliction, but nevertheless there are still good groups of cottages. Both villages were well organized, with schooling for both children and adults. Both villages had a drill hall, that at Ellenabeich being now used as the village Hall.

APPENDIX

PLACE NAMES OF EASDALE ISLAND

Mr. T. R. H. Jones, who is a part-time resident on Easdale Island, was able, some years ago, to get a very good list of Gaelic place names of the island from an old inhabitant, accompanied by a sketch map which defined their locations. It must be emphasized that Scottish Gaelic was the normal language of this region in the centuries up to and including the 19th. The locations are numbered on the sketch map of Fig. 5. We give in the table below either an English translation or an explanation of

¹⁵ Breadalbane Muniments, Scottish R.O.

most of the names. It will be seen that the names are very relevant to the archaeology of the island.

It should be noted that 'creag' appears to mean 'quarry' on Easdale.

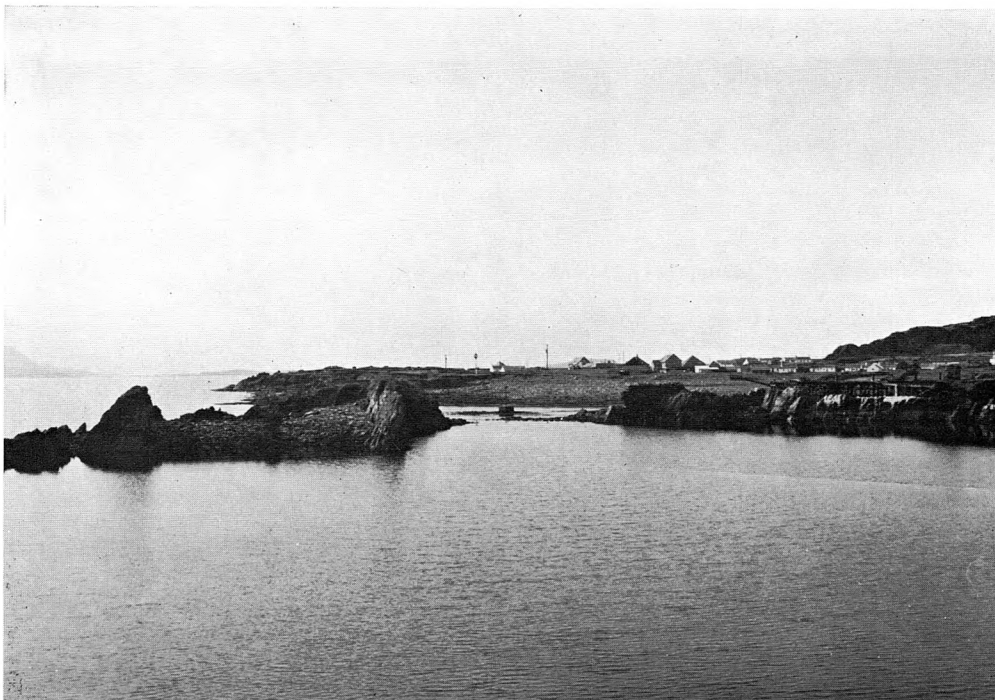
1. A'Charraig Ruadh (the red rock)
2. Bodh' a' Chléitidh (the skerry of the rocky part)
3. Bodh' a' Mharsanta (the skerry of the merchant)
4. An Lòin, alternatively A' Phàirce (the meadow or park)
5. Creag an Lòin (quarry of the meadow)
6. An Toll Mór (the big hole)
7. Tobar Iain Bhàin (John Whyte's well)
8. Tigh an Fhùdair (powder house)
9. Klondyke (a non-Gaelic name given to a particular quarry)
10. Bidean a' Philait (the pilot's peak)
11. Creag Rubha nam Faoileann (quarry at the headland of the seagulls)
12. An Staca Dhubh (a small quarry, literally the black cliff)
13. An Slugan (the Gurgler, a pool for children to swim in)
14. An Lub Chléar (the clear pool)
15. An Toll mar Thuath (the northward hole)
16. Boiler House
17. Tigh Ensin Churrai (Currie's engine house)
18. A' Chèardach (the smithy)
19. Lag an Dannsaidh (hollow of the dancing)
20. An Gleann Mór (the big glen; actually a quarry by the shore)
21. Cùl na h-Uamha (the back of the cave)
22. Creag an Dùin (quarry of the hill)
23. Creag na h-Uamha (quarry of the cave)
24. An sgeir Bhreac (the dappled rock)
25. Sgeir a' Ghéoidh (rock of the goose)
26. Quarry Office
27. Tigh an Fhùdair (powder house or magazine)
28. Doc an Dùin (dock of the hill)
29. Eilean nan Uan (island of the lambs)
30. Ceidh an Stàbuill (quay of the stable)
31. A' Charraig Mhór (the great rock)
32. An Rubha (the headland)
33. An Gàrradh Domhain (the deep garden)
34. Gàirdean an Rubha (arm of the headland)
35. Lòin a' Chanain (meadow of the cannon)
36. Sgeir a' Mhoireair (rock of the lord)

The list is exactly as given to the author except for the correction of some undoubted transcription errors; the translations into English have also been made more literally correct. One or two of the words are obviously English words which have been put into Gaelic, probably locally as they do not appear in Gaelic dictionaries. In the case of Nos. 16 and 26, no Gaelicization was offered.

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PLATE XVIIa



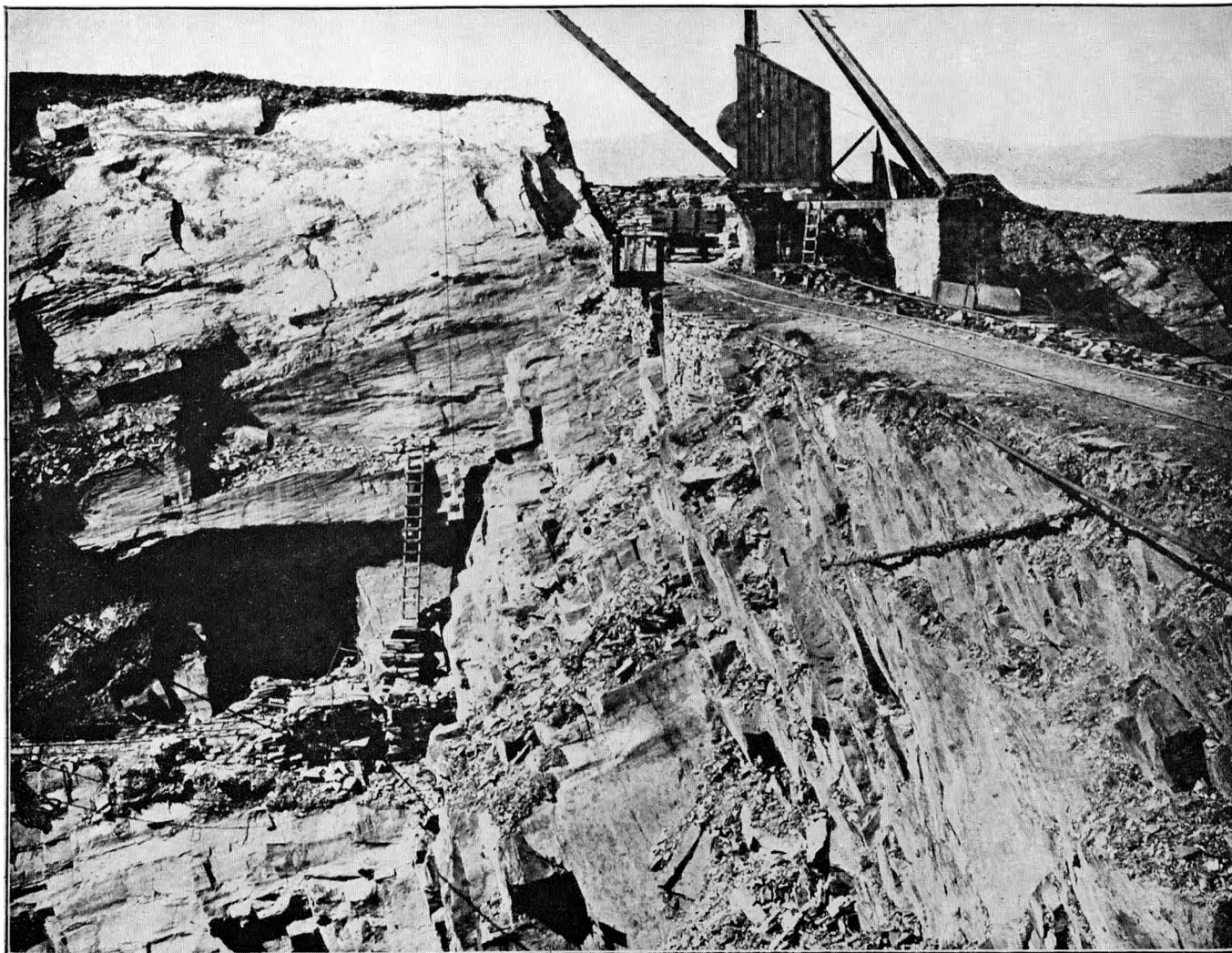
Ellenabeich Quarry, showing the gap where the sea has entered at each high tide since the great storm of 1881.

PLATE XVIIb



Westward view over quarries on Easdale Island, numbered 51 and 52 on O.S. map (FIG. 2)

PLATE XVIII



A slate quarry on Easdale before the closure (from Peach, Kyneston and Muff, 1909).

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TUCKER, SLATE QUARRIES AT EASDALE

PLATE XIX



The timber pier at Ellenabeich.

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