

# Archaeological Notes on some Harbours in Eastern Scotland

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The purpose of this paper is to record and discuss the remains of a series of old harbours. It is an archaeological exercise, and historical matter is only introduced in so far as it serves to explain or illustrate the structures. The survey covers the coast-line from Burnmouth to the Perthshire-Angus boundary, and was carried out between 1966 and 1968. Subjects in all states of preservation have been included, together with ferry-terminals and certain unimproved landings which were never developed as havens, but no attempt has been made to deal with the technically advanced works of the industrial period. The harbours are described in alphabetical order, and a list arranged in topographical order, to correspond with the map (fig. 1), is given at Appendix A. Plans, where given, are sketches adapted from Ordnance Survey maps. The plates represent a selection from about a hundred and twenty photographs, now lodged with the National Monuments Record of Scotland. The descriptions are preceded by an Introduction summarising the results of the survey, with observations on some points of interest. Abbreviated titles of some sources not commonly quoted are expanded in Appendix C.

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## INTRODUCTION

### *Origins and functions*

The sites included in this study number no less than a hundred and twenty-five, and this figure, like the pattern of distribution (fig. 1), reflects the operation of many diverse causes over a period of several centuries. Some of these causes have worked at all periods alike, and among these the most important probably has been the wealth of the local fisheries – particularly, until recent years, the very large catches of herring. The fisheries constantly figure in local history, from legendary times, when fish were believed to have helped St Kentigern's mother in the course of her miraculous voyages, until as lately as 1965, when Eyemouth harbour was reorganised in the fishing interest. Again, harbours on these coasts were placed conveniently for contact with the eastern English and northern Continental ports, a fact of great importance for the trade of the Royal Burghs,<sup>1</sup> or of whatever mercantile communities preceded them in earlier days. Yet another permanent reason for the multiplication of harbours was the generally poor condition of the roads, which naturally told in favour of the transport of goods by sea. As recently as 1837, for

<sup>1</sup> A list of the Royal Burghs in the area is given in Appendix B.

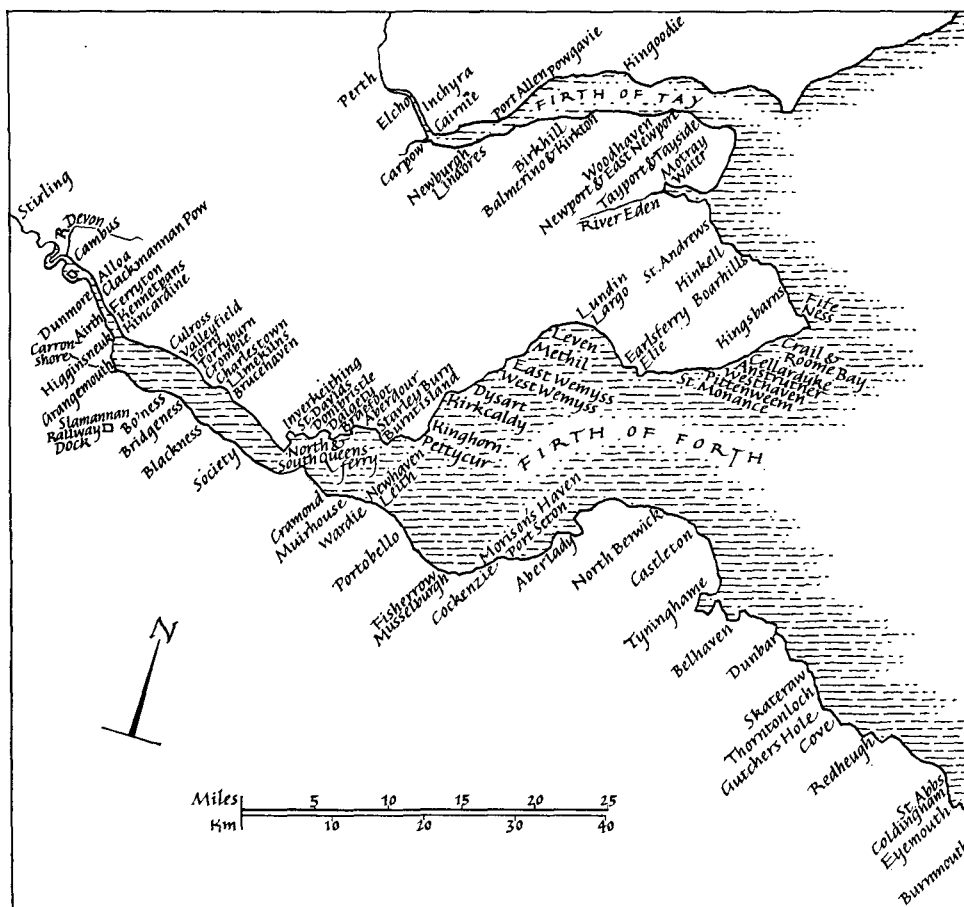


FIG. 1. Map of harbours.

example, the ‘pows’ in the Carse of Gowrie were said to form ‘the small harbours by which the commerce of the district is carried on’.<sup>1</sup> The small size and comparative cheapness of ships, and the relative simplicity of their repair, must have simplified the business of sea-faring, while the fact that navigation was taught in Torryburn village school in 1793<sup>2</sup> illustrates the importance of seamanship to a typical community. In addition to such general causes, the need of export facilities for coal, salt, limestone, preserved fish or surplus agricultural produce called for the building of harbours at the places individually concerned; and ferries, with regular terminals, naturally were required on the Firths of Forth and Tay. It is interesting to recall that the bridging of the Tay at Perth in 1771 noticeably diminished the volume of traffic on the ferry between Ferryport-on-Craig and Broughty.<sup>3</sup>

*Dating*

The earliest harbours in the area were presumably those which the Romans must have formed, at one period or another, to support field-armies or garrisons; but apart from some

<sup>1</sup> NSA, x, 371.

<sup>2</sup> Stat. Acct., viii, 452.

<sup>3</sup> *ibid.*, 457. The date is given as 1766, but see Anonymous, *Memorabilia of the City of Perth* (1806), 17.

possible traces of a breakwater at Wardie,<sup>1</sup> and a doubtful record of a 'mole' at Cramond, evidence of Roman harbour-works is totally lacking. In view of the size and obvious importance of the establishments at Inveresk it is clear that a harbour must have been associated with them; much the same could no doubt be said of Carpow, and Perth could have served usefully as a beach-head in Agricola's northern operations. However, any such ports naturally went out of use with the end of the Roman occupation, and consequently provide no material for the present study. In the Dark Age, however, if the distinction between ports and harbours is temporarily dropped, something of the existing system begins to emerge. Two important strongholds, Din Eidyn and Giudi, were conveniently close, respectively, to the mouth of the Water of Leith and to riverside berths corresponding with Stirling harbour; Watson's Din Bar, if it occupied the suggestive hill-top site of Knockenhair,<sup>2</sup> would have stood only half a mile from what was later the port of Belhaven; while the distance of Clatchard's Craig fort from the Pow of Lindores would have been approximately the same. Further Dark Age evidence may probably be seen in the Life of St Kentigern, which makes the saint's mother sail from a putative Belhaven and land at Culross, the inference being that when this legend was first put on paper, in the eleventh or possibly as early as the ninth century, these places were already known as ports. Early Christian St Andrews, again, overlooked a natural harbour in the mouth of the Kinness Burn. When regular records begin, in the twelfth century, we hear of ten ports or landings, and to these four are added in the thirteenth and a further seven in the fourteenth century.<sup>3</sup> In the fifteenth century no new names appear before 1491, but the result is that, before the end of the Middle Ages, at least twenty ports or regular landings have found their way into the records. Surprisingly, neither Alloa nor Burntisland is mentioned, but their absence from the list, like that of some less naturally attractive sites, may be due simply to the records' own defects.

In the succeeding phases the list lengthens notably, with twenty-two fresh names appearing between 1491 and 1596 and a further twenty in the course of the seventeenth century. The real increase, however, may be less than it seems, in view of the improvement in the quality and volume of the records; but that the ports were being improved at this time is corroborated by other evidence. For example, it is in the sixteenth century that we begin to hear of 'bulwarks', evidently breakwaters protecting or partially enclosing a beach or tidal anchorage; while the frequent references to 'decayit' harbours imply the existence of built structures constantly liable to damage. James IV's harbour at Newhaven, shown by the Petworth House plan to have consisted of two piers projecting from an open shore-line, is an early sixteenth-century example, and charter or other reliable evidence exists for new construction at fifteen sites between 1526 (Morison's Haven) and about 1650 (Methil), with less definite information about two more, Elie (1582) and Cockenzie (1630). This appears, in fact, to be the stage in the ports' evolution in which they assume the quality of regular harbours, and this point is important if the word 'port' (*portus*), as used in the earlier documents, is not to prove misleading. For example, Pittenweem was described as a 'portus maris' in 1228, but only obtained the right to build a harbour in 1541; consequently, at earlier dates ships and fishing-boats must have worked off a beach or in and out of inlets among rocks. Fishing was probably one of the principal reasons for these developments, and is likely to have underpinned most other maritime activities. Another factor was no doubt the increasing trade, including the overseas trade, of the Royal Burghs,<sup>4</sup> and their influence was probably important as eighteen of those in the area were actual seaports, while the inland Burghs of Edinburgh, Haddington and Linlithgow possessed ports of their own (Leith, Aberlady, Blackness) and Cupar

<sup>1</sup> References to sources are normally given in the descriptive articles.

<sup>2</sup> On these two sites, see Watson, W. J., *History of the Celtic Place-names of Scotland*, 135, 141.

<sup>3</sup> See bracketed figures, indicating centuries, against names of ports in Appendix A.

<sup>4</sup> For a list see Appendix B.

had rights of some sort on the Motray Water. Coal, again, occurred in many parts of the seaboard and was actively exploited, particularly for the making of salt, although whether any of the ports that exported coal and salt originated at this time or earlier does not appear. The same may be said of limestone, although the place-name Limekilns seems to be of old standing.

The sites first mentioned in the eighteenth century seem to be connected with new industries, or with the improvement of estates that had by that time come into vogue. Thus the old harbour of Charlestown was built in the seventeen-sixties to serve a new lime-working industry, and limestone was later shipped from Starley Burn for use in Carron Company's industrial processes. Other new harbours were established at various sites to serve individual industries, among them the Carron iron-works at Carron itself and Cramond, shipbuilding at Kincardine, brewing and distilling at Kenetpans and Cambus, and pottery at Portobello, while the Forth and Clyde Canal was given a terminal harbour at Grangemouth. The abortive undertaking at Cove, the work of an improving laird, was probably inspired by the fishery, and some of the smaller harbours, such as those on the Firth of Tay, may well have represented estate improvements.

In the nineteenth and twentieth centuries rebuilding and enlargement proceeded on an increasingly large scale, with results which generally outrun the scope of the present study, but new work has been noted at Cove, where a harbour was completed successfully after two earlier failures, as well as at Burnmouth, St Abbs, Fisherrow and elsewhere. The lime industry reappears, at Skateraw, where a harbour was built early in the nineteenth century to serve the limestone deposits south of Dunbar. In the second decade of the century new arrangements were made for the ferries at Newhaven and Queensferry, with lighthouses and equipment for signalling, and a little later the Firth of Tay ferries were likewise reorganised. An industrial curiosity of the eighteenth century is the Slamannan Railway's terminal on the Union Canal.

### *Sites*

Mention has been made above of so-called 'bulwarks' protecting customary landings, and their construction points to the earlier use of open beaches without artificial improvement. These, however, although they may have sufficed for fishing-boats, and for occasional calls by larger ships in fine weather, cannot have made good bases for established trading communities. It is unnecessary to stress the hazards of on-shore winds, or the labour of pulling boats up beyond the reach of the waves; the charter of Morison's Haven specifically mentions the casualties suffered by the fishermen through lack of a harbour for shelter. Nevertheless, when nothing better offered, open beaches must have been in very common use. Areas of beach may be seen where boulders or rock-ridges have been cleared to permit boats to land (e.g. Braefoot Bay, Earlsferry, East Wemyss, Lundin, Redheugh), and several unimproved beaches are mentioned as landings in the records (e.g. Crail creeks, Gutcher's Hole, Roome Bay). An obvious method of betterment was to make use of the mouth of a river, and this was done regularly at all periods; for example, six of the sites first mentioned in the twelfth century occupy positions in the mouths of rivers or streams or on tidal reaches of rivers, while as late as the nineteenth century small estuary-harbours still functioned, e.g. on the Gowrie coast. Natural shelter, though only on one side or the other, could also be obtained from a promontory or tongue of rock, particularly one which formed the horn of a bay (e.g. Aberdour, Blackness, Dysart, Earlsferry, Kinghorn). Similar partial shelter could be given by an inshore island (e.g. Dunbar, Elie), or by a reef which rose even slightly above high-water mark (e.g. Culross, Limekilns, North Berwick); Burntisland was probably once the best example in point, but the rocks and the artificial works that formerly enclosed its basin have all been obliterated in the construction of the modern port. Failing an island or a reef which was never submerged, a pocket among tidal rocks seems to have been well regarded; no doubt the



rocks, never very deeply covered, checked the force of the waves even when the tide was high, while keeping them out altogether at other times. Such rock-pocket sites are common, some examples being Cellardykes, Cockenzie, Cove, Port Seton, St Abbs and St Monance; today, of course, artificial harbour-works exist at these and other sites of the kind, but the original arrangements appear clearly enough.

### *Harbour-works*

Harbour-works seem to fall into the following classes.

1. *Breakwaters*. The most notable of the earlier harbour-works are long, massive breakwaters, partially enclosing the harbour areas or at least screening them from the most exposed quarter. Their masonry includes a considerable proportion of boulders, with large blocks and slabs; their outer faces finish in stout parapets, and on their inner sides they carry quays or walkways, to which the shipping tied up and from which the floors of the basins could be reached by stairs. The quays and parapets may not always have been original features, as at Fisherrow there is recorded the addition of a quay and a parapet to a pre-existing 'bulwark'. The longest breakwater is the East Pier of Dunbar, 920 ft. long, including a stretch of sea-wall. Other striking examples are at Cellardyke (Pl. 25a), Crail, Dysart, Pettycur (Pl. 25b), Pittenweem and St Andrews, while a comparable one at North Berwick has been shortened by storm-damage and another at West Wemyss has been rather heavily modernised. Their alignment generally tends to be slightly sinuous, no doubt on account of irregularities in the rock below. A structure which formerly enclosed part of the bay at Blackness Castle seems to have been a breakwater, but if so is of exceptionally light construction. Charters authorising the construction of 'bulwarks' generally date from the later sixteenth and earlier seventeenth centuries.

Detached breakwaters, unconnected with the rest of a harbour, are found at a few sites. At Limekilns, for example, two parts of a tidal reef, lying on either side of a passage cut for shipping, have been faced and extended with masonry. A smaller detached work may be seen at Brucehaven, and what may be another at Torry; at St Monance three have been built since the Ordnance survey of 1854. At South Queensferry an originally detached block seems to have become incorporated in the harbour's seaward side. The so-called 'breakwaters' at Tayport, however, are connected with a salmon fishery.

2. *Piers*. Piers, smaller and less massively built than breakwaters, were generally sited, like them, so as to give protection to an anchorage as well as to accommodate shipping, and usually took advantage of some favourable natural feature. Aberdour (Pl. 26a), Brucehaven (Pl. 26b) and Culross are some typical examples of this arrangement. Piers are often run out towards the heads of breakwaters, covering the otherwise open side of an anchorage and leaving proper entrances, often fitted with booms (see below). Piers on these lines may be seen at Cellardyke, Crail, North Berwick and Anstruther Easter. Pier parapets, where they occur, are less high and massive than those on the great 'bulwarks'.

Not all sites, of course, were suitable for a single pier, and on a straight stretch of coast, for example, a harbour might have to be formed by a pair of piers, built out from the shore and with the entrance between their heads. The Petworth House plan shows that the first harbour of Newhaven (c. 1506) consisted of two converging piers; and the same kind of arrangement obtains at Cockenzie, Fisherrow, Muirhouse, Society and Starley Burn, for example, although individual plans are influenced by the lie of the rock-foundations.

In some parts of the Firth of Forth, where wide flats of mud or sand are exposed at low tide, especially long piers have been required. The one at Crombie Point (c. 1750), is some 920 ft. long and very narrow, almost resembling a raised causeway for much of its length. At Torry traces

may be seen of what was probably a similar work, running out for a quarter of a mile to a small islet built up to serve as a quay; at Torryburn the wreckage of the so-called 'Auld Pier' lies far out in the mud, approached by the traces of what may have been a causeway, and at Dalgety and Burntisland (Bath House) again there have been long causeways or jetties, the former ending in a pier-head. The length of these works may point to a silting up of the foreshores, with consequent widening of the flats, and the fact that low tides do not now reach even the heads of the works just mentioned suggests that silting may still be in active progress.

In studying these and similar remains on the ground, it is well to remember that the heaviest damage is always suffered in a zone close to high-water mark, while more significant remains survive further out and are only to be seen at low tide. This is probably due to undertow from the breaking waves, an effect which the profile of many of the beaches would have favoured, although perhaps in some cases dressed stone may have been robbed from the easily accessible landward end of the structure.

3. *Jetties.* In addition to regular piers, a number of structures may conveniently be classed as jetties, these being sloping or flattish ramps which run well down the beach and give access to boats at all states of the tide. The best examples are at ferry-terminals (Alloa, Kincardine, Newhaven, Queensferry Passage), where the jetties are all stone-built, but the one at Higginsneuk was of timber, possibly for lack of solid foundations for stonework in the soft mud of the foreshore. The mid-eighteenth-century Coal Wharf at Dunbar, which flanks the inner face of the breakwater, takes the sloping form of a jetty, no doubt to allow carts to be loaded direct from the coal-boats. Landing at very low tide was sometimes provided for by special jetties, at or even below normal low-water mark (e.g. Blackness Castle, Dysart (Old Harbour), Elcho Castle, Pettycur). At Culross lack of low-tide landing facilities sometimes made wading necessary.

4. *Rock-cuttings.* Some piers and jetties have been formed, in part, by the cutting of the native rock. At Skateraw, for example, about 115 ft. of the main breakwater-pier consists of a natural rock-ridge trimmed to a suitable breadth; at Pittenweem (Boat Harbour) a jetty similarly has been contrived on the spine of a ridge; at East Newport the landward end of the pier is continued as a rock-cut roadway, and at Cove part of the parapet of the North Pier has been carved out of the rock. Again, at Donibristle (Old Harbour) a seaward-running tongue of rock has been used as the foundation for a jetty. Similar rock-ridges elsewhere show evidence of structures of some sort having once been secured against them, or of having themselves served as landings (e.g. Blackness Cas., Earlsferry, Lundin, Redheugh, South Queensferry, Torryburn), while at Dysart (Old Harbour) there are post-holes, and at Castleton sockets for the fitting of a wooden platform on top of a flattish rock. At Castleton and South Queensferry the work may well be medieval. Rock-cutting was evidently common in later times, when quays were being laid out or basins enlarged (e.g. Cellardyke, Kinghorn, North Berwick, St Abbs, St Andrews), while at Dunbar, in the seventeen-fifties, there was a good deal of blasting in addition to ordinary pick-work. What seem to have been shallow berths for boats have been cut out at Skateraw and North Queensferry; at Cove an extensive system of notches was cut in the face of a cliff to form tusking for the breakwaters attempted in the seventeen-fifties and eighteen-twenties.

5. *Quays.* Quays were sited not only on piers and breakwaters, but also very commonly on the landward margins of harbours. This was not the universal practice, as some harbours even today retain a strip of natural foreshore in the inner part of the basin, which is used for the beaching of boats or adapted for some maritime industry (e.g. Cellardyke, Cove, Fisherrow, South Queensferry). Where houses stand along the harbour-front, however, with no more than the breadth of a roadway between them and the edge of the quay, a revetted quay-face is called for to prevent collapse; this arrangement is seen commonly in the small Royal Burghs, such as Crail

(Pl. 27a, b) or Kinghorn. Many of the houses in question date from the seventeenth if not from the sixteenth century, and the same arrangement may well have obtained much earlier, at such places as Leith and Perth. Land-based quays not forming the frontage of a town are likewise common enough.

6. *'Shores'*. At this point something should be said about the word 'Shore', as applied to quay-sides and streets close to harbours. At least a dozen instances suggest themselves, in various forms – among them simply 'The Shore', as on the Water of Leith and formerly at Perth; the same and 'Shorehead' at St Andrews, also along the quays; a more extensive 'Shore' at Alloa, embracing not only the quay-side but also a street behind; a similar 'Shore' area at Newburgh, marked on the O.S. maps inland from the existing quays; and a 'Shore' at Dysart which seems to be related to a harbour now buried under invading shingle. It is natural to suppose that these names may antedate the construction of regular quays.

7. *Castle landings*. Improved landing-places are associated with the castles of Blackness, Elcho and Tantallon, although the last no doubt served the fishing community of Castleton as well as the castle itself. The beach below St Andrews Castle must certainly have been used as a landing, although the surviving traces are indefinite. The report of an entry to Fast Castle from a tidal cave<sup>1</sup> proved, on local enquiry, to be without foundation.

### *Construction*

Useful information on the age and development of harbour-works might naturally be looked for in their architectural features, but in fact this source is disappointing. These works do not lend themselves to classification in the manner of castles and churches, partly because of their lack of decorative detail, partly because little is known about the dating of their masonry styles, and not least on account of the confusion in builds that has resulted from frequent reconstruction. The persistence of traditional methods among local craftsmen, combined with the use at all periods of the locally available stone, may likewise prove highly misleading – as, for example, at Kingsbarns. The paragraphs that follow accordingly do no more than note and discuss some common structural features, without attempting to build them up into a comprehensive system.

1. *Timber*. No timber pier has survived, and the remains at Clackmannan Pow, the Devon and Kennetpans are all of the nineteenth century. Timber construction is not often mentioned in the records, although the piers at Leith and Newhaven shown in the Petworth House plan were no doubt of timber, and Adair's specific allusion (1703) to stone piers may imply that in his day a number of piers were wooden. Later and vaguer records refer to Belhaven, Kingsbarns and Roome Bay. A good deal of wood evidently was used at St Andrews in the later sixteenth century and at Dunbar in 1650, while the decision that Fisherrow pier should be repaired 'with balks of timber . . . [and] filled up with stones to the balks according to use and wont' suggests that timber crib-work with stone filling was common in 1682. The footings and remains of piling at Limekilns suggest something similar, but their date of origin is unknown. The earth and sand used at Leith in 1398 may perhaps have been packing for a timbered quay-face, and a quay with at least some timber in its face seems to have existed at Crail until the early nineteenth century. That the fitting of timbers into rock presented no particular problem is shown by the post-holes at Castleton, Dysart (Old Harbour) and the Laigh Craig beacon near Torryburn.

2. *Stonework*. Piers and breakwaters consist of a pair of facing-walls of built masonry with a core of stones, boulders and large quarried fragments. As far as can be judged from ruinous examples, the core material is uncoursed though roughly fitted together, and some bonding is

<sup>1</sup> Macgibbon, D., and Ross, T., *The Castellated and Domestic Architecture of Scotland*, iii, 222.

obtained by the tailing in of the facing-blocks and the occasional insertion in the core of long, transverse pieces. The outer face of a breakwater is more or less heavily battered.

The following are the most distinctive types of masonry seen in the facing-walls of piers and quays, the selection being far from exhaustive.

(i) *Boulders*. Undressed beach-boulders occur in a number of piers, particularly in their lowermost courses. Dunbar, North Berwick and St Andrews are cases in point, and it is noticeable that the Petworth House plan shows collections of boulders supporting or reinforcing the piers at Leith and Newhaven. Though these three are all in fact among the earliest recorded piers, it is not suggested that boulder construction was more favoured in the sixteenth century than at other times, but rather that the works containing boulders were built on virgin sites, and that the first courses to be laid were thus formed of boulders which lay ready to hand. This suggestion perhaps is borne out by the presence of boulders in the ruins of Lundin pier, which probably dates from the first half of the eighteenth century.

(ii) *Very large, rough blocks*. Dry-stone construction in large, rough blocks is seen in the breakwaters at Cellardyke, Dunbar and North Berwick, together with other large but crudely dressed material. Similar but rather smaller blocks occur at St Andrews, and some large material in the fragment of parapet at West Wemyss. For the last no date has been recorded, but the analogy of other great breakwaters suggests the sixteenth century (see above). Dry-stone work of this kind was consolidated by the driving in of wooden wedges; this technique was recorded at Dunbar and Alloa in 1718 and 1774 respectively, and wedges were found still in use, at Crail and North Berwick, in the course of the present survey.

(iii) *Squared blocks in courses*. Another distinctive build exhibits dressed blocks of moderate size, squarish or oblong on face and neatly coursed without mortar. The oblong blocks often tend to have their longer axes vertical. Good examples may be seen at Charlestown (Pl. 28a), Culross, Dysart (Pl. 28b), Limekilns and Torry, or in the cross-pier at St Andrews (Pl. 28c), the last rebuilt, but clearly with the old material. The pier at Morison's Haven may have been similar, but too little now remains visible for valid comparison. Other work of the kind, but less tidily coursed, is found at Anstruther Easter, Brucehaven and Crombie. What is known of all these piers' history tends to date this style to the eighteenth century, excluding probably its final thirty years.

(iv) *Poorly coursed rubble*. Rubble masonry, poorly dressed and coursed and often set with mortar, is hard to isolate as a class, but it is met with frequently in one form or another and some of it, at least, goes well back into the eighteenth century; the inner quays at Dunbar, for example, were begun in 1717. It is insufficiently determinate, however, to provide any basis for dating.

(v) *Ashlar, etc.* The best piece of ashlar construction is the North Pier at Cove, of 1831, but familiar Renaissance features such as channelled or rusticated blocks, or a string-course to accentuate a line, frequently occur in additions or patches made at or soon after the beginning of the nineteenth century. Construction in long, thin slabs seems also to belong to this period. Examples of one or another of these forms may be seen at Anstruther Easter, Burnmouth, Cellardyke, Dysart, Port Allen, St Andrews and Queensferry, the last including the North and South Ferry jetties.

(vi) *Vertically set slabs*. In this type of construction large, roughly dressed slabs are set dry in courses with their longer axes vertical, or sometimes oblique. (This style should not be confused with the squared oblong blocks, sometimes set on end, that have been mentioned above.) It can be dated at Crail to 1826, and the large amount seen in the East Pier at Dunbar inevitably connects it there with the repairs that followed the disaster of 1806. It may therefore be regarded as a technique of the earlier nineteenth century, and its frequent appearance in isolated patches, as at

Cockenzie in a pier which is itself no older than 1833, suggests that it was favoured for repairs. Its utility in marine construction may be due to the fact that waves, acting on the narrow ends of upright slabs instead of on the long sides of horizontally bedded ones, exert less lifting effect, with the result that the face of the work is less easily eroded.

(vii) *Quay margins*. The margins of quays are formed of large slabs, cut and fitted together with varying degrees of care. The slabs are often secured with iron cramps or straps, and are sometimes keyed together with small plugs of lozenge or oblong shape inserted in sockets at their joints. At the Town and East Battery piers at North Queensferry the plugs, in both cases oblong, are set in pairs. At some sites the sockets are filled with cement instead of with plugs, and in the low-tide landing-jetties at Dysart (Old Harbour) and Pettycur they are empty. At Fisherrow and South Queensferry keys of this kind appear in the coping of a parapet. As the piers at Queensferry Passage can be dated to soon after 1810, and as a series of keyed blocks at Alloa is broken by an insertion of 1848, this feature evidently dates the structure that exhibits it to the early nineteenth century. Occasionally a quay may bear a wide, shallow hollow a few inches back from the lip.

3. *Fittings and accessories*. (i) *Pawls* (Pl. 29a, b). Pawls may be of wood, iron or stone, and appear in a variety of forms, but as their variety evidently is influenced by standards of craftsmanship and availability of materials, and as stone or iron pawls could easily be salvaged and re-used if a quay fell down or was altered, they cannot safely be used as evidence of date. Subject, however, to this proviso the following points may be noted.

Wooden pawls no doubt have the longest history, and several are found to consist of butt-logs set with their larger ends upwards; sometimes, however, they are shaped, or they may even be made up of two or three small timbers conjoined. Interesting specifications for wooden pawls at Alloa, dating from 1767, are given on p. 213.

The stone pawls that bear the greatest appearance of age are undressed, or roughly dressed, slabs or blocks; but these, when worn with use, are difficult to tell from shaped stone posts, having 'waists' and squared tops to prevent ropes slipping off. Contrasting with these rather rough objects is a class of carefully made stone posts, apparently turned on a lathe; these are frequently associated with nineteenth-century construction (e.g. Cairnie, Kingoodie, Fisherrow, Pittenweem, North Berwick), while some slender posts at North Queensferry, similar in make but intended to control pedestrians, can be dated to the period soon after 1810.

Cast-iron pawls are probably not older than the nineteenth century, and their substitution for wooden ones at Alloa is recorded in 1839. They vary in size and pattern, but their tops generally are mushroomed or turned over to form a lug. A common substitute is a length of iron piping filled with cement, and at Dunbar, Dysart and Perth use has been made of old guns.

The positions of the pawls no doubt depended on their particular functions, for example in the case of large pawls, the warping of vessels into and out of the harbour; and on piers with parapets and narrow walkways pawls are usually set close to the face of the parapet, or even inside recesses in its facing-wall, to prevent the obstruction of traffic along the pier. Pawls so placed are also in less danger of being pulled out of their settings than if they were at the lip of the quay; evidence that pawls had to be deeply set comes from North Berwick and Alloa, and a similar precaution is noted at West Wemyss in the case of some heavy rings. Rings, for mooring or warping, some very large, are commonly found, sometimes in a quayside street well away from the edge of the quay. Provision for the repair of rings and 'makfastis' at Leith is recorded as early as 1582.<sup>1</sup>

(ii) *Mooring-poles*. Tall, free-standing mooring-poles are now found only at Largo, but formerly they seem to have been in fairly general use. They are shown, for example, in Slezer's

<sup>1</sup> Irons, J. Campbell, *Leith and its Antiquities*, I, 482.

illustration of the anchorage at Culross, and they are on record at Roome Bay in 1772, at Kingsbarns in 1781 and at Crail in 1782.

(iii) *Booms*. The purpose of booms is to reduce violent wave-action within an enclosed harbour, and they do not appear before the early nineteenth century. Booms were first mooted at Dunbar in 1804, but none was installed there until after 1827, and the final system was developed only in 1888. They are now disused at Dunbar, as also at Cellardyke, Dysart, Grangemouth, Pittenweem, West Wemyss and St Abbs, although the grooves into which they fitted may be seen in the walls of the quays. They still function at Crail and North Berwick, at both of which places they were installed in 1854.

(iv) *Machinery*. Apart from pawls and boom-mechanism, few items of quayside apparatus have survived from before the days of wholesale industrialisation. Of the survivals, the most interesting are probably a crane of primitive appearance at Inverkeithing, and part of a semaphore of about 1810 on the Hawes Pier, South Queensferry. A crane of before 1840 figures in Leighton's illustration of Pittenweem harbour, and the base of what may have been a crane was noted at Fife Ness, together with rock-cut traces of some other mechanism, of unknown purpose. A capstan at Pettycur shows the date 1813, with the name of a known Leith iron-works, but a tall iron socket for a pole at Pittenweem Boat-harbour bears every appearance of origin in a local foundry or forge.

(v) *Sluices, etc.* Harbours were continually liable to become choked with silt and rubbish, to say nothing of ballast dumped by skippers when preparing to take on cargo. This practice was forbidden by law at least as early as 1623,<sup>1</sup> but evidently it persisted. Charges for the clearing of rubbish constantly appear in the records, and at Dunbar in 1807 a regular contractor was engaged.<sup>2</sup> Mud or sand, however, could be flushed out with water, and advantage was taken of streams, where these debouched into harbours, or in some cases of tidal currents (Balmerino, Kingoodie, North Berwick), although an experiment on these lines at Fisherrow did more harm than good. An artificial flush could be secured by forming ponds (e.g. Limekilns or Pettycur), or by holding up water at high tide, again in ponds, by means of dams or sluices. Examples of sluices on streams, although with modern sluice-gates, may be seen at Eyemouth, Inverkeithing, Port Allen and St Andrews. A pond filled by the tide, and not fed by a stream, survived at North Alloa ferry until 1967, and traces of another may be seen at Airth, while both the 'pows' at Alloa harbour were ponded. The provision for tide-mills in the charter of Morison's Haven shows that as early as 1541 craftsmen were available who could tackle this kind of construction, and on this analogy the sluice in St Andrews harbour may perhaps be an early feature.

(vi) *Docks*. A dry dock was installed at Dunbar in 1785, and filled up again in the nineteenth century; two are shown on Wood's plan of Leith (1824), and others are on record at Alloa, all at late dates. The wet dock at Dysart deserves passing mention, as it occupies what previously was a quarry. The large commercial docks of the nineteenth century are outside the scope of this study.

#### *Various*

1. *Roadways to foreshore*. It need not be assumed that a ramp leading down to the foreshore (e.g. Anstruther Easter, Crail, Fisherrow, St Andrews) or a roadway cut out or paved among tidal rocks (e.g. Cove, Kinkell, Roome Bay, St Andrews, St Monance) must necessarily be associated with a neighbouring harbour or landing-place, as farmers and others needed access to the foreshore and sea for various purposes. The collection of sea-weed for manure was recorded at

<sup>1</sup> *RPC*, I, 268.

<sup>2</sup> Dunbar Burgh Records, H.M. General Register House, Box 21, of 30.3.1807.

Dunbar at least as early as 1636.<sup>1</sup> The rock-cut access to Redheugh Bay, however, may safely be regarded as the work of the Preventive Service.

2. *Railways.* Some harbours were connected with neighbouring collieries by railway before the introduction of steam traction, and the long narrow pier at Crombie Point, the reputed date of which is about 1750, carried one along its length. Others are on record at Alloa (1776), Inverkeithing (before 1794), Methil (before 1795) and St Davids (c. 1760). No remains of any of these railways can be identified today apart from a stretch, in square NT 4074, of one which ran from the Tranent coalfield to Cockenzie, and which has been dated to 1722.<sup>2</sup>

3. *Lights.* No remains of arrangements for lighting the harbours have been found, with the possible exceptions of the tall iron socket at Pittenweem boat-harbour and the pillar at St Davids. Whatever stood on the Laigh Craig, off Torryburn, is more likely to have been a warning beacon than a light. Three lighthouses, however, survive in association with ferries. Two of these, at North Queensferry and the Hawes Pier, serve respectively the N. and S. ends of Queensferry Passage as reorganised after 1810 (Pl. 29c, d); and the third, at Newhaven, the S. end of the Burntisland ferry. The one at the Hawes Pier shows remarkable Classical ornament, but the others are plain and the one at Newhaven may not be in its original state.

The light-chamber built above the upper storey of the Northern Lighthouse Board's depot in Harbour Road, Granton, is not a lighthouse but a disused testing-station for lamps and other equipment.<sup>3</sup>

<sup>1</sup> Brown, P. Hume, *Early Travellers in Scotland*, 135.

<sup>2</sup> Dott, G., *Early Scottish Colliery Waggonways*, 30 f.

<sup>3</sup> Information from a member of the Board's local staff.

## DESCRIPTIVE NOTES

### *Aberdour, Fife* (fig. 2a, Pl. 48a). NT 194851

Early records of a harbour at Aberdour are lacking. It is true that a port existed there in 1565,<sup>1</sup> but this was most probably the naturally sheltered anchorage at the mouth of the Dour Burn. A pier seems to be mentioned for the first time in 1703, when Adair notes 'a key for loading coal and salt',<sup>2</sup> and in the following year the port is granted by charter to the Earl of Morton,<sup>3</sup> with liberty to repair it or to build a free port and ancillary works anywhere on his property. A plan of 1750<sup>4</sup> marks a pier in the position of the existing one, although too crudely to be informative, but another, of 1785,<sup>5</sup> marks what is no doubt the same structure more accurately, showing it as straight and giving it a length of some 380 ft. The outline of an outwards-curving extension about 250 ft. long has been added at some time in pencil. A later plan of 1811<sup>6</sup> seems to be inaccurate in showing the pier as some 100 ft. too short, but is interesting as marking an 'East Pier', about 70 ft. long, on the W. side of the harbour between the main pier and the burn-mouth.

The harbour consists today of a tidal pocket, which the scour of the burn may help to keep clear of silt. It is enclosed on the W. and the NE. by the land, and on the S. by a pier aligned slightly south of east; the E. side is open, to a width of some 85 yds., the harbour itself measuring about 150 yds. by 135 yds. From the land, the pier runs relatively straight for 390 ft., and then swings southwards to form a pier-head about 80 ft. long and with a flight of steps at the end (Pl. 26a). The straight stretch thus corresponds in length so closely with the complete pier as shown on Mitchell's plan that we may confidently regard it as older than 1785, and probably than 1750. On the same showing, the pier-head is probably a modified realisation of the much longer additional work sketched on the plan in pencil. The pier is about 30 ft. wide in the part nearest the land and up to 40 ft. at its junction with the pier-head, a narrow section in the middle being about 25 ft. wide. The alignment of the sides is irregular, and a bulge, with steps, on the N. side 230 ft. out suggests that in an earlier phase the pier may have ended at that point. The masonry varies considerably from place to place, the best, consisting of large, well-coursed blocks, appearing on the N. side between the bulge just mentioned and a second flight of steps, about half-way back to the land. Inland of these steps, by contrast, the stonework is uncoursed and may represent an unskilfully executed

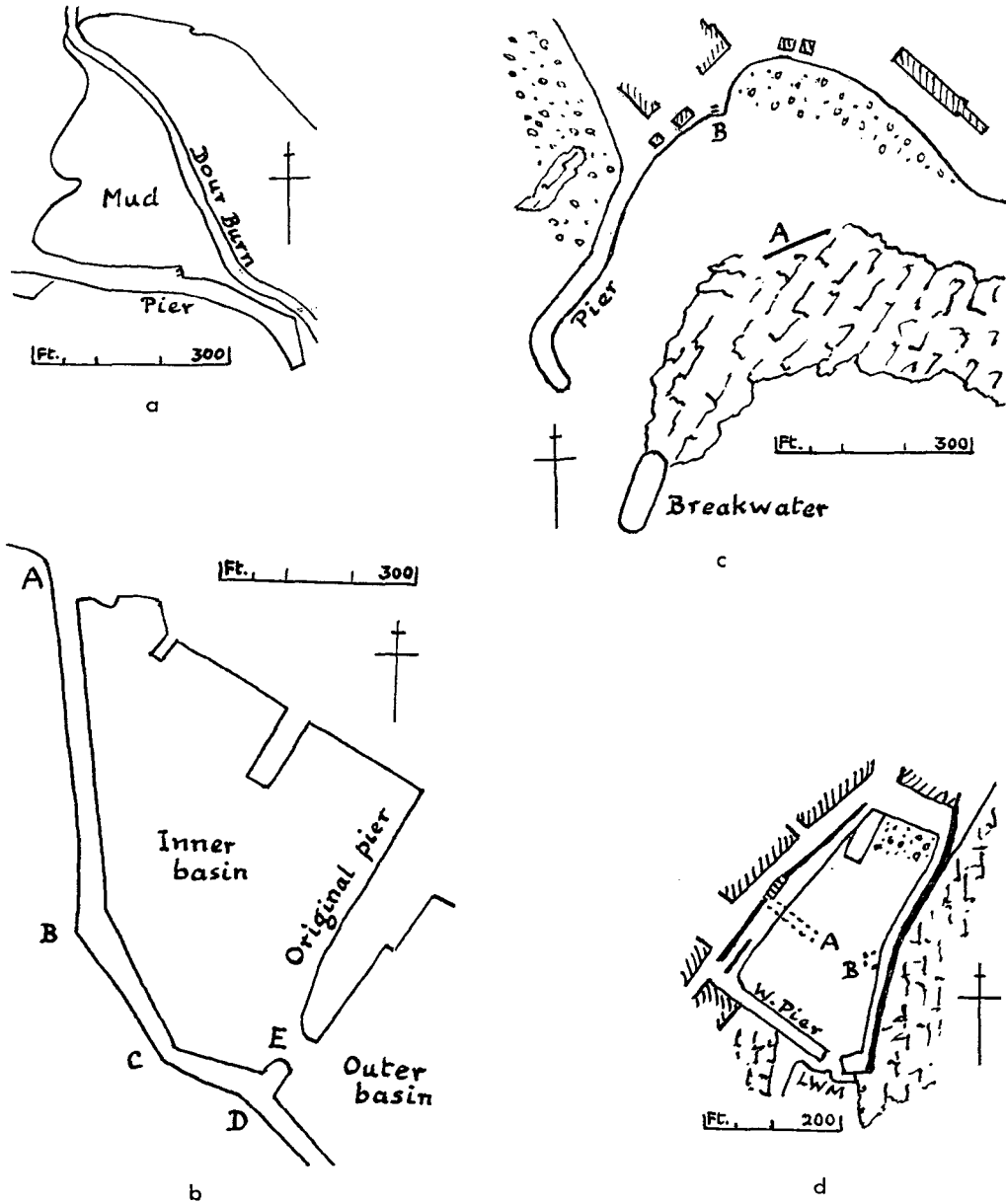


FIG. 2. *a* Aberdour, *b* Anstruther Easter (AB, pier of 1753; CD, head of original pier incorporated in extended W. pier; E, access cut through original pier), *c* Brucehaven (A, approximate position of cut rock-face; B rock-cut steps), *d* Cellardyke (A, approximate position of pier and B, of breakwater head, both removed in 1829).

replacement; patches of poor and irregular coursing also occur both further out on the N. side and on the S., the best work on the S. appearing in, and close to, the pier-head, where the blocks are very large and are secured with pinnings. The slabs forming the lip on the N. side are fairly homogeneous throughout; the S. side carries a parapet of recent construction. Pawls are of stone, wood and iron; of the stone examples one has been worked to an oval section while two others are unworked and heavily worn.



The East Pier of 1811 no longer exists, but a rebuilt jetty occupies what seems to have been its position.

<sup>1</sup> *RPC*, I, 381.

<sup>2</sup> Adair, J., *Description*, 10.

<sup>3</sup> RMS, unpublished, of 30th March 1704, in H.M. General Register House.

<sup>4</sup> In H.M. General Register House (R.H.P. 1022).

<sup>5</sup> By Mitchell, R., *ibid.* (R.H.P. 1023).

<sup>6</sup> By Drysdale, R., *ibid.* (R.H.P. 57/2).

*Aberlady Bay, East Lothian.* NT 460801 (approx.)

Aberlady Bay, where the lowermost reach of the Peffer Burn forms a navigable channel through the tidal sands and mud, is mentioned as early as 1336, when boats were requisitioned there by the Governor of Edinburgh Castle.<sup>1</sup> It belonged to the Royal Burgh of Haddington, the confirmation of whose charter (1633) mentions 'the port of Aberladye lyand in the bossome of pepher water and common gait leading to the said port'.<sup>2</sup> The Burgh had been in treaty, between 1614 and 1630, with the Convention of Royal Burghs for 'support of thair harberie' of Aberlady,<sup>3</sup> but no evidence exists for actual harbour-works, and Adair (1703) clearly implies that vessels simply lay in the estuary.<sup>4</sup> Blaeu's map,<sup>5</sup> presumably reflecting the conditions of the early seventeenth century, marks a long row of houses at the water's edge, closely set and with their gable-ends turned landwards. On the other hand, a report of 1694 states that the place 'cannot be made navigable, or a safe harbour, without an extraordinary expences'.<sup>6</sup>

Traces of a wide pier piercing the rebuilt house of Kilspondie (456803), which was a ruin in 1807,<sup>7</sup> might suggest that it was originally a commercial building of some sort, but there is no evidence to connect it with the harbour. Some surviving wide chamfers probably indicate a seventeenth-century date.

<sup>1</sup> *Cal. of Docs.*, III, 352.

<sup>2</sup> *APS*, v, 92 a.

<sup>3</sup> *CRB*, II, 463; III, 90, 296, 317.

<sup>4</sup> Adair, J., *Description*, 7.

<sup>5</sup> *Theatrum Orbis Terrarum*, ed. 1654, v, 'Lothian and Linlithgo'.

<sup>6</sup> *Corporations*, Appendix (1835), 37.

<sup>7</sup> Information from the Earl of Wemyss.

*Airth, Stirlingshire.* NS 899878

A 'Ferry of Airth', which may or may not have been the same as the one later worked from Higgins-neuk (q.v.), is on record in 1565<sup>1</sup> and again in 1592,<sup>2</sup> while in exporting his coal in and after 1596<sup>3</sup> Bruce of Airth presumably made use of his own port. In 1624 quarantine precautions are recorded.<sup>4</sup> In 1723 there was a busy shipyard at Airth, with a wind-driven saw-mill invented by its owner,<sup>5</sup> but after about 1760 the town's trade tended to move successively to Carronshore and Grangemouth.<sup>6</sup> Communication with the Forth was maintained by means of the tidal channel of a small stream, which now runs, as a marshy hollow almost dried up by land-drainage, along the NW. side of the track that leads to the shore from the end of Shore Road, and a low grassy hummock some 200 yds. NE. of the last house in Shore Road is probably a vestige of the quay. Roy's map of Scotland (1747-55) marks a dock at the head of the channel, and a plan by J. Shaw (1810)<sup>7</sup> shows that the dyked enclosure between the quay site and the village was a reservoir with sluices for regulating the flow of water. The plan also marks 'Quay Hard' on the SE. bank below the reservoir, and two mooring-poles on either side.

<sup>1</sup> *RPC*, I, 381.

<sup>2</sup> *ibid.*, IV, 719.

<sup>3</sup> *PSAS*, XXIV (1889-90), 474.

<sup>4</sup> *RPC*, XIII, 623.

<sup>5</sup> *Geogr. Coll.*, I, 327.

<sup>6</sup> RCAM, *Inventory of Stirlingshire*, 440.

<sup>7</sup> H.M. General Register House (R.H.P. 49/1).

*Alloa, Clackmannanshire.* NS 884920

The history of Alloa as a seaport no doubt goes much further back than written records, as the place possessed two natural advantages which would have attracted shipping at all periods. These were, first, a sheltered creek, known as the Pow of Alloa, at the mouth of the Brathie Burn, and second, a position at the highest point on the Forth accessible to larger vessels, the higher reaches of the river being twisty and beset by shallows. The earliest published mention of the port seems to be one which dates from 1502, when the king paid for the victualling of a ship bound there,<sup>1</sup> but more interesting in the light of later developments is the record of coal being carried from Alloa to Inchkeith in 1558.<sup>2</sup> In 1573 the Pow was being used for the export of contraband and unfree traders' goods.<sup>3</sup> In the sixteenth century the port does not seem to have been mentioned as an asset of the Mar estate, but a charter of 1620 grants the Earl 'portum marinum de Alway et lie Pow ejusdem, cum privilegio litoris et anchoragii consueto, cum cimbis

portatoriis et *lie ferrie* super aquam de Forth ex utroque latere infra et juxta dominium de Alway'.<sup>4</sup> None of these records, of course, need imply the existence of a built harbour at any of the dates in question, but the 'herberie' of 1655<sup>5</sup> was probably something artificial, and consequently the expression 'Port and Shoar', of 1685,<sup>6</sup> need not be taken as meaning that vessels had still, at that time, to be beached on an unimproved foreshore. In 1722 a 'commodious harbour' existed,<sup>7</sup> and Roy's map of Scotland (1747-55) marks a pier on the NW. side of the Pow, with a sluicing-pond in the Pow a short distance higher up. For periods later than the middle of the eighteenth century very full records are preserved in the minutes of the Alloa Harbour Trustees,<sup>8</sup> and the evidence obtainable from these is discussed below.

Few remains of the older works have survived the improvements of the nineteenth and twentieth centuries, and the changes that have followed the closing of the harbour in the late 1950s. Today (1967) there is a straight quay, 465 ft. long, fronting south-westwards on the river, and from its SE. end another stretch of quay running eastwards for some 200 ft. This latter quay forms the N. side of an inlet, south of which lie some abandoned wooden piers and other works, while at the head of the inlet, east of some disused dock-gates, a large wet dock has been filled in lately. This area is at present inaccessible. The inlet and the dock in combination represent the remains of the former Pow of Alloa; the 25-inch O.S. map surveyed in 1854, seven years before the construction of the dock began, shows a creek 1,010 ft. long by 145 ft. wide at the mouth, receiving the Brathy Burn at its upper end through a sluice behind which water is ponded for the flushing-out of silt. A second main feature of the earlier harbour was evidently the West, or Little, Pow, which formerly entered the river just SE. of the Mar Inn but was filled up in 1848;<sup>9</sup> Wood's Town Atlas (1825) shows it as about 120 ft. long by 85 ft. wide, and with a sluicing-pond at its head. The formation of this pond was decided on in 1768, and may or may not have been connected with the construction, in 1776, of a waggon-way from the collieries,<sup>10</sup> which Wood marks as passing over a bridge between the Pow and the pond.

While the Harbour Trustees' minutes preserve a full record of their works, they suffer from two serious defects as a source of useful information, namely, a total lack of plans to illustrate the verbal statements and also a general vagueness in allusions to points of the compass. In consequence, it is rarely possible to correlate existing structures with works mentioned in the minutes, and at best one can merely presume probable phases in the harbour's development. In the seventeenth and eighteenth centuries these seem to have been as follows. (1) An unimproved foreshore,<sup>11</sup> with natural shelter provided by the Pow: (2) a quay fronting on the river, west of the Pow: (3) addition of a quay 265 ft. long on the N. bank of the Pow (1757): addition of another quay, 118 ft. long, linking up the two already existing ones (1761); further construction, impossible to locate from the minutes but evidently important (1778): (6) widening of the Pow to 70 ft. (1791). In later years the process of improvement continued particularly at the wet dock, but nothing of interest emerges regarding these works apart from the filling in of the West Pow.

The evidence of the structures themselves is also rather meagre. The quay-wall along the river is faced with large, well dressed blocks in courses, and may well date from about 1756; in that year the Trustees decided that extensive repairs were needed to avoid total ruin, and that the wall should be raised to one foot above high-water mark. The section inserted when the West Pow was filled in is clearly defined by dry joints,<sup>12</sup> and it contains a doorway 4 ft. 4 in. wide which gave access to a stair leading up to and debouching on the top of the quay. The slabs along the margin of the quay have been secured partly with cramps and partly with lozenge-shaped or oblong keys, and therefore are presumably later than the date suggested for the wall-face below them; they must, however, be earlier than 1848, as their continuity is broken by a stretch of unkeyed slabs about 55 ft. long, where the filling has been inserted. A hole in the surface of the quay, now covered with rails, was presumably the outlet of the stair mentioned above.

Spaced out along the quay are six larger and four smaller cast-iron pawls with expanded tops, as well as two wooden ones and an upright piece of piping, and beside the filled-up wet dock there are several large iron pawls of the same type and at least two wooden ones. Purchases of iron pawls to replace wooden ones were recorded in 1839 and 1856, the latter consignment consisting of second-hand pipes, but there are no grounds for connecting the existing pawls with any particular purchase. At earlier dates wooden pawls are described as of oak or 'firr'; a minute of 1767 specifies an oaken pawl to be 8 ft. long by 8 in. square and to be sunk 5 ft. into the ground, while the others, presumably of Scots pine, were to be 12 ft. long by 12 in. square and sunk 7 ft. Deep sinking seems to have been essential, as on one occasion a pawl was pulled out by a large, heavy vessel. Pawls were placed not only on the quays but also along the 'beach', wherever this was, for mooring ships which were waiting to enter the Pow. Some minor points of interest mentioned in the minutes are a suggestion for the use of wedges in securing masonry (1774), the fixing of an iron bar along the lip of a quay to prevent the displacement of stones by ships' ropes, and the

attachment of a mooring-ring to the bar, for the warping out of small craft. Arrangements for sluicing out mud were evidently of great importance, as both Pows were constantly in trouble on account of silting.

Agreements with contractors are minuted from time to time, and deserve to be noticed. An example is the contract for work on the N. bank of the Pow (see above), for which a plan had been prepared by one Fairbairn.<sup>13</sup> Under this, the contractors, John Hutchison and Thomas Fotheringhame, were to proceed as follows. (1) Excavate a foundation-trench down to water level at least 10 ft. wide, to receive a wooden frame to support the building: (2) make and lay in the trench a frame of Copenhagen red-wood 10 ft. broad, the logs to be 12 in. broad by 6 in. thick, with the cross-logs undermost and the upper logs notched in an inch: (3) drive in piles 12 ft. to 14 ft. long along the front of the work and in places between the logs: (4) build a new pier on this foundation, 9 ft. thick at the base and 3½ ft. at the top, the stones to be 4 ft. and 5 ft. long and 'proportionable' in other ways: (5) finish the whole front in squared, jointed Longannet freestone, set dry and battered: (6) build up behind with dry rubble, rammed and with clay on the outside, and filled up with rubbish to the level of the building: (7) make three flights of steps 7 ft. 10 in. wide. Other contractors mentioned in the minutes are James Kirk (10th July 1778), Hugh Condie (5th September 1791), John and James Murray (23rd March 1798), John Smith (8th September 1814), McRobbie and Mailler (2nd May 1830), William Anderson (7th September 1838), James McVicar (4th May 1847), Thomas Paterson (18th July 1857) and George Macfarlane (7th January 1861). The engineer for the wet dock was Charles Ower, and the contractor Thomas Paterson (1st January 1861).

<sup>1</sup> *Accts. LHT*, III, 342.

<sup>2</sup> *ibid.*, x, 432.

<sup>3</sup> *RPC*, II, 446.

<sup>4</sup> *RMS*, 1609-20, No. 2125.

<sup>5</sup> *CRB*, III, 412.

<sup>6</sup> *APS*, VIII, 508 b.

<sup>7</sup> *Geogr. Coll.*, I, 308.

<sup>8</sup> I am indebted to British Railways Historical Records Department for access to these minutes and for assistance in their study.

<sup>9</sup> Trustees' minute of 1st May 1848. These minutes

are the source of all statements made below without other authority being quoted.

<sup>10</sup> *NSA*, VIII (Clackmannanshire), 30.

<sup>11</sup> The name 'The Shore' is applied on the O.S. maps both to the quayside roads and to some adjoining ground to landward.

<sup>12</sup> Details may be seen conveniently from South Alloa, on the opposite bank of the river.

<sup>13</sup> The full text of this contract, and detailed estimates, are included in a minute dated 7th May 1757.

*Anstruther Easter, Fife* (fig. 2b). NO 568033

The thirteenth-century mention of the mouth of the Dreel Burn<sup>1</sup> no doubt applies to whatever settlements then existed both to E. and to W. of it, but apart from this no record of Easter Anstruther seems to be available before the sixteenth century. The bay no doubt had been long in use as an anchorage but harbour-works may not have originated until after, perhaps shortly after, 1541, when Anstruther and Pittenweem were both created burghs with the right to build harbours, 'unum seu plures'.<sup>2</sup> Anstruther's harbour was certainly in existence by the 1580s, when two pirates 'war hangit on our Pier end' (1587) and a ship of the Spanish Armada arrived 'within our herbrie' (1588).<sup>3</sup> A 'bulwark, peir, schoir and heaven' are mentioned in 1601,<sup>4</sup> and it is said in the same passage that the 'bulwark', probably a breakwater with a quay, here called the 'peir', on its inner side, was 'weill and substantiouslie biggit' before it suffered damage in a storm and its 'remanent [was] schaikin lous'. There is probably no significance in the representation on Blaeu's map of East Fife (1654) of an L-shaped palisade in front of the town, as Gordon's map (1642) marks an ordinary pier and basin, and Blaeu himself shows a pier, and not the palisade, on his general map of Fife. In 1703 there was a 'long, high and well-built Peer of Stone',<sup>5</sup> which seems to have run out straight for some 540 ft. and then to have returned towards the west for a further 120 ft. This work is now incorporated in the existing central pier (see below), but its original features and the traces of periodical repairs<sup>6</sup> are all obscured by cement. It can hardly have done more than provide some limited shelter to the Shore Street frontage of the port.

A great improvement was effected in 1753, by the construction of a second pier<sup>7</sup> NW. of the original one, so as to form, with it, a basin described in 1837 as 'commodious and safe'.<sup>8</sup> This phase is illustrated by the 6-in. O.S. map surveyed in 1854. Originally about 550 ft. long, the new pier was later extended to a total length of 1,350 ft., and another, some 960 ft. long, was built between 1866 and 1877<sup>9</sup> to the east of the original pier, forming an outer basin with an entrance in its S. corner. Today the harbour thus consists of two basins, echeloned north-west and south-east and separated by the original pier, this latter having been truncated by the cutting through of its seaward portion to provide an access from the outer to the inner basin in place of the direct entry closed by the extension of the W. pier across it. The returned head of the original pier, cut off in this way, has been incorporated in the extension of the W. pier. Traces of

these alterations appear very clearly on the outer side of the W. pier, though most of the inner side is again masked by cement. The landward part of this work (1753) is of dry-stone blocks, but the innermost 90 ft., like the adjoining revetment of the frontage roadway, is of large blocks with mortar, probably as a result of reconstruction. The alignment of the pier is rather irregular, and its face slightly battered. Beyond the angle, some 550 ft. out, a short mortared stretch no doubt represents a repair; this is followed by 160 ft. of neat, rusticated work, evidently part of the nineteenth-century extension, and this in turn connects with a stretch of rough and irregular work, clearly the detached and partially rebuilt head of the original pier. The rest of the W. pier is all of the nineteenth century.

<sup>1</sup> *Dryburgh*, No. 192.

<sup>2</sup> *RMS*, 1513–46, No. 2292. A confirmation of 1587 mentions 'portum et ostia lie heavin' (*ibid.*, 1580–93, No. 1396).

<sup>3</sup> *The Diary of Mr James Melvill* (Bannatyne Club), 173 f.

<sup>4</sup> *RPC*, vi, 232.

<sup>5</sup> *Description*, 12.

<sup>6</sup> For repairs, etc., see *RPC*, loc. cit. and 3rd ser. i, 652; xiii, 11. Also *CRB*, ii, 239; iii, 12, 406.

<sup>7</sup> *Stat. Acct.*, xvi (1793), 244; *Fife* (1803) 341 n.

<sup>8</sup> *NSA*, ix, 295.

<sup>9</sup> Fleming, D. H., *Guide to the East Neuk of Fife*, Pt. 1, 59.

#### *Anstruther Wester, Fife. NO 564035*

This harbour occupied the mouth of the Dreel Burn, which separates the two Anstruther burghs and debouches into the W. end of the bay in front of Anstruther Wester's quay. The burn-mouth was evidently serving both communities as early as 1225,<sup>1</sup> and in all probability had done so since the earliest times, but modern conditions associate it with Anstruther Wester. There is no question of artificial harbour-works as early as the thirteenth century, as the document referred to states that ships and fishing-boats were fixing their anchors on a beach. The earliest hint of structure comes only in 1604, with a reference to the 'burn, port and haven',<sup>2</sup> but as the harbour needed repair in 1613,<sup>3</sup> for which it secured a grant of £200 in 1620,<sup>4</sup> it is unlikely to have been built later than, say, the 1580s, as some time would have been necessary for dilapidation to proceed, failing some sudden disaster. In 1620 it could accommodate a ship of a size to trade with the Baltic,<sup>5</sup> but later it fell on evil times. In 1661 the burgh reported the loss of its trade and of all its shipping, apparently as a result of the Civil War,<sup>6</sup> and gave up its burghal privileges in 1670.<sup>7</sup> Sibbald's editor further states that two inundations of the later seventeenth century 'destroyed or choked up the harbour, washed away the bulwarks, and swept off a long street',<sup>8</sup> one of them having probably been the great storm of 1655.<sup>9</sup> Wood dates the choking of the harbour and the destruction of the 'bulwarks' to 1670,<sup>10</sup> but it is disquieting to find him going on to state that the 'fore-street' and the harbour were carried away in the second half of the eighteenth century, as if everything had been misdated by a hundred years. If such a confusion is suspected, the 1670 date is probably to be preferred as the harbour was largely ruinous in 1703.<sup>11</sup> The port, however, cannot have gone completely out of business, as dues were being charged in 1695<sup>12</sup> and 'Sea Box' papers exist for the years 1659–1720.<sup>13</sup> In 1710 the harbour was described as 'mean and inconvenient'.<sup>14</sup>

As might be expected in view of its disastrous history, the place now holds little of archaeological interest. All that survives is a quay, reconstructed as a car-park, which flanks the burn-mouth on the S. and measures about 150 ft. by 60 ft. Its face is of well dressed blocks set vertically; these are probably old material, but their regularity suggests that the face has been rebuilt. A flight of steps which descends through the face may or may not be original, while the parapet, which extends to the adjoining stretch of frontage, shows every sign of reconstruction. The 'long street' that Sibbald's editor records as having been washed away was most probably a southward extension of this frontage, as it now ends blind on rocks about 90 ft. from the quay. Crichton Street and the next street to the S. of it likewise end blind on the same stretch of rocks, in a way which would agree with some 400 ft. or more of roadway and houses having been carried away.

<sup>1</sup> *Dryburgh*, No. 192.

<sup>2</sup> Inventory of Charters and Papers, sect. i, no. 7, H.M. General Register House file L/14.

<sup>3</sup> *CRB*, iii, 68.

<sup>4</sup> *ibid.*, 108.

<sup>5</sup> *RPC*, xii, 766.

<sup>6</sup> *CRB*, iii, 532.

<sup>7</sup> *ibid.*, iv, 14.

<sup>8</sup> *Fife*, 338 n.

<sup>9</sup> Fleming, D. H., *Guide to the East Neuk of Fife*, pt. 1 quoting Lamont, *Chronicle of Fife*.

<sup>10</sup> Wood, W., *The East Neuk of Fife*, 344.

<sup>11</sup> *Description*, 12.

<sup>12</sup> Inventory of Charters, etc., as above, sect. i, no. 17.

<sup>13</sup> *ibid.*, sect. xi.

<sup>14</sup> *Fife*, loc. cit.

*Balmerino, Fife.* NO 355247

This harbour originally was designed for the shipping of lime from the Fife hills to Dundee, a trade which it later lost to Charlestown and Sunderland, but from about 1760 local wheat and barley were shipped here instead of, as previously, from Dundee or from some port on the Firth of Forth. It had been entitled to charge dues since 1755.<sup>1</sup> In 1793 the harbour was described as 'trifling', though capable of improvement, but a good bottom allowed ships to 'lie and take in or deliver with ease'.<sup>2</sup> In 1838 the main export was potatoes.<sup>3</sup>

The pier has been an L-shaped structure, consisting of a 'stem', perhaps about 110 ft. long when its vanished landward end was intact, by 18 ft. wide, and a pier-head, returned eastwards, measuring about 65 ft. from E. to W. by 37 ft. transversely. It thus protects from the west a small tidal pocket bounded to landward by a shingly beach, the upper edge of which has been fortified with boulder revetment. The facing is all of large, well-dressed and neatly-fitted blocks, most of which are droved or broached; part of the N. face stands as much as 8 ft. above the tidal shingle, and this probably represents nearly the original height of the upper surface. Several tall, upright timbers stand along the N. face. At its junction with the pier-head, the 'stem' is pierced by a culvert, now ruined and filled up but topped by an elliptical arch-head, 5 ft. 8 in. in span; this feature is duplicated at Kingoodie (q.v.), and was probably intended to allow a tidal current to sluice out silt from the harbour. The pier-head was originally both narrower and shorter than at present, and has been enlarged in two successive operations; this is shown by the emergence, through the surface of the pier-head, of the uppermost stones of two former faces, with the stumps of upright timbers in front of them, the earlier set of facing-blocks being set upright and the later being droved. There is also evidence that the whole pier-head was extended eastwards when the northernmost, i.e. the latest, section was added. The characteristics of the masonry suggest that none of these operations, nor, for that matter, the construction of the 'stem' of the pier in its present form, should be dated earlier than the beginning of the nineteenth century.

<sup>1</sup> *Tidal Harbours*, 172.<sup>2</sup> *Stat. Acct.*, ix, 221.<sup>3</sup> *NSA*, ix, 593.*Balmerino (Kirkton), Fife.* NO 359252

This pier or jetty, now reduced to its foundations, has been about 50 ft. long by 12 ft. wide, with a square end which does not reach low-water mark. The footings of the sides are whinstone blocks, and the core is of similar blocks broken smaller and more roughly. The littoral rocks have been cut out to receive the landward end of the work, now vanished. The structure may well have been connected with a salmon-fishery, as the neighbouring farm-buildings of Nether Kirkton are said to incorporate a 'boiling-house', formerly used for par-boiling salmon before dispatch to the London market.<sup>1</sup>

<sup>1</sup> Campbell, Rev. J., *Balmerino and its Abbey*, 596; *Third Statistical Account of Scotland: Fife*, 666.*Belhaven, East Lothian.* NT 662784

No solid grounds exist for identifying Belhaven with the Dark Age Aberlessic, where St Kentigern's mother is supposed to have begun her miraculous voyage, but as Professor Jackson places Aberlessic somewhere in the Tyne estuary,<sup>1</sup> the guess becomes attractive. The harbour was certainly established as early as 1153, when the Earl of Dunbar granted the monks of May a toft in its neighbourhood;<sup>2</sup> and in 1369-70 the Earl of March received it as a free port, with free entry and exit of ships, along with the grant of a burgh at Dunbar.<sup>3</sup> It continued to figure in Dunbar charters after the burgh had begun to build its own 'Old Harbour' in 1574,<sup>4</sup> and in fact an attempt was made to charge dues on a vessel unloading at West Barnes, west of Belhaven, as lately as 1814.<sup>5</sup>

The harbour occupied a well-sheltered, tidal area, now reclaimed by a sea-wall, in the mouth of the Biel Burn, where Highway A 1087 and the by-road to Belhaven Sands form a T. Roy's map of Scotland (1747-55) shows the place as tidal sand, traversed by the mouth of the Lochend Burn, which is now piped under the adjoining children's playground. Some structural remains, including a fragment of a masonry pier and some posts, were visible in 1841;<sup>6</sup> and other masonry, probably part of a wharf as one block had a ring fixed in it, was found in recent years in the SE. corner of the reclaimed ground.<sup>7</sup>

<sup>1</sup> *Studies in the Early British Church*, ed. Chadwick, N. K., 293.<sup>2</sup> *PSAS*, xc (1956-7), 74 f.<sup>3</sup> *RMS*, 1306-1424, No. 340.<sup>4</sup> *RPC*, 1569-78, 417. This subject is discussed at greater length in *PSAS*, xcix, 173 f.<sup>5</sup> Dunbar Burgh Records, H.M. General Register House, Box 22 (13th Sept. 1814).<sup>6</sup> Dunbar Burgh Harbour Accounts, *ibid.*, Box 20.<sup>7</sup> Local information, 1966.

*Birkhill, Fife.* NO 329233

This small ruined pier or jetty may or may not have been associated with the mansion-house of Birkhill, which was built in 1780 and greatly enlarged in 1857-9.<sup>1</sup> The landward end is covered with shingle, but below this about 100 ft. of the work is visible, its breadth increasing from 3 ft. 6 in. where it first emerges to 5 ft. 6 in. at the end. The end is squared, and there is no sign of the roundel shown on the 25-in. O.S. map surveyed in 1894; beside it there stands a masonry base for a marker.

<sup>1</sup> Campbell, Rev. J., *Balmerino and its Abbey*, 596.

*Blackness, West Lothian.* NT 052801

Blackness was a landing-place at least as early as 1304,<sup>1</sup> and in 1389 the 'port' was granted to the Royal Burgh of Linlithgow.<sup>2</sup> In 1465 the burgh was authorised to build a harbour there, with permission to take stones and lime for that purpose from the castle, the demolition of which was ordered at the same time.<sup>3</sup> The area granted for the port comprised the whole promontory ('montem et rupem') of Blackness to the north of St Ninian's Chapel, the site of which is marked on the O.S. maps at the N.E. end of the village, and extending to high-water mark on either side; but it is unnecessary to infer that the inclusion of the E. side of the promontory implies a connection with the remains noted in the bay to the south of Blackness Castle (q.v.), seeing that the village and the custom-house, as well as St Ninian's Chapel, are all on the W. bay. 'Biging and reparatioun of the schore and hewin' were in progress in 1602-4,<sup>4</sup> and in 1710 the place had 'a harbour for all Ships', with a custom-house and warehouses, and ranked as the only safe anchorage in that part of the Firth.<sup>5</sup> Roy's map of Scotland (1747-55) marks a pier very much in the position of the existing one, but the latter is evidently not the same one as was standing in his day as the harbour was in ruins by 1843,<sup>6</sup> and in 1856 the 25-in. O.S. map marked nothing more than an ill-defined rickle of stones, all below high-water mark. It is only in the edition of 1895 that the pier is given its present form, and its rough, irregular masonry, combined with the cemented top and remains of timber fenders, suggests quite recent construction. However, the pier's present length, of 220 ft., may be approximately the same as that of the earlier work; and some of the latter's materials may well have been re-used, particularly the very large boulders on which the seaward end is founded. The structure is now partly ruinous.

<sup>1</sup> *Cal. of Docts.*, iv, 461.

<sup>2</sup> *RMS*, 1306-24, No. 776

<sup>3</sup> *ibid.*, 1425-1513, No. 857.

<sup>4</sup> *CRB*, II, 105, 204.

<sup>5</sup> *Linlithgowshire*, 16 f.

<sup>6</sup> *NSA*, II (Linlithgowshire), 72 f.

*Blackness Castle, West Lothian.* NT 056803

Blackness Castle is shaped on plan like a ship, aligned north-eastwards, its sharp stem being founded on the littoral rocks. East of a line drawn seawards from the end of the structure, the rock has been cut away to a roughly vertical face, up to 6 ft. high above the beach but decreasing in height seawards, and in this way a small tidal cove has been formed with some slight shelter from the west. The naturally smooth upper surface of the rock on the lip of the cutting has evidently been used as a quay, serving boats at high tide, as a large iron ring has been set in it and another in the 'stem' of the castle. The latter is probably not of any great age, as it is practically free from rust.

Before reaching low-water mark the rock dips under a muddy beach, but further out there may be seen the footings of a landing-jetty, evidently for use at low water. This has been formed of a double row of squared blocks, about 4 ft. wide over all and probably over 120 ft. long, but its length is doubtful as its junction with the littoral rock has been washed away and its seaward end was under water when visited. The small amount of debris seems to suggest that the work never stood very high, while the presence of a block which has been cut to take an iron cramp, and of another, evidently re-used, which shows traces of droving, indicate a date later, and perhaps a good deal later, than the beginning of the nineteenth century.

*Blackness Castle Bay, West Lothian.* NT 056800-1

The muddy bay south of Blackness Castle may be seen, at low tide, to contain a long rickle of debris, and this proves, on examination, to be the ruin of a wall, presumably once a breakwater protecting the N. part of the bay. The footings of both faces of the work survive over a stretch about 110 ft. long, and give it a breadth of about 10 ft. at foundation level; the footings are roughly broken blocks of whinstone, unsuitable for coursed construction, combined with a few boulders, and the core is of similar material broken smaller. The N. end evidently rested on rocks forming part of the N. horn of the bay, at a

point 240 ft. east of the custodian's house inside the Castle enclosure (05638019), and although, as is usual in such cases, the work has been very heavily damaged in the zone near high-water mark, the rock has clearly been cut into where the structure abutted it. From this point it runs south for 320 ft. and then swings SSW. for a further 340 ft. before fading out in the mud. The space enclosed between the break-water and the beach thus approximates to a longish triangle, with a greatest width of about 300 ft.

As has been said above (p. 217), these remains are unlikely to represent the harbour authorised by charter in 1465.

*Boarhills, Fife.* NO 570149

Boulders have been cleared away, and two or three ridges of rock have been flattened out, to make a boat-landing about 50 ft. wide immediately west of the end of the track that descends to the shore from Chesterhill. This work has most probably been done to accommodate the life-boat that was formerly stationed here.

*Bo'ness, West Lothian.* NS 999818

Bo'ness was evidently a port before it possessed a harbour. The port is on record at least as early as 1565, when it had to be watched for disaffected persons,<sup>1</sup> but the construction of the first harbour was authorised only in 1707, the Act<sup>2</sup> mentioning the inconvenience previously suffered of waiting for calm weather and suitable tides. The earliest work seems to have been a single pier, on the west of the anchorage; the East Pier was not built until 1733, when it was given a length of 368 ft., a further 180 ft. being added in 1787. The works included a tidal basin and sluice which served to wash out silt.<sup>3</sup> Roy's map of Scotland (1745-55) duly shows the two piers, with the harbour between them.

Notwithstanding the fact that Roy's map seems at first sight to accord with the existing arrangements, nothing of archaeological interest actually survives. A comparison of the 1856 and 1895 editions of the 25-in. O.S. map shows that a great deal of ground was reclaimed between those dates and the topography of the harbour area materially altered.<sup>4</sup> The existing West Pier, for example, evidently extends some 300 ft. further out to sea than its earlier counterpart. The shore-line of 1755, in fact, seems likely to have lain as far south as Shore Street, and on that showing Roy's piers will have been obliterated by the nineteenth-century improvements.

<sup>1</sup> *RPC*, I, 381.

<sup>2</sup> *APS*, IX, 481.

<sup>3</sup> *NSA*, II (Linlithgowshire), 140.

<sup>4</sup> A major reorganisation was completed in 1881 (Salmon, T. J., *Borrowstounness and District*, 467).

*Braefoot Bay, Fife.* NT 184837

The Ancient Monuments Commissioners noted, on the headland just N. of Braefoot Bay, the remains of a fifteenth-century building, and suggested that this, and the jetty some traces of which can be seen close by, pointed to the bay having been used as a landing by the Inchcolm monks.<sup>1</sup> This suggestion seems quite probable, especially as the Bay is the nearest point on the mainland. However this may be, the jetty seems to have gone out of use before 1768, as it is not marked on an estate-map of that date in the possession of the proprietor, Mr Stirling of Garden.<sup>2</sup> The structure is now greatly wasted, all that survives being a double row, about 80 ft. long, of heavy boulder footings, set side by side but not fitted closely together, with some core material between them and a few very large blocks at and above high-water mark. At the level of the beach the work has vanished altogether, and its seaward end tails off raggedly. Its breadth varies from 12 ft. to 16 ft. A strip of foreshore immediately west of the jetty has been cleared of boulders to allow boats to be grounded, and a rock ridge on the other side of the strip has been cut back to a straight face. The fact that this strip is still clear, and not blocked with debris from the jetty, suggests that the latter may have been dismantled purposely, for the sake of its materials; alternatively, the strip may have been kept clear, for the benefit of local boats, long after the jetty was disused.

<sup>1</sup> *RCAM, Inventory of Fife, etc.*, p. 99.

<sup>2</sup> I am indebted to Mr Stirling for access to this map, which is preserved at St Colme House.

*Bridgeness, West Lothian.* NT 014818

A pier is marked at Bridgeness on Ainslie's map of Fife and Kinross (1775), and it was lengthened by fifty yards 'some years' before 1843;<sup>1</sup> but both it and its surroundings have been very much altered even since the first Ordnance survey was made in 1856. At that time the structure consisted of a single pier

projecting from a blunt point of the foreshore, but since then made ground has covered up much of the landward part of the pier and has also extended sufficiently to allow a small harbour to be formed on the east.<sup>2</sup> A second pier has also been built to the W. of the original one, a dock has been formed between them and subsequently filled up, and an entry to the dock has been cut through the E. pier. In later years the area has been occupied by industry, with the result that little survives of archaeological interest.

The original pier must have been over 500 ft. long, exclusive of made ground at its landward end; it was slightly club-shaped on plan, the outermost 130 ft. being 27 ft. wide and the remainder 18 ft. Its E. face, which is slightly battered, is of large drystone blocks, well dressed and coursed, and the margin of the top is finished in very large slabs with occasional iron cramps. The opening into the filled-up dock is about 50 ft. wide.

Reclamation of this part of the coast has obliterated the old shoreline, and consequently no remains of some recorded landings, such as Carriden, Cuffabout and Grange, can now be identified.

<sup>1</sup> *NSA*, II (Linlithgowshire), 72.

lately as 1888–1912 (Caddell, H. M., *The Story of the Forth*, 234 f.).

<sup>2</sup> Some ground east of the pier was reclaimed as

#### *Brucehaven, Fife* (fig. 2c, Pl. 26b). NS 079830

A local author suggests,<sup>1</sup> although not very lucidly, that Brucehaven harbour, formerly known as 'Capernaum', originated in the eighteenth century, and Roy's map of Scotland shows that a pier existed there before 1755. As it stands, the pier shows no obvious dating features, but it might well go back to Roy's time (Pl. 26b). It is based on a projecting rock, runs SSW. for 280 ft. on a slightly sinuous line, and then swings E. of S. for its final 100 ft., its average breadth being about 25 ft. Its W. face is of squared, well-coursed blocks, the parapet being of a different build in smaller and rougher material; about the middle of the final curve the parapet formerly contained a door-like opening, perhaps for access to steps, but this has been built up nearly to the height of the parapet, and now forms a kind of shallow embrasure. The E. face is less well coursed and shows some vertical slabs at the top, probably representing a repair. Near the landward end, on the east, a flight of rock-cut steps descends to the beach.

The pier gives shelter from the W. to the harbour area, a pocket of tidal sand which widens out at its inner end. A longish stretch of the flat rocks that flank it on the E. has been cut back to a straight face, and at least one large mooring-ring and the fitting for another survive there. The entrance was protected from the E. by a detached breakwater, about 130 ft. long, which stands on the rocks about 180 ft. SE. of the pier-head; it is built of large blocks, but is largely ruinous except for the lowermost courses.

<sup>1</sup> Cunningham, A. S., *Inverkeithing, North Queensferry, etc.*, 162 f.

#### *Burnmouth, Berwickshire*. NT 957610

Burnmouth seems to have existed as early as the beginning of the twelfth century, as 'Cramesmouth', mentioned in a charter of about 1100, is said to have been part of the place.<sup>1</sup> At that time, no doubt, and also for centuries later, the fishermen used the beaches in Burnmouth Bay and below the houses of the village, which lie behind the protection, such as it is, of tidal rocks. At any rate, no harbour is marked on Roy's or Adair's map, and no record of construction has been found of a date earlier than about 1830,<sup>2</sup> when a 'boat-harbour' was formed and the fishermen considered that an 'additional pier' was needed, to contract its mouth.<sup>3</sup> The harbour was enlarged in 1879,<sup>4</sup> and the enclosure of the inner basin was completed by the construction of a W. pier at some time since the Ordnance survey of 1908.

The original portions of the structure are readily identified, but are of little interest except insofar as they supply a date for the type of stonework employed – rusticated ashlar, battered on both faces of the piers but more heavily outside than inside. The plan is L-shaped, a pier about 170 ft. long, with a parapet 6 ft. high and a walkway 10 ft. wide, running out slightly W. of N. from the base of what is almost a cliff, and a cross-pier 100 ft. long by 18 ft. wide returning westwards across the front of the inner basin. The terminal corners of the cross-pier are formed of rounded timbers, and close to its end there stands a roughly shaped stone pawl. The entrance to the basin is now at the end of the cross-pier, but before the construction of the W. pier (*supra*) its whole W. side lay open. On the landward side the steepness of the ground allows no space for a wharf, but only for a terraced road. Beyond the junction of the cross-pier, the main pier has been extended for a further 370 ft.; its end returns to an outer entrance, from the opposite side of which a light concrete breakwater runs back to the land.

<sup>1</sup> Lawrie, C., *Early Scottish Charters*, 17, 225.

<sup>3</sup> *NSA*, II (Berwickshire), 143.

<sup>2</sup> *Tidal Harbours*, xx.

<sup>4</sup> Groome, F., *Ordnance Gazetteer of Scotland*, I, 202.



*Burntisland, Fife.* NT 228856

Burntisland harbour originally consisted of a basin protected by an island, and was described in 1703 as the 'best, largest and safest in the Firth'.<sup>1</sup> It possesses a long history as a port, and in particular served as the N. terminal of a ferry across the Firth which ran at successive periods from Leith, Newhaven and Granton. Today, however, nothing survives of archaeological interest, although the general outline of the place can be read into the modern lay-out. Thus the quay on the W. side of the Inner Harbour evidently conforms with the so-called 'Cromwell's Dyke',<sup>2</sup> while the street frontage N. and NE. of the dock as far as the SE. end of Harbour Place, all of which is marked 'Shore' in Wood's Town Atlas, represents the extent of the basin in these directions; but no structural remains may be identified in either locality as dating from before the middle of the nineteenth century. 'Cromwell's Dyke' is now masked by a shipbuilding yard and made ground; the island, with the piers that formed the harbour entrance, has been disguised by modern construction, the 'Shore' has made ground in front of it, and the 'Herring Craig'<sup>3</sup> has vanished from what is now the inner dock. The former ferry-pier, as it stood in 1895, has disappeared, its site being covered by the dock that opens north-eastwards out of the outer harbour; the existing ferry-slip dates from after 1895. The course of these various changes may be followed by comparing Wood's plan of 1824, the 6-in. O.S. map surveyed in 1854, the 25-in. one surveyed in 1895, and O.S. Plan NT 2285/2385.

<sup>1</sup> *Description*, 10.<sup>2</sup> Whether or no any credit for this work is due to Cromwell, 'peires and bulwarks' were certainly built in the harbour by James V (*RPC*, 3rd ser., I, 519).<sup>3</sup> Other recorded forms are 'Earne Craig', 'Iron Craig' and 'Heron Craig'.*Burntisland, Fife; Bath House.* NT 241862

The 'old pier' at the site marked 'Bath House', in the E. outskirts of Burntisland, is shown on the 6-in. map surveyed in 1854 as reaching at least 430 ft. below high-water mark; but today nothing survives except a short length of its landward portion, apparently rebuilt as the discharge of a small watercourse, together with a rickle of stones and boulders running out seawards from it. Another, slighter, rickle can be seen some 50 yds. to the W. and this, although not marked on the map, no doubt also represents the remains of a pier or jetty. One or other of these structures was evidently used for the shipping of lime in the early nineteenth century,<sup>1</sup> and it may be noted that part of the former road to a limekiln marked on the map of 1854 seems to have been perpetuated in the lay-out of the modern streets.

<sup>1</sup> *NSA*, IX, 420.*Cairnie, Perthshire.* NO 195192

Cairnie pier was built about 1832,<sup>1</sup> but it is now so much encroached on by mud and reeds that a description has to be eked out from the O.S. map surveyed in 1860-2. The work is based on a riverside dyke at its landward end, and projects into the Tay southwards. Its W. face runs straight for about 180 ft., forming a quay built of well-coursed blocks and slabs which now stands up to 5 ft. above the mud; where visible, the lip shows marginal slabs secured with iron cramps, and there are two cylindrical pawls of black whinstone, the larger one 2 ft. high. The E. face is completely hidden by reeds and herbage, but the breadth must have been about 45 ft. At the end of the straight stretch, the work disappears into the mud, but the map shows that, at about this distance out, a lower section curved eastwards and continued for about a further 130 ft.

The map marks a ferry plying between this pier and Ferryfield of Carpow (q.v.), on the right bank of the Earn and less than half a mile from its mouth.

<sup>1</sup> *NSA*, x, 633.*Cambo Sands*

See Crail, Creeks.

*Cambus, Clackmannanshire.* NS 853935

The creek that is shown on the O.S. maps as running south into the Forth from the neighbourhood of Cambus Distillery has been blocked off from the river, and partially filled up, by a dump of earth and debris. Until recent years, however, its wider, lowermost, portion could accommodate small boats, and

the quay at its mouth was used for the delivery of grain shipped to the distillery from Leith.<sup>1</sup> The creek probably has had an artificial origin, as the first edition of the 25-in. O.S. map shows it as discharging water drawn from the River Devon and passed through the distillery. Some slight remains of the quay still project from under the dump on the river-bank, consisting of a drystone NW. end and upstream corner, together with decayed piling along the front. The masonry, which merely faces a mass of stones and earth, is of large, well-squared blocks and embodies a chamfered base-course; the marginal blocks on the top have sockets for keys, but these are empty and the blocks are secured with cramps. Although the quay is not marked on the O.S. maps, the evidence of the socketed blocks may connect it with an early phase of the distillery, which dates from 1806 but originated as a brewery in 1768.<sup>2</sup>

<sup>1</sup> For local details I am indebted to Mr James Campbell, Alloa.

<sup>2</sup> Gordon, T. C., *A Short History of Alloa*, 74; Butt, J., *The Industrial Archaeology of Scotland*, 241.

*Carpow*

See Ferryfield of Carpow.

*Carriden*

See Bridgeness.

*Carron Harbour*

See Starley Burn.

*Carron River Estuary*

See Grangemouth.

*Carronshore, Stirlingshire.* NS 894829

Carronshore, or 'the Coalshore upon the north side of Carron', was described in 1723 as 'a good harbour for small boats and barks yea sometimes at spring tides there comes ships here of 60 tun burden'.<sup>1</sup> Roy's map of Scotland (1747-55), while showing no harbour-works, significantly marks a road running to the river-bank from the neighbourhood of Quarrel, where coal was mined, and there is evidence for a branch of the Carron-Kinnaird system of colliery railways having served the place in 1766.<sup>2</sup> Legal proceedings begun in 1757<sup>3</sup> point to a large export-trade in coal at that date from the 'harbour of Quarrel-shore', and after the opening of the Carron Works in 1760 the harbour became the Company's seaport, being connected with the Works by a private canal. The village was built at the same time.<sup>4</sup> A plan of 1797<sup>5</sup> marks 'Carron Shore Harbour', with mooring-poles on both banks, at the point where the river turns sharply from N. to E. 'Stone Pier' is likewise shown just below the turn, 'Carron Wharf' at Carron House, and 'Remains of Dry Dock' a short distance further downstream. All that now survives of these works is the opening of a small, filled-up dock at the angle of the river, in what appears on the plan of 1797 as the mouth of a 'pow'; it is built of massive blocks secured with iron cramps, and the filled-up portion originally occupied the ground behind Numbers 1-15, Dock Street.

<sup>1</sup> *Geogr. Coll.*, I, 330.

<sup>2</sup> Dott, G., *Early Scottish Waggonways*, 31 (plan).

<sup>3</sup> H.M. General Register House, GD/65/206. I am indebted for this reference to Dr J. Butt.

<sup>4</sup> Nimmo, Rev. W., *History of Stirlingshire* (1777), 453.

<sup>5</sup> By J. Ainslie, in H.M. General Register House (R.H.P. 242).

*Castleton, East Lothian* (fig. 3, Pl. 30a). NT 594850

The *villa* of Castleton is mentioned in 1452 as pertaining to Tantallon Castle,<sup>1</sup> but it certainly was in existence much earlier, probably as a fishing village, as the English governor of Edinburgh Castle requisitioned boats from it in 1335.<sup>2</sup> Its landing was no doubt the same as the 'haven' of Tantallon, mentioned in 1565,<sup>3</sup> and this was situated in the cliff-bound, tidal inlet that flanks Tantallon Castle on the NW. It was described in 1703 as 'a little clean Bay, where Boats ly'.<sup>4</sup> Traces of the landing may be seen among the rocks just below the W. corner of the Castle bailey, as follows. (i) A flattish rock (59458509) bearing on its upper surface an assemblage of post-holes, to be described below. (ii) Flanking the NW. side of this rock, a natural channel up to about 30 ft. wide and probably negotiable at high tide by boats of shallow draught. It has evidently been cleared of boulders and large stones, a rickle of which lies piled along its NW. side. (iii) At the landward end of the channel, but still below the beach, a shallow, bag-shaped pool from which, again, the boulders seem to have been cleared; it may also have been deepened slightly by

some cutting of the rock floor of the inlet. The pool and the channel may be made out, in the middle distance, in Plate 2 of the *Official Guide to Tantallon Castle* (ed. 1960).

The surviving post-holes, including ten vestigial ones eroded to a depth of one inch or less, number fifty-four and are arranged as shown in fig. 3.<sup>5</sup> That is to say, a row (AB) of twenty-five holes (1-25) borders the NW. edge of the rock for 79 ft. from its SW. end, which projects into the pool; another row (CD) of twelve (54-43), 38 ft. long, similarly borders the SE. side of this projection, and then returns NW., with four holes (42-39), to meet the first row at about its mid-point (E). Holes ACDE thus mark out an elongated figure some 44 ft. long by 10 ft. to 16 ft. wide, the SW. end of which is left open by a gap (AC) of 12 ft. between holes 1 and 54. In addition, a row (BF) of thirteen holes (26-38) strikes off the NE. end of the first row at an angle of about 105°, to run straight across the rock for 35 ft. to end on a large rock-pool; while four further holes, now vanished, seem to have been visible in 1931 prolonging the line ED south-eastwards as far, perhaps, as G. Except for three gaps (1-54, 10-11, 46-47), the holes are generally

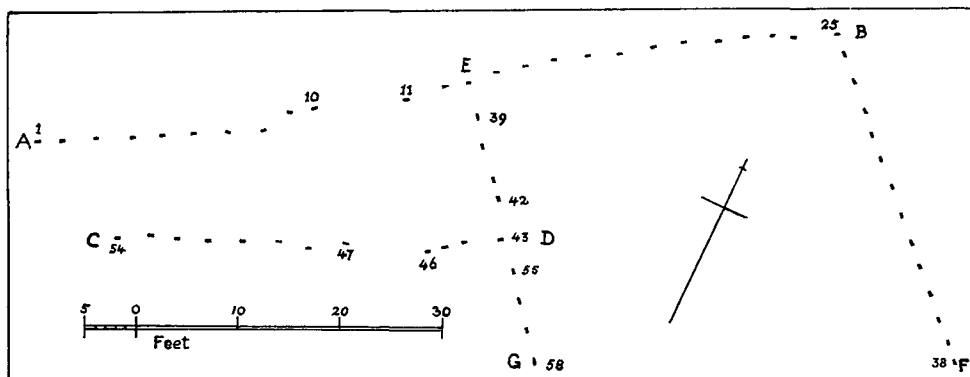


FIG. 3. Castleton, post-holes for landing-stage. Nos. 1, 2, 19-22, 34, 47, 53 and 54 are vestigial, 55-58 were recorded in 1931, but now are invisible.

spaced about 3 ft. apart; they are oblong in shape, as if to receive squared timbers rather than naturally rounded posts, and their longer axes are aligned with the rows in which they occur. They vary in length from 8 to 12 in., in breadth from 4 to 8 in., and in depth from 2 to 10 in.; they are eroded in varying degrees.

These post-holes presumably supported a wooden landing-stage or quay, something better, no doubt, than the 'briggis' employed at ferry-terminals in the fifteenth century,<sup>6</sup> but its actual size and character remain uncertain. The holes in the area AEDC could easily have supported a quay, but the spans in DEBF, even with the assistance of the vanished row DG, would have been too long for joists without intermediate support. Of this no indications were found, but packing of some sort might have been used in a manner which dispensed with post-holes, or such cuttings as were made may have been sufficiently shallow to have vanished through erosion. The gaps 10-11 and 46-47, being set opposite one another, suggest a transverse interruption of the structure. Other rock-cut bases for landing-stages found in the course of this survey are on a smaller scale, but a good parallel, from Canada, is illustrated by Bartlett,<sup>7</sup> in the shape of a heavy platform of boards resting on the end of a rock-ridge, with a timber support underneath an overhanging side.

While no date can be suggested for the post-holes, it is natural to associate them generally with Tantallon Castle, but this means little as a castle has existed on the site since before 1300, and the present building was only abandoned as a residence in 1699.<sup>8</sup>

<sup>1</sup> RMS, 1424-1513, No. 584.

<sup>2</sup> *Cal. of Docts.*, III, 352 f.

<sup>3</sup> *RPC*, I, 382.

<sup>4</sup> *Description*, 6.

<sup>5</sup> For the survey and plotting of the post-holes, and other field-work on the site, I am indebted to Mr J. Howdle.

<sup>6</sup> *APS*, II, 10, 97, 108.

<sup>7</sup> Willis, N. P., *Canadian Scenery* (1840), illustrated by Bartlett, W. H., I, opp. p. 96. A copy is in Edinburgh University Library, press mark RD. 3.26-27.

<sup>8</sup> *RCAM, Inventory of East Lothian*, pp. 65, 67.

*Cellardyke, Fife* (fig. 2d, Pl. 25a). NO 577038

At Cellardyke (Nether Kilrenny) a ridge of rock, mainly tidal, runs more or less parallel with the shore, enclosing within it a pocket known as Skinfast Haven. This was described in 1579 as a 'new seaport . . . previously little used', and authorisation was given for its 'repair and construction' in the interests of poor and unemployed fishermen.<sup>1</sup> On this showing the place had evidently been used to some extent before 1579, and the allusion to 'repair' indicates that harbour-works of some sort then existed. By 1623 the harbour was 'decayit', and a grant for its repair was obtained two years later;<sup>2</sup> in 1703 it was described as 'pretty deep, and covered by a hewen Head of Stone',<sup>3</sup> in 1710 it was mentioned cursorily by Sibbald,<sup>4</sup> and Roy's map (1747-55) marks a pier. Before the improvements instituted in 1829<sup>5</sup> the works appear to have comprised a breakwater about half the length of the present one, a cross-pier projecting from the NW. side of the basin towards the returned head of the breakwater, and a quay running from this pier north-eastwards to the inner end of the basin. The improvements resulted in the extension of the breakwater to its present length, the removal of the cross-pier, the building of a new one on an alignment parallel to the existing West Pier but some 50 ft. NE. of it,<sup>6</sup> and the excavation of some rock along the side of the basin between this new work and the site of the demolished cross-pier. The double flight of steps from the street seems also to belong to this phase of the operations. The cost of the improvements is recorded as £1,700.<sup>7</sup> In 1853 more work was evidently done on the NW. side of the basin, a continuous quay being formed along the whole length, as at present, and the old quay-face being cut back slightly to suit.<sup>8</sup> At some later date, and evidently after the Ordnance survey of 1854, the new cross-pier was removed south-westwards to its present position; later again its head was extended so as to reduce the breadth of the harbour-entrance to about 25 ft. These frequent structural changes may well have been connected with the less than satisfactory results attained by the extension of the breakwater.<sup>9</sup>

The harbour is aligned from NE. to SW. and today measures about 350 ft. in length by 120 ft. in breadth at its head and 220 ft. at its SW. end. The breakwater, with a massive parapet to seaward and a quay along its inner side, is founded on the inner slope of the protecting rock-ridge; its landward, or original, portion runs on a south-westerly alignment for about 230 ft. from the corner of the houses at the Harbourhead, the extension being deflected SSW., running on for about 170 ft. (Pl. 25a), and ending in a pier-head which returns nearly W. for 28 ft. The landward stretch is mainly built of large square blocks set vertically; its quay is up to 14 ft. wide, with rough paving and a lip irregularly aligned. The parapet is likewise rather irregularly built, varying in height up to about 8 ft. and in thickness on the top to 6 ft. Close to the deflection the parapet contains a recess which has held a wooden pawl. The stretch beyond the deflection presents an obvious contrast, as its face is of thin blocks, neatly dressed and well coursed, although the parapet is of rough material. The end of the pier-head, like that of the West Pier, has a chase for booms.

The West Pier, about 170 ft. long, is of neatly coursed blocks, rather thicker than those of the breakwater extension; the junction between the original work and the addition at the end is clearly marked. There is a flight of steps 15 ft. short of the original end.

The inner end of the basin retains its natural condition as a beach. In the N. corner there is a slip added since 1854.

<sup>1</sup> *RMS*, 1564-80, No. 2831. This expression of care for fishermen recalls the charter authorising the construction of Morison's Haven (q.v.).

<sup>2</sup> *CRB*, III, 146, 201.

<sup>3</sup> *Description*, 12

<sup>4</sup> *Fife*, 343 f.

<sup>5</sup> On which see *Fisheries*, 1829, pp. 23 f. and plan.

The fully detailed specifications are of considerable technical interest.

<sup>6</sup> See 6-in. O.S. map surveyed in 1854.

<sup>7</sup> *Corporations*, I, 145.

<sup>8</sup> *Fisheries*, 1853, p. 7 and plan in Appendix.

<sup>9</sup> *Corporations*, loc. cit.

*Charlestown, Fife* (fig. 4a, Pl. 28a). NS 065835

Neither Roy's map of Scotland (1747-55) nor Ainslie's map of Fife (1775) marks a harbour at Charlestown, but the *Statistical Account of Scotland*<sup>1</sup> credits the 5th Earl of Elgin with having built one as part of his programme of industrial development. The date given in this source for the Earl's nine draw-kilns, which face what is now the inner basin of the greatly enlarged harbour, is 1777 or 1778, but the kilns must have been standing as early as 1772, as they were visited by Pennant in that year and described by him 'as perhaps the greatest in the world'.<sup>2</sup> Consequently, even if the kilns were new when Pennant saw them, the harbour's origin may be dated to the early 1770s.

The identity of the 5th Earl's works may also be inferred with confidence. The 6-in. O.S. map

surveyed in 1854 shows that, at that date, neither the SE. portion of the existing outer harbour nor the block of made ground to the E. of it had come into being, with the result that the pier that encloses the inner basin on the S. fronted on the open Firth. Again, the NW. portion of the outer harbour bears every appearance of nineteenth-century work, and should probably be dated to the years before 1844, when improvements are on record.<sup>3</sup>

The main feature of interest is thus the pier enclosing the inner basin (Pl. 28a). It consists of two sections, of different build and alignment, and on plan resembles a sickle. The E. portion, or so much of it as has escaped the encroaching made ground, is curved, is battered externally in steps, and measures 275 ft. in length by 12 ft. in width on the top; its general alignment is approximately from E. to W. but

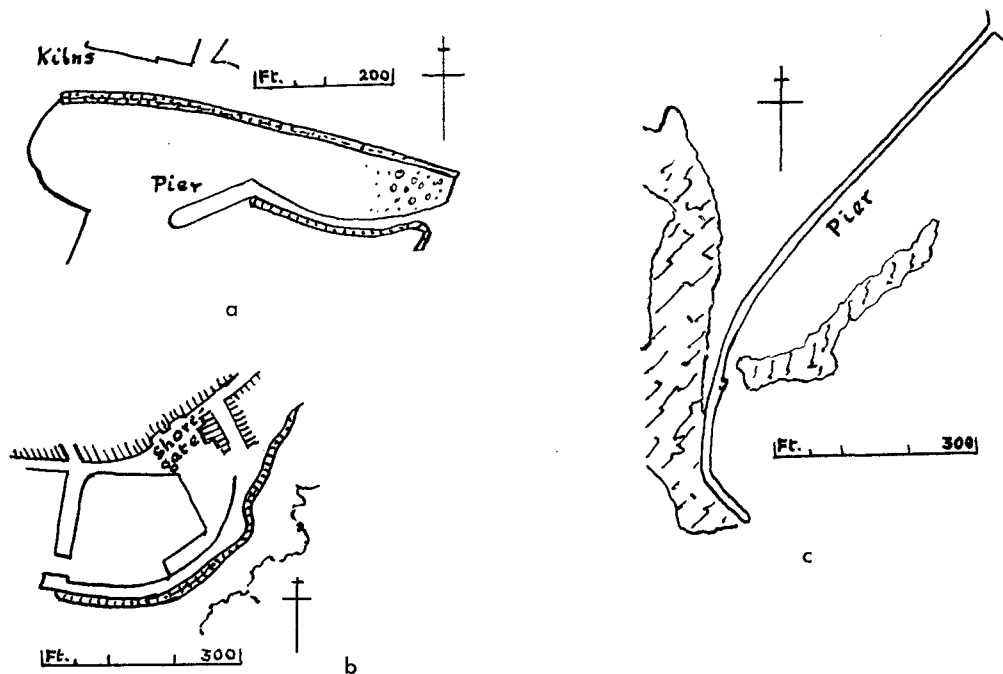


FIG. 4. *a* Charlestown, showing position of eighteenth-century lime-kilns, *b* Crail (1914), *c* Crombie Point.

the part that originally formed the E. end of the basin lies more nearly north and south. The W. portion is straight, is less heavily battered, has a smooth outer face, and measures 132 ft. in length by 18 ft. in breadth on top. Apart from some patching in vertically set masonry, the slabs used in the curved portion seem longer and thinner than those in the straight stretch. The W. end contains some very large blocks. The whole upper surface is provided with numerous mooring-rings, and that of the curved part has been partially paved with old chair-blocks from a demolished railway. The E. end of the basin is neatly faced with coursed blocks and is pierced by a large arched culvert, the stream from which would have served to scour out silt. The W. end is of similar construction, but the N. side, which must have constituted the wharf serving the Earl's kilns, has been obliterated by a railway embankment. The entrance, which opens between the pier-head and the land opposite, is 120 ft. wide. The enclosed area is 635 ft. long and from 100 ft. to 180 ft. wide; in 1844 the greatest depth at spring tides was 16½ ft.<sup>4</sup>

The peculiar plan of the pier, and the structural differences between its E. and W. portions, suggest that it may embody work of two periods. If so, the earliest harbour would have been a small U-shaped pocket open towards the W.; its entrance, about 100 ft. wide, would have been partially sheltered by the land W. of the basin.

<sup>1</sup> Vol. XIII (1794), 467.

<sup>2</sup> *A Tour in Scotland* (1776), III, 217.

<sup>3</sup> Chalmers, Rev. P., *Historical and Statistical Account of Dunfermline*, I, 404.

<sup>4</sup> *NSA*, IX, 827.

*Clackmannan Pow, Clackmannanshire.* NS 895903–898904

In 1841 there existed 'pretty extensive piers at the mouth of the Black Devon',<sup>1</sup> a muddy tidal creek opening into the Forth, and though the remains are of little archaeological interest the site deserves to be noted for its place in a by-gone pattern of industry. Today the piers are represented only by four groups of decayed piling on the left bank, two close to the entrance and two on the upper part of the lowest meander. Other stakes are probably remains of revetment. The dyke that protects the reclaimed ground to the SE. has a road on top of it, and its lower end is covered with mounds of what is probably dredged material; these recall the loan of dredging plant by the Alloa Harbour Trustees to the Clackmannan Coal Company in 1887.<sup>2</sup> (Cf. Kennetpans.)

<sup>1</sup> *NSA*, VIII (Clackmannan), 123.<sup>2</sup> Harbour Trustees' minute of 22nd Jan. 1887.*Cockenzie, East Lothian.* NT 398756

Cockenzie is on record in 1565<sup>1</sup> and in 1592,<sup>2</sup> at the latter date as a free haven. Blaeu's map marks 'Cockeny hauen' and shows two projections,<sup>3</sup> presumably representing piers, and these may be correlated with the harbour begun by the 3rd Earl of Winton, about 1630, in connection with his salt-pans.<sup>4</sup> This work is said to have been destroyed by a storm,<sup>5</sup> but the place must have continued in use, as a document probably datable to the turn of the century lists Cockenzie as a 'sea harbour',<sup>6</sup> while Adair (1703) records 'a harbour within a stone Peir', although noting that it was going out of use on account of the narrowness of the entrance.<sup>7</sup> The York Buildings Company renovated and enlarged the harbour in 1722 and built a railway to it from the Tranent colliery,<sup>8</sup> some remains of which may still be seen south of the village in square NT 4074. Colliery and harbour were bought by John Caddell in 1774, and the harbour was rebuilt by Messrs Caddell to plans by Messrs Robert Stevenson and Sons, being completed in 1833.<sup>9</sup>

The harbour occupies a tidal pocket of mud and flat rock, partially protected by a pair of rock ridges which extend across its front from east to west and give access to it through a gap between their ends. On the E. ridge there stands a breakwater-quay 227 ft. long with a returned pier-head; it is built of squared red-sandstone blocks in courses, with some rusticated work in parts of the seaward face. The parapet is up to 8 ft. 6 in. high by 2 ft. thick, and is secured along the top with a stout iron strap. The W. breakwater has rusticated masonry in its terminal portion, and a patch of vertically set slabs further in, no doubt representing a repair. In spite of minor differences in masonry, there is no reason to doubt that the whole work, including the cuttings of underlying rock that appear from place to place, is substantially of the period of the Caddells' reconstruction. The entrance is 90 ft. wide, and the enclosed area amounts to slightly over 5 acres.

<sup>1</sup> *RPC*, I, 381.<sup>2</sup> *APS*, III, 641.<sup>3</sup> *Theatrum Orbis Terrarum*, v, 'Lothian and Linlithgo'.<sup>4</sup> M'Neill, P., *Tranent and its Surroundings*, 195.<sup>5</sup> *ibid.*<sup>6</sup> *Geogr. Coll.*, III, 111.<sup>7</sup> *Description*, 7.<sup>8</sup> Dott, G., *Early Scottish Waggonways*, 15.<sup>9</sup> For this information I am indebted to Mr D. A. Stevenson.*Coldingham, Berwickshire.* NT 918665

Although Coldingham could serve as a port at least as early as 1602,<sup>1</sup> there is nothing to suggest that it ever possessed a harbour. That no harbour existed in the parish in 1794 is noted in the *Statistical Account*,<sup>2</sup> but Coldingham Sands were used at that time by fishing-boats.

<sup>1</sup> *RPC*, VI, 373.<sup>2</sup> Vol. XII, 45.*Cove, Berwickshire.* NT 784717

Cove Harbour occupies a tidal inlet among rocks, open to the E. but enclosed on the S., W. and NW. by high cliffs and partially protected on the N. by a massive, cliff-bound bluff. The inlet has a longish history as a seaport, as it seems to have been a recognised landing-place at least as early as the beginning of the seventeenth century.<sup>1</sup> In the seventeen-fifties, and again in the eighteen-twenties, attempts were made to build a harbour, but in each case the works were wrecked by storms before completion.<sup>2</sup> The existing works, which were finished in 1831, consist of two piers, a northern one extending south-eastwards from the end of the bluff just mentioned and a southern one running northwards from the S. arc of the bay. The enclosed area amounts to just over three acres, and the whole of it dries out at low water as far as the entrance which is at the low-water head of a channel running through the tidal rocks, perhaps deepened artificially in 1751, and is 72 ft. wide between the ends of the piers.

Both piers are built<sup>3</sup> of light-red, grey and yellowish sandstone blocks, very well cut and coursed, with iron strapping, 2 in. wide by 1 in. thick, along the edges of upper surfaces and on external angles. Bedding in the underlying rock for the foundations of the lowest-lying parts was extremely difficult to cut, as work was only possible at the bottom of the lowest tides and then for very short spells.<sup>4</sup> The North Pier is angled, its outer portion being 70 ft. and its inner one 140 ft. long externally; it carries a walkway, 13 ft. 6 in. wide, about 9 ft. above high-water mark, and a parapet 9 ft. 2 in. high and 5 ft. thick on top. A flight of steps mounts the parapet at the angle, and a wider one at the end. Just below the lip of the walkway seventeen pairs of round-ended stones project, like corbels, from the face of the pier; they were probably intended to keep in place the mooring-ropes of craft lying below. At the end of the walkway there is a double iron pawl, and one stone and three wooden ones elsewhere along its length; also several iron mooring-rings and remains of the attachments of others. At its landward end the walkway widens into a shelf cut out of the rock, protected on its seaward side by a ridge, left uncut, which prolongs the parapet landwards and may originally have carried some continuation of its coping. On the shelf there stand two houses inhabited until 1946 but now used as stores, and from it rock-cut steps give access both to the top of the unexcavated rock and, at low water, to the bottom of the harbour. At high water there is no land access to the rest of the harbour area except by a tunnel through the cliffs (see below), itself reached from the pier by a road which mounts the seaward face of the bluff.

The South Pier projects from a cliff on the E. side of the bay, and stretches across a flattish area of tidal rock-ridges and channels. It consists of two sections set at an angle, the outer one being much the stouter; neither has a parapet, and they seem to have been primarily breakwaters. The outer section is 155 yds. long by 12 ft. 3 in. wide on top; it is paved with large slabs, partly replaced by cement, and where the surface is broken a rubble core appears. At the end it carries one wooden and two iron pawls, but no rings. The inner section, which is built of smaller blocks than the outer, is 170 ft. long by only 4 ft. wide on top. It is secured with longitudinal iron straps and also with transverse hoops, of which latter seventeen are still in position. Its landward end, close to the cliff, is crossed by steps, and carries a mooring-ring and an iron stanchion.

Thirty-eight yards E. of this pier, there can be seen, cut in the cliff-face, two flights of step-like ledges, evidently tuskings for the squared blocks and slabs of a masonry structure. This tussing is flanked on the W. by two flights of cuttings of a different character, which seem to be stairs for access to the top of the structure; while further to the W. again there appears a horizontal row of footholds. Proof that the structure received on the tussing was in fact a breakwater – or, more probably, two successive breakwaters corresponding with the two abortive projects mentioned above – is provided by cobble foundations between the cliff-face and the first of the transverse ridges of tidal rock, as well as by scatters of large stones between the second and third and the third and fourth ridges, presumably remains of the heavy bottoming required in the deeper water.

The most interesting features of this site are not the harbour-works themselves but the access tunnel that pierces the bluff on the W. side of the bay, and the system of cellars cut in the rock alongside.<sup>5</sup> The tunnel is 183 ft. long, and wide and high enough for carts; the cellars comprise a main passage 114 ft. 3 in. long by up to 10 ft. 6 in. wide, a series of four lateral cellars measuring in respective length, with their entrance-passages, 55 ft. 6 in., 49 ft., 42 ft., and 21 ft., and a small chamber just inside the entrance. The entrance has been blocked by landslides, but access may be obtained by a passage broken out to the tunnel in 1830. The purpose of the cellars is not recorded, but they are likely to have had some function in the storage or processing of fish.

For help in the survey of this harbour I am indebted to Miss G. Vaughan Johnson.

<sup>1</sup> MS. Register of the Privy Seal, LXXV, 127 f.; H.M. General Register House.

<sup>2</sup> These earlier works, and the cliff-tunnel and rock-cut cellars associated with the eighteenth-century project, are discussed in detail in PSAS, xcvi (1963-4), 214 ff., with illustrations Pls. xii-xvii.

<sup>3</sup> Detailed specifications are given in *Reports by the Commissioners for the Herring Fishery*, Fishing 1829, 22 f.

<sup>4</sup> Somerville, A., *The Autobiography of a Working Man* (repr. 1951), 79.

<sup>5</sup> PSAS, loc. cit.

*Crail, Fife* (fig. 4b, Pl. 27). NO 611073

The early history of Crail harbour is obscured by the existence of a somewhat shadowy 'old harbour', and by the uncertainty that results therefrom in the referring of records to one site or another. There is no positive guide, for example, to the position of the 'havin' of 1498.<sup>1</sup> The expression 'cum lie harberies novis et antiquis' used in a charter of 1635<sup>2</sup> may or may not be simply a legal formula, but in 1845 the old

harbour was placed definitely in Roome Bay,<sup>3</sup> about half a mile distant on the NE., but, as no evidence has been found for harbour-construction there, the opinion is expressed below (p. 267) that this bay served only as a natural haven. On this showing, references to structure should all apply to the harbour below the town, but this raises the further difficulty that, whereas the 'building of the bulwark, port and havin' was only authorised in 1575,<sup>4</sup> two earlier documents, of 1512 and 1537 respectively, allude to a street leading 'to the port of Crail' and another, of 1540, to a 'tenement at the harbour of Crail',<sup>5</sup> while a record of a harbour in 1553 is noted below. These records make it clear that a 'new' harbour was not opened suddenly below the town in or immediately after 1575, as a substitute for an 'old' one in Roome Bay or elsewhere, but that the town-site had been in use well before that date, although perhaps not enclosed by a breakwater. This conclusion seems natural enough, as skippers might well have wished to tie up near the merchants' places of business, and even, perhaps, obtain some protection from the castle; while a record<sup>6</sup> of 1553, when a boat was damaged by a ship lying in the harbour, suggests moored craft crowded together at a quay or in an organised anchorage.

While the state of affairs in earlier times is uncertain, a substantial breakwater certainly has existed since the later sixteenth century. This is shown by an allusion to 'decayit harboris and bulwarkis' in 1583,<sup>7</sup> by a grant made in 1587 'pro sustentatione portus et lie Bulwark dicti burgi, tunc arena et ventis orientalibus devastati',<sup>8</sup> and by a further report of 'decay' in 1588.<sup>9</sup> On the other hand, the breakwater as it stands is unlikely to show very much of its original fabric, at least in recognisable form, in view of a long list of disasters and of the repairs that they constantly entailed. A particularly destructive storm was that of 1655, when Crail was one of several ports whose piers were 'dounge doune',<sup>10</sup> and much patching and rebuilding has taken place in later times. For example, in 1689 the pier, described as 'of lairge stone work built far within the sea', was 'exceedingly broken down and overturned' through storms and lack of proper upkeep, so much so that contributions were called for from some of the other burghs;<sup>11</sup> in 1707 'a great part of the pier was beat down by a storme', it being then 'old and ruinous', while the rest was ready to follow;<sup>12</sup> in 1720 the harbour as a whole was described as ruinous;<sup>13</sup> and in 1756 some serious damage seems to have been suffered<sup>14</sup> as repairs were still in progress in 1760.<sup>15</sup> Again, some work done in 1745 may have included alterations, and not simply repairs, as its object was to make the harbour 'commodious'.<sup>16</sup> In view of such facts, dates hardly can be suggested for existing structural features.

The site of the harbour is a small rocky pocket, enclosed on the E., SE. and S. by the curving breakwater-pier, on the W. by a straight pier running out towards the head of the latter but leaving an entrance in the SW. corner of the harbour, and on the N. and NE. by quays based on dry land. The enclosed space measures about 180 ft. from N. to S. by 220 ft. transversely, and amounts to little more than three-fifths of an acre. The main pier measures about 375 ft. along its curve, with a further 100 ft. of sea-wall continuing its line to landward. Its outer face is rather irregularly aligned, and shows large rough blocks, partly dry-built and secured with wooden wedges and partly pointed with cement, standing on a heavily battered and mortared base. The internal face, below the walkway, is mainly of dry-stone masonry vertically set, although with a patch of irregularly coursed horizontal work about the centre. That the pier once had wooden fenders or protection of some sort is suggested by a record of 1788<sup>17</sup> to the effect that its timber was then very rotten, and with this may be compared allusions to 'coal walling', i.e. presumably timbering along the face, in 1827 and 1829.<sup>18</sup> The parapet varies in height from 5 ft. to 10 ft., and was 12 ft. thick on top where measured, although this dimension likewise varies. It is provided with five flights of steps, one of which descends its end at the pier-head and also gives access to the sea outside the pier, while the others are recessed laterally into its face. A sixth flight has been destroyed in some reconstruction of the parapet, and the existing ones seem to belong to a fairly recent phase. The walkway is 20 ft. wide at its inner end and 9 ft. wide at narrowest; it is paved with slabs and large unshaped stones, perhaps laid or relaid in 1879,<sup>19</sup> is edged with uneven slabs, and carries eight rough stone pawls, three of which are set in stair-recesses and one in a recess of its own. The pier-head was rebuilt in 1871<sup>20</sup> but, as booms had already been installed in 1854,<sup>21</sup> some earlier reconstruction must presumably have been done to narrow the entrance suitably. It is now about 30 ft. wide, and has chases for booms which, with their crane, are present and in working order.

The West Pier originated in a plan for improvements prepared by Messrs Robert Stevenson and Sons in the earlier eighteen-twenties,<sup>22</sup> and in 1825 an estimate of £1,095, for building the pier and deepening the harbour, was accepted from John Gosman, with whom Alexander Wishart seems to have been associated.<sup>23</sup> A grant of £500 had been received from the Convention of Royal Burghs.<sup>24</sup> The work, which was finished in 1828<sup>25</sup> is 130 ft. long by 16 ft. wide over a parapet 2 ft. 6 in. thick and 4 ft. high; the parapet ends well short of the pier-head and is of a different build. The pier-head is clearly later than



the rest of the work and was no doubt added when the entrance was narrowed. Both faces of the pier show vertically set masonry, partly mortared, and smaller and neater than that of the main pier. The walkway is paved with setts, probably laid in 1866,<sup>26</sup> and carries one large and four small stone pawls, two of them in recesses in the face of the parapet.

The quay on the N. side of the basin carries a street which forms the town's harbour-frontage, and communicates, by means of a ramp at its W. end, with the sandy beach west of the West Pier. This arrangement recalls the 'path for driving seaweed from the West Shore to the new pier' for which estimates were called in 1827.<sup>27</sup> From the West Pier the quay runs E. for about 140 ft. and then turns SSE., sloping downwards for some 90 ft. along the face of the main pier and thus filling up the NE. corner of the original basin. Both sections of the quay are faced with vertically set dry-stone masonry, apart from a patch 42 ft. long of well-coursed horizontal work, which has been inserted below the splayed-out end of the Shore gate (Pl. 27b). Three very large rough stone pawls stand against the house-fronts in the W. part of the quay, and two others, less rough, respectively in its E. part and at the former N. end of the pier walkway.

Two record items bear on the date of the quay in its present form. (i) As late as 1829 a long-standing condition was still attached to the annual roup of the Customs, by which ships were forbidden to fix their ropes 'to the Upstanders or Barkels of the Pier, but upon the Poles.'<sup>28</sup> This seems to imply that the quay-face at that time contained upright timbers, which could have been pulled out by vessels moored to them, and also that, to avoid this danger, mooring-posts were set up clear of the face, like *bricole* for gondolas outside a Venetian palace. (ii) In 1833, the construction was authorised of a facing-wall, in the form of a slip, which the contractor, David Gavine, subsequently stated to be 99 ft. long by 13 ft. 4 in. high.<sup>29</sup> Though the language of the minute is not altogether clear, there can be little doubt that the structure of 1833 was the sloping E. part of the quay, particularly in view of the close correspondence of their lengths. It is thus tempting to date the quay, in its present form, to the eighteen-thirties, and on that showing the distinctive patch below the Shoregate would fall into place as a repair of 1872, when a forty-foot length of the N. side of the harbour was taken down and rebuilt, being considered unsafe.<sup>30</sup>

A ramp some 85 ft. long runs on from the foot of the down-sloping portion of the quay to the bottom of the harbour, still flanking the main pier's inner face. Comparison of the O.S. maps shows that this was built after 1856 but before 1912.

<sup>1</sup> *Acts of the Lords of Council in Civil Causes*, 1496-1501, 240.

<sup>2</sup> *RMS*, 1634-51, No. 303.

<sup>3</sup> *NSA*, ix, 962.

<sup>4</sup> *RPC*, II, 431.

<sup>5</sup> MS. Inventory of Crail Charters, H.M. General Register House (B/10/12/2), Nos. 54, 132, 140.

<sup>6</sup> Beveridge, E., *The Churchyard Memorials of Crail*, 267.

<sup>7</sup> *CRB*, I, 180.

<sup>8</sup> *RMS*, 1580-93, No. 1162.

<sup>9</sup> *CRB*, I, 239.

<sup>10</sup> *The Diary of Mr John Lamont* (Maitland Club), 95.

<sup>11</sup> *RPC*, 3rd ser., xiv, 506.

<sup>12</sup> *CRB*, IV, 405 f.

<sup>13</sup> *ibid.*, v, 236.

<sup>14</sup> Crail Burgh Council Minutes, H.M. General Register House, 5th Apl. 1756 (B/10/10/2). This source is referred to below as 'Minutes'.

<sup>15</sup> *ibid.*, 14th Apl. and 3rd Nov. 1760. The former provided for a 'crabb' to be made 'to hive up stones for the more forwarding the said work'.

<sup>16</sup> *CRB*, VI, 183.

<sup>17</sup> Minutes, 3rd Nov. 1788 (B/10/10/4).

<sup>18</sup> *ibid.*, 29th May 1827 and 17th Oct. 1829 (B/10/10/5).

<sup>19</sup> Minutes, B/10/10/8, p. 79.

<sup>20</sup> *ibid.*, p. 30.

<sup>21</sup> Memo, quoting Burgh records, by Col. J. K. Murray. For access to this memo, which is in the keeping of the Crail Preservation Trust, I am indebted to the Rev. W. J. Macintyre.

<sup>22</sup> Minutes, 2nd Mar. 1825 (B/10/10/5).

<sup>23</sup> *ibid.*, 5th Nov. and 1st Dec. 1825 and 29th May 1827.

<sup>24</sup> *ibid.*, 16th Jul. 1825.

<sup>25</sup> *ibid.*, 2nd Jun. 1828.

<sup>26</sup> *ibid.*, B/10/10/8, p. 9.

<sup>27</sup> *ibid.*, B/10/10/5, 13th Oct. 1827.

<sup>28</sup> *ibid.*, 15th May 1829. The wording as quoted here is taken from an earlier minute to the same effect.

<sup>29</sup> *ibid.*, 8th Apl. and 15th May 1833.

<sup>30</sup> *ibid.*, B/10/10/8, pp. 46 f.

### *Crail, Fife; Creeks*

Several small bays and inlets on the coast between Fife Ness and the Kenly Burn were classed as 'creeks' of Crail, in the sense of that word meaning subordinate customs stations. The Burgh Council minutes of the later eighteenth century regularly record the rouping of their customs, teinds and anchorages. The sites thus mentioned from time to time are as follows.

*Cambo Sands* (NO 6012). No remains.

*Fife Ness.* See p. 241.

*Fluckdub* (NO 626106). A landing-place for summer herring. Boulders and broken rock have been cleared away from the beach.<sup>1</sup>

*Kingsbarns.* See p. 246.

*Old Haiks* (NO 611113). A landing-place for summer herring. No remains.<sup>1</sup>

*Putiken Water.* This name was applied to the Kenly Burn, which marked the N. boundary of the area, extending from the River Leven, in which Crail claimed the right to 'pack and peil herring'.<sup>2</sup> The burn-mouth contains many landing-places suitable for small boats, and just east of the E. horn of the estuary (NO 585143) there is a sandy inlet still used as a salmon fishery. An iron ring may be seen here, let into a ridge of rock.

*Randerston.* Probably the same as Old Haiks above. In 1616 Crail was at issue with the laird of Newhall over duties on fish 'at the port of Randerston',<sup>3</sup> and in 1699 was again asserting its rights.<sup>4</sup>

<sup>1</sup> For these observations and much other local information I am indebted to the Rev. W. J. Macintyre.

<sup>3</sup> *ibid.*, No. 290.

<sup>2</sup> Ms. Inventory of Crail Charters, H.M. General Register House (B/10/12/2), No. 468.

<sup>4</sup> *ibid.*, No. 468.

#### *Cramond, Midlothian.* NT 189770-187765

The estuary of the River Almond, like that of the Esk, is now blocked up by silt, and the natural harbour formed by the river-mouth may in consequence be used only by the lightest craft. Formerly, however, the place was in regular use, and may even have served the Romans seeing that the supposed remains of a Roman 'mole', suggesting a 'Dock for small Ships', were recorded, rightly or wrongly, at the beginning of the eighteenth century.<sup>1</sup> The proximity of the church and the tower-house point to the existence of a medieval settlement, perhaps largely, as later, of fishermen;<sup>2</sup> in 1335 the governor of Edinburgh Castle requisitioned boats from Cramond,<sup>3</sup> and in 1565 it had to be watched for disaffected persons crossing the Firth.<sup>4</sup> In the eighteenth and nineteenth centuries the lowermost reach was navigated up to the weir at Cockle Mill, the depth at springs being up to 16 ft.<sup>5</sup> The harbour construction now visible consists of a quay on the right bank, with revetment extending upstream from it as far as Cockle Mill, and a ramp descending seawards along the quay-face. A stretch of the quay-face, about 250 ft. long, which shows large, roughly squared and poorly coursed blocks, is evidently older than the rest, but is unlikely to antedate the purchase and development of the mill by Carron Company in 1759.<sup>6</sup> A plan of 1786<sup>7</sup> marks a small pier or jetty but no quay, and also indicates that the small inlet, resembling a dock, now seen just below Cockle Mill was originally the outlet of a tail-race.

<sup>1</sup> Sibbald, R., *Historical Inquiries concerning the Roman Monuments, etc.*, 33.

<sup>2</sup> Maclean, C. M. (ed.), *Cramond*, 24.

<sup>3</sup> *Cal. of Docs.*, III, 352.

<sup>4</sup> *RPC*, I, 381.

<sup>5</sup> *NSA*, I, 594.

<sup>6</sup> Skinner, B. C., 'The Cramond Iron Works', University of Edinburgh Dept. of Adult Education, etc., duplicated pamphlet (1965), *passim*.

<sup>7</sup> By Johnston, T. and MacQueen, R., H.M. General Register House (R.H.P. 2).

#### *Crombie Point, Fife* (fig. 4c). NT 301845

In 1603, Robert Colville of Cleish obtained the right to build 'lie bulwarkis, portis et havannis' between high- and low-water marks on the lands lying E. of the Torry and W. of the Ironmill Burns. He was further authorised to charge dues, including 'anchoragia et lie hevinsilver', and to apply them 'pro sustentatione dict. propugnaculorum et portuum', with the additional concession that a single sasine should cover everything, payable 'apud portum lie Quailheavin'.<sup>1</sup> The identification of this place is not completely certain, as Blaeu, the only authority for its position, marks it on one plate at Crombie Point, and on another in Ironmill Bay,<sup>2</sup> but either would agree with the charter. No record has been found to show that this Colville laird ever actually built any breakwaters, ports or havens as the charter envisaged, and in fact a local author states, though without quoting his source, that Crombie became important only in the middle of the eighteenth century, when Robert Ayton Colville built the pier as a substitute for the 'Auld Pier' at Torryburn (q.v.).<sup>3</sup> However this may be, by 1775, at latest, a pier of unusual length had certainly been built on this site, carrying a railway from Torryburn,<sup>4</sup> and there need be no doubt that this was the same as the very long pier now existing. In describing the pier as 'small' in 1843, the writer in the *New Statistical Account*<sup>5</sup> must be supposed to have had in mind the part of it at which the ships were actually worked, and to have regarded the rest as a kind of elevated causeway.

The pier, whatever its history, runs out south-westwards from the shore across a wide zone of tidal rocks and mud, the rocks being largely flattish and rising little above the level of the mud. It was probably given its remarkable length, of some 920 ft., to bring its head as far to seaward as possible, where the deeper water could be reached. The landward end is of the same build as a sea-wall which runs just above high-water mark, and the first 165 ft. of its length are on what is now dry land. From high-water mark it continues straight for a further 355 ft., its breadth, where the top is intact, being 12 ft. Beyond this point it diverges slightly southwards, and at 825 ft. develops a definite south-eastward angle of some 30°, on which line it continues to the end. The divergence seems to represent a second phase of construction, as it has been effected by adding a massive facing-wall to the E. side, the dressed stones of the original face appearing within the core and being traceable, where the upper surface has vanished, for some 70 ft. This arrangement is accompanied by some increase in the breadth of the pier, but measurements – e.g. 23 ft. where the original face disappears – are unreliable owing to the ruinous state of the top and faces. The faces are of large squared blocks in courses, the core being of undressed material and the top unpaved. The whole structure is much ruined, but intact parts stand up to 9 ft. in height. About 140 ft. short of the angle, on the E. side, some steps of a stair are tumbled in the debris, and another stair is shown on the O.S. map as mounting the terminal portion. Heavy iron mooring-rings occur in places, and the stump of a wooden post near the end.

The outer end of the pier partly encloses, and protects from the W. and SW., a small tidal pocket which is slightly deeper than the mud, sands and flat-topped rocks to landward. Some of the rocks on the W. side of this area show comparatively unweathered fractures, as if their faces had been quarried back to enlarge the anchorage.

<sup>1</sup> *RMS*, 1593-1608, No. 1402. The name recurs in *RPC*, vi, 373, of 1602.

<sup>2</sup> 'Fifae Pars Occidentalis' and 'Lothian and Linlithgo' in *Theatrum Orbis Terrarum*, v.

<sup>3</sup> Westwood, J., *That Portion of Scotland, etc.*, 142, 196.

<sup>4</sup> Ainslie's map of Fife and Kinross.

<sup>5</sup> Vol. ix, 736.

#### *Cuffabout*

See Bridgeness.

#### *Culross, Fife* (fig. 5a, Pl. 30 b, c). NT 983857

The *Herbertian Life of St Kentigern* brings the saint's mother to Culross at the end of her miraculous voyage, and on Professor Jackson's dating of the sources<sup>1</sup> this fact should indicate that the place was known as a seaport in the eleventh century, if not in the ninth or earlier. Historical records mention it in the later sixteenth century,<sup>2</sup> and the usual references to grants for the repair of the harbour occur periodically in the seventeenth and eighteenth centuries.<sup>3</sup> No record, however, establishes when harbour-works first appeared, or of what they consisted, with the result that the history of the surviving structures remains largely obscure.

Culross originally possessed a natural tidal anchorage, partially protected on the SE. by the Ailie Rocks<sup>4</sup> and extending inland from 150 ft. to 200 ft. further than the artificial high-water mark now fixed by the railway embankment. In fact, the 25-in. O.S. map of 1861 shows high-water mark as only 140 ft. from the Town House, while the significant name 'Sand Haven' appears in the intervening space. This anchorage has been improved by the construction of two piers, named respectively the 'Long Pier' and the 'New Pier' on the 6-in. map of 1866, with an elevated wooden walkway ('Platform') connecting them (Pl. 30).

The Long Pier is sited so as to protect the anchorage from the W. Its alignment is irregular, and it shows several phases of construction or repair (Pl. 30b). Its seaward end is separated from the Ailie Rocks by about 250 ft. of tidal sand and mud, and is distant about 640 ft. from high-water mark as it was before the building of the embankment. It was evidently in existence in 1689, when the security of Culross harbour was contrasted with the dangers of the open roadstead at Valleyfield,<sup>5</sup> and may well, of course, be much older in view of the records of earlier repairs; although this need not necessarily follow as any of the repairs might have been made to land-based quays, now vanished. This dating is not in conflict with the record of a harbour having been built, presumably in the period 1710-20, by Lord Cochrane,<sup>6</sup> as 'Cochrane Haven' is marked in the E. part of the town on O.S. Plan NT 9885, along with 'Blackadder Haven' and 'The Haven', while a 'once-busy harbour' in the same quarter is mentioned by a recent writer.<sup>7</sup> No remains of any of these works are visible today, much ground having been reclaimed from the fore-shore.

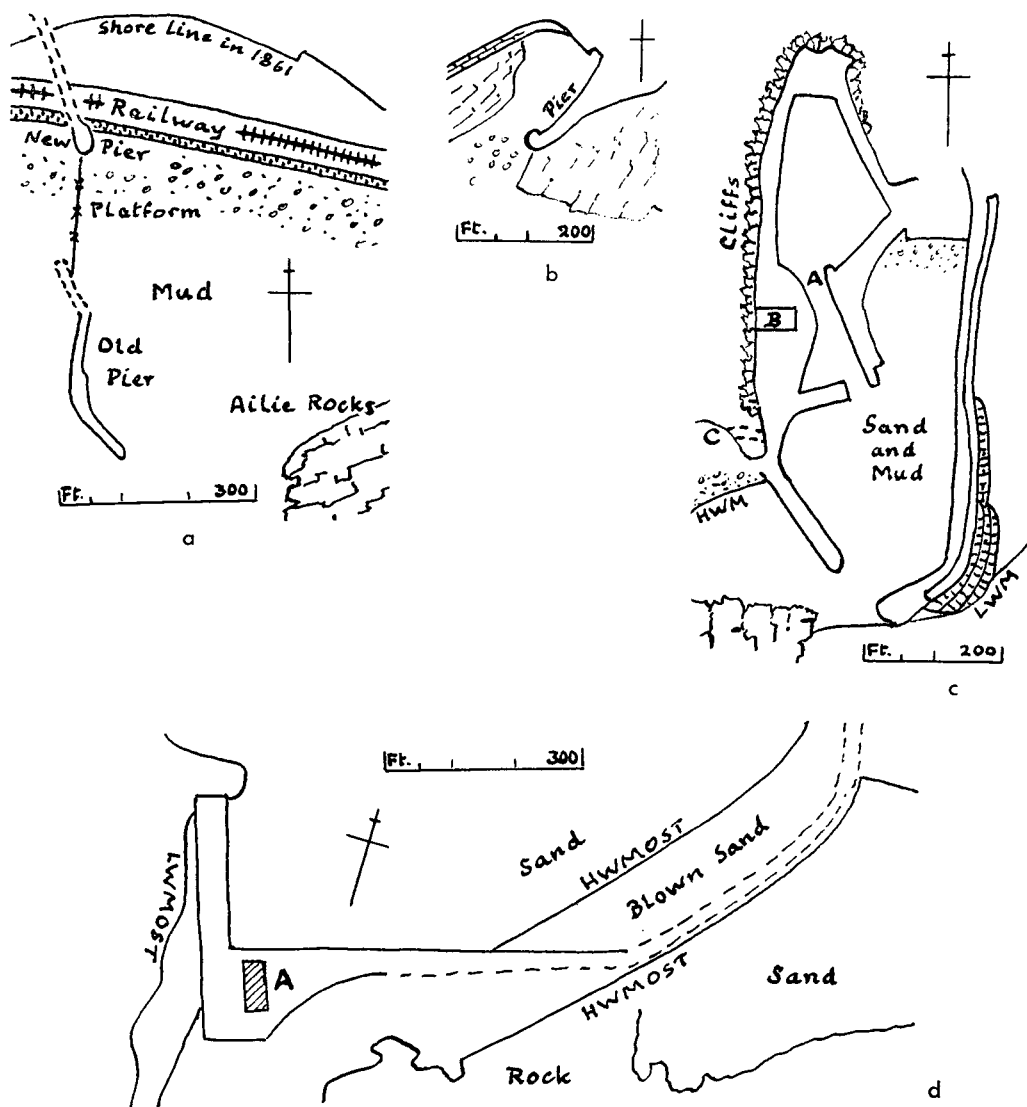


FIG. 5. *a* Culross (ruined portion of Old Pier shown by broken line), *b* Donibristle, New Harbour, *c* Dysart, West Harbour (A, sluice; (B) boiling-house; C, tunnel), *d* Elie (A, granary).

From the seaward end, which is rounded, the pier runs on a slightly curving alignment, concaved towards the E., for about 230 ft., being faced for the outermost 150 ft. or so with large, roughly squared blocks, set in courses and tailed into a rubble core; it stands to a greatest height of 7 ft. and varies in breadth from about 15 ft. to 25 ft., the widening having perhaps been intended to permit vehicles to pass or turn. The surface of this part is paved with very large setts and holds the stumps of a few wooden posts; the similarity of these setts to those on the New Pier (see below) suggests that they may represent a fairly recent repair. Otherwise the pier is ruinous, and is said to have become so after the failure of the 9th Earl of Dundonald's chemical project in the 1790s.<sup>8</sup> The northernmost portion, about 80 ft. long, evidently has been rebuilt, as it is faced with split, unsquared stones set vertically, in the style attributed elsewhere to the beginning of the nineteenth century, and its landward end is finished with a well-built transverse face, partly mortared. At this point the work is aligned on the head of the New Pier, distant about 240 ft.,

and originally it may have run all the way to the land as a strip of debris produces its line for about another 40 ft. and thereafter a few footings, as if of an E. face, can be seen in the piles of blocks that serve as bases for some of the 'platform' uprights (Pl. 30c). More noticeable, however, are the remains of a section of the pier, nearly 100 ft. long, which strikes off north-westwards from the end of the rebuilt work; this is totally ruined, no part of it standing more than two or three courses in height, but its breadth was 18 ft. and it was of the same unsquared material as the adjoining rebuilt section. It ends in a collection of debris about 170 ft. from the head of the New Pier, or 340 ft. from the old high-water mark; it may never have been intended to reach dry land, but perhaps rather to deflect a tidal current and obviate silting. It is interesting, in view of this possibility, to find a local author writing in 1888 that the Long Pier was not originally connected with the land, and could only be reached at low water or by wading,<sup>9</sup> while in 1844 it had been said that landing was only possible at high water<sup>10</sup> – i.e., presumably, when a boat could be actually beached. On this showing, which does not accord with the presence of the supposed footings under the 'platform' (see above), the Long Pier would have been a detached breakwater, like the one at Brucehaven (q.v.).

The New Pier emerges from under the railway embankment, only its terminal 60 ft. now being visible. The remainder is covered by, or barely shows through the surface of, the made ground inland of the railway, but the map of 1861 gives it a length of some 230 ft. It is 14 ft. wide at the embankment but expands to a club-shaped terminal, the outline of which is apt to be concealed by the shifting sand of the beach. The pier is badly wasted, but enough survives to show that it contains structures of two phases, the upper work being simply laid on top of the lower and not bonded into it. In both phases use is made of very large dry-stone blocks, brought to courses and carefully shaped to the curve of the rounded end, but the lower courses are distinguished by stugging or horizontal droving, while the upper are simply hammer-dressed. The top of the lower work, which is paved with large setts, stands about 3 ft. above the level of the beach at the end of the pier, but traces of a stair recessed into its E. side suggest that the height must originally have been greater – as is natural in view of the modifications of level which must have followed the building of the railway-embankment. The stair rises N. along the side of the pier, three of the four exposed steps being in the lower structure and one in the upper. The recess has a rounded arris. At the end of the pier the upper work is ruinous, but further to landward, where it is still intact, its surface is at least 4 ft. higher than that of the lower, and its level, in fact, corresponds more or less with that of the Long Pier; while the 'platform', most of the uprights of which still stand, evidently ran at approximately the same height. The purpose of the 'platform' thus seems to have been to carry traffic between the Long Pier and the New Pier in the latter's final phase.

The observed sequence of construction may perhaps be explained as follows. If the epithet 'new' he taken as applying to the New Pier's upper level, the testimony of Roy's map, which marks a pier in this position, would carry back the lower level to a date at least as early as the middle of the eighteenth century. If the landward connection of the Long Pier was actually wrecked, as suggested above, at or before this time, a reason for new construction would have been provided. With the addition of the upper level could then be associated the record that a new pier had been built 'a good many years' before 1888, and that it had been 'joined to the outer pier by a long jetty',<sup>11</sup> the probable date for this work apparently falling between 1844 and 1861. The harbour-works might thus have reached their present shape after a second disaster had struck the Long Pier, damaging its already truncated landward end – part of the damage being repaired in the vertical technique and the rest abandoned, while the 'platform' was erected to link it with a suitably heightened New Pier.

<sup>1</sup> *Studies in the Early British Church*, ed. Chadwick, N. K., 286.

<sup>2</sup> *RPC*, I, 381; *CRB*, I, 265.

<sup>3</sup> *CRB*, II, 162, 180, 418; III, 48, 67, 90, 271, 296; v, 404, 476, 491, 535; VII, 197, 259.

<sup>4</sup> Illustration in Slezer, *Theatrum Scotiae*, Pl. 47.

<sup>5</sup> *RPC*, 3rd ser., XIV, 392.

<sup>6</sup> Loch, D., *A Tour through Most of the Trading Towns, etc.*, 18. The Lord Cochrane in question was

evidently the 4th Earl of Dundonald, who died in 1720.

<sup>7</sup> Cunningham, A. S., *Culross Past and Present*, 101.

<sup>8</sup> *Imperial Gazetteer of Scotland*, ed. Wilson, J. W., I, 335.

<sup>9</sup> Beveridge, D., *Between the Ochils and the Forth*, 195.

<sup>10</sup> *The Topographical, Statistical and Historical Gazetteer of Scotland* (Ferguson, Glasgow), I, 280.

<sup>11</sup> Beveridge, D., loc. cit.

*Dalgety, Fife.* NS 170837

The 6-in. O.S. map surveyed in 1855 marks 'Old Pier' just W. of the old parish church of Dalgety, indicating no structure but only a strip of loose stones or boulders running down from high-water mark

across the tidal flats. This feature still exists, and in its seaward portion there can be seen a row of large laid stones, evidently the footings of the E. face of a pier or jetty. About 120 yds, below high-water mark these run into some transverse footings which suggest a pier-head about 30 ft. wide; but the remains are too scanty to reveal a definite plan, and their explanation is made more difficult by some further transverse footings about 60 ft. further out. As nothing is marked at this site on an estate-map of 1768,<sup>1</sup> one must suppose either that the pier was built after that date, and became ruinous or was demolished before 1855, or that it was a good deal older, and had already gone out of use by 1768.

<sup>1</sup> See under Braefoot Bay.

*Devon River Estuary, Clackmannanshire.* NS 849935

Some remains of timber revetment may be seen in the banks of the lowermost reach of the River Devon, but nothing to suggest the 'pier' that existed in 1793.<sup>1</sup> The earthwork on the left bank seems to have carried some structure, presumably industrial, but in fairly recent years.

<sup>1</sup> *Stat. Acct.*, VIII, 599.

*Donibristle, Fife; New Harbour* (fig. 5b). NT 163829

This harbour is a tidal pocket at the NE. end of the bay that lies immediately NE. of Donibristle Bay, and is formed by a breakwater-pier projecting, on an axis rather S. of W., from the bay's NE. horn. Measured along its outer face, which continues the line of the littoral rocks, the pier is some 90 ft. long; internally the landward limit of its structure is difficult to define as its inner face coalesces with a revetting wall which runs all round the bay, protecting from erosion the policy ground behind. The masonry is of large dry-stone blocks, well squared and coursed, with a core of rubble and gravel; the seaward face is protected by a heavily battered apron of smallish material, not bonded into the pier and probably an addition. At its head the pier turns slightly inwards in a short, broad hook, its breadth just behind the head being 18 ft.; the pier-head stands up to a height of 13 ft. 6 in., and the inner face, further to landward, to 10 ft. On the inner face there are two flights of steps, 4 ft. and 4 ft. 6 in. wide respectively, and neither going below the level of a grounded boat's gunwale. The top of the pier is ruinous and encumbered with debris.

A pier is marked in this position on an estate-map of 1768,<sup>1</sup> but that this structure, in its present form, goes back to the mid-eighteenth century cannot be taken for granted.

<sup>1</sup> See under Braefoot Bay.

*Donibristle, Fife; Old Harbour.* NT 161829

The point at the NE. end of Donibristle Bay consists of parallel rock-ridges striking seawards, with linear hollows between them formed by differential erosion. On one of these ridges, no doubt cut down to receive it, a pier or jetty has been built of large dry-stone blocks, much less regularly dressed than those of the neighbouring New Harbour (q.v.) and poorly coursed. At one point the W. face stands to a height of 7 ft. 6 in. Part of the top is still intact, and is roughly paved with smallish unshaped blocks; where it disappears under turf at the landward end it shows traces of gravel and cobbling. Many of the marginal slabs, still in place along the W. side, have been crudely shaped but not regularly squared, and are notable for their large size; a sample was found to measure 5 ft. by 3 ft. by 1 ft. 6 in. The work has been at least 140 ft. long, measured along the slight curve that its lower end makes towards the E., and its breadth decreases seawards from about 15 ft. to 10 ft. The hollow that flanks it on the W. has been improved to make it suitable for boats. A shallow recess, resembling the end of a berth, appears in the revetted bank at the top of the beach, but this is quite unlikely to be as old as the jetty, as the revetment is associated with the policy ground behind.

The jetty is marked on an estate-map of 1768,<sup>1</sup> and it should probably be thought of as contemporary with Donibristle House, built about 1720.<sup>2</sup>

<sup>1</sup> See under Braefoot Bay.

<sup>2</sup> RCAM, *Inventory of Fife, Kinross and Clackmannan*, 98.

*Dunbar*,<sup>1</sup> *East Lothian.* NT 681792

The Old Harbour of Dunbar had its origin in a natural tidal anchorage, partially sheltered from the N. by Lamer Island and from the W. by the Castle promontory but otherwise much exposed. The most important item in the existing complex of works is the East Pier, a long, slightly curving structure which covers the E. side of the anchorage and finishes S. of the island. An access channel, now disused, passes

between the pier-head and the island. From the pier-head another pier returns south-westwards, flanking the channel, the entrance from the channel to the harbour proper lying between the end of the returned pier and a quay forming part of the W. side of the harbour. From the entrance quays are continuous along the W. and S. sides of the harbour, the enclosed area being about 565 ft. long and varying in breadth from 58 ft. in a smallish inner basin to 175 ft. in the larger northern portion. The access-channel forms an outer harbour, known as Broad Haven, which is flanked on the north by a causeway leading to the island. This causeway likewise separates Broad Haven from the Victoria Harbour, and entry to the Old Harbour is now obtained through the Victoria Harbour and an opening in the causeway, as the seaward end of Broad Haven has been blocked.

The anchorage may well have been in use for a very long time, and its name, Lamerhaven, occurs in a charter of 1555, some twenty years before the building of the harbour began. This may be dated to 1574 or shortly afterwards, as the burgh was authorised in that year to raise money for the purpose and repairs are already on record before the end of the sixteenth century. These repairs, and others noted between 1600 and 1613, dispose of the commonly-quoted error that the East Pier was first built by Cromwell's government, and it is clear that a breakwater in the position of the existing work would have been required from the outset for protection from the NE. The earliest breakwater was evidently in part of timber, as 'the bulwarke of the herbrie and the timber thair of' was pulled down during the Cromwellian occupation of the town.<sup>2</sup> A causeway to the island is also likely to have been one of the earliest works, for the sake of protection from the W. The rest of the works were added at various dates from 1717 onwards.

The East Pier is about 920 ft. long, including a stretch of sea-wall at its landward end, and shows many varieties of masonry including beach-boulders, large, roughly dressed blocks, and slabs set obliquely or vertically. The boulders, which tend to appear in the lowest courses, may well belong to the oldest phase of construction, while the other variations no doubt represent repairs following storm-damage. One such disaster was caused by the great gale of 1655, when a grant for repairs was obtained from Cromwell's government; another collapse, which occurred in 1906, was probably responsible for the vertical and oblique work now seen in the seaward portion. The pier is up to about 16 ft. wide on top, and for much of its length has two walkways, at different levels, a fact which may suggest that its height was raised at some time. The parapet is up to 5 ft. 6 in. high. At one point a flight of steps, formed of large slabs protruding from the quay-face, goes down to the bottom of the harbour. Three pawls, two of wood and one of iron, are set in recesses in the wall-face that rises from the lower walkway; they are said locally to have served for warping ships round in the N. basin.

The pier-head was originally a roundel, but was altered after a disaster in 1879. The pier that returns from it to the harbour-entrance is 170 ft. long by 16 ft. 6 in. wide at the top over a parapet 2 ft. 3 in. high and thick. Its masonry differs greatly from that of the East Pier, being of squared and well-coursed blocks. At the end there stands a massive pawl made out of the butt of a tree, and three other pawls have been removed. This pier was probably built in 1717, and is in any case shown on Roy's map of Scotland (1747-55). The quays on the W. side of the harbour and at its S. end were also begun at this date, the Burgh records being full of information about the progress and cost of the work, which included the cutting back of the rock on which the quays were founded to increase the harbour's area, and also the widening of Broad Haven. The early quays extended from the S. end as far as the old storehouse known as Spott's Girdel, itself on record in 1719. Later improvements include the Coal Wharf, a jetty built in 1761 along the inner face of the East Pier, a dry dock, of 1785, which was later filled up, and the 'Holey' (hollow) Pier, of the same date, just north of Spott's Girdel, so called because its front was originally recessed to give space in which ships could be warped round. The pawls on these quays include a heavy tree-butt at the S. end, three old guns set muzzle-upwards and filled with cement, and a piece of iron pipe; there are also a number of heavy mooring-rings.

The harbour-entrance has had a rather complicated history, on account of the measures taken to equip it with booms. In summary, it seems that the question of booms was raised in 1804, that about 1827 a 'boom pier' was built, extending inwards from the end of the returned pier (see above) to opposite Spott's Girdel, and booms were established there, that this pier was ruined by a storm before 1842, only a fragment surviving in the short work with steps at the end that now projects southwards from the end of the returned pier, that a position for the booms was then tried in the entrance itself and found unsatisfactory, and that in 1888 the existing concrete spur was built out obliquely from the fragment of the 'boom pier', and the booms installed in a channel thus reduced from 40 ft. to 30 ft. in breadth. To provide attachment for the booms on the opposite side the face of the Holey Pier was built up flush. These booms

remained in use until fairly recent years, as did also a set in the access to Broad Haven from the Victoria Harbour.

The Battery, on Lamer Island, was built after an American ship had attempted to raid the harbour in 1781. It is a red-sandstone structure with an open gun-platform, embrasures for sixteen guns, and a covered magazine and quarters for the garrison.

<sup>1</sup> This account is a resumé of the main points of a recent and much fuller study (*PSAS*, xcix, 173 ff.) to which reference should be made for sources. The Victoria Harbour is omitted, as being outside the scope of an archaeological project.

<sup>2</sup> Dunbar Burgh Records document quoted in *Transactions of the East Lothian . . . Society*, xi, 11.

*Dunmore, Stirlingshire.* NS 893895

A harbour is on record at Dunmore in 1792,<sup>1</sup> and Roy (1747–55) marks a channel as leading through the belt of tidal mud towards a point which he names 'Elphinstone Pans'. It is thus probable that some trade in salt was carried on from the small inlet north-east of the village, although the only installation at the place today is a modern landing-stair suitable for serving small boats.

No record has been found of any ferry which may have run between Dunmore and Ferryton, on the Clackmannanshire shore opposite (q.v.).

<sup>1</sup> *Stat. Acct.*, III, 489.

*Dysart, Fife; Old Harbour.* 303928

Dysart is said to have existed as a port at least as early as 1450,<sup>1</sup> and its origin may no doubt go back considerably further. A 'west havyn' is on record in 1464,<sup>2</sup> and reasons are given below (p. 236) for regarding this haven as the forerunner of the existing West Harbour (q.v.), although no breakwater seems to have been built on the western site before the early seventeenth century. An 'old port', however, is mentioned in 1534<sup>3</sup> in a passage which implies that it lay somewhere E. of the West Haven, and while a 'port' need not necessarily possess built harbour-works, the fact that this one was 'dekayitt' in 1588<sup>4</sup> clearly points to something more than an unimproved anchorage. In 1566 the Town Council agreed to build a pier at their 'port and haven',<sup>5</sup> but it does not appear which of the two harbours, the 'old' or the 'west', was in question, or whether the decision was ever carried out in fact.

Tradition places the Old Harbour on the tidal beach below the present NE. end of The Shore, where significant remains exist now known as 'the Jetty'. The 6-inch O.S. map surveyed in 1854 marks the Jetty, with a fine double line, as descending the beach for some 300 ft. and ending about 150 ft. west of the tidal reef called Partan Craig. The site is thus some 800 ft. NE. of the West Harbour breakwater. The remains, as seen when visited,<sup>6</sup> comprise an outcrop of rock with a cut-back face and a complex of further cuttings at its lower end. The outcrop emerges from the shingle a short distance below high-water mark, and runs straight down the beach for about 90 ft. with its surface dipping north-eastwards. Where it first appears it is only a few inches high, and it is interrupted here and there by drifts of overlying shingle as the foreshore has filled up considerably in recent years with debris washed in from the neighbouring Frances Colliery. Its lower end, however, which reaches to the low-tide mark of normal, although not of exceptional, low tides, stands as an irregular lump about 3 ft. 6 in. high above the beach. The W. side of the outcrop has been cut throughout its length to a vertical face, and the terminal lump shows angular recesses presumably intended to hold timbers or masonry structure, together with five post-holes. These last have been much eroded by 'pot-hole' action, but one still shows traces of an original rectangular shape; the largest, worn oval, measures 1 ft. 10 in. by 1 ft. 7 in. and is more than 2 ft. deep. Four of the holes are arranged in a straight line, 12 ft. long over all. Close by, four smaller holes, only 2 in. in diameter, still hold the butt ends of wooden rods, now worn flush with the rock.

Below ordinary low-water mark there are further remains, under water at the time of the writer's visit, for the following details of which, as also for much other local information, the writer is indebted to Mr Albert Kidd. (i) A strip, 63 ft. long by 11 ft. wide, of well-cut blocks or thick flag-stones, set in the sand on a slightly more easterly alignment than the cut face of the outcrop. Some of the slabs are socketed to receive rectangular keys, like those in the low-tide landing at Pettycur (q.v.). (ii) Another strip of stone blocks, separated from the last by a gap of 17 ft., but continuing in line with it to Partan Craig. This strip is 35 ft. long by 9 ft. wide; the blocks, which are not socketed, measure up to 4 ft. in length by 1 ft. 4 in. in width and thickness, and resemble some in the base of the West Harbour breakwater which are locally believed to have come from the Old Harbour.



An explanation for these works below low-water mark is suggested by the low-water landings at Pettycur and West Wemyss, namely that they formed a causeway to Partan Craig, which dries out more or less at all lower-tide levels. Anyone using Partan Craig as a landing-place, except at the lowest tides, would have had to wade in crossing over to the beach, just as was done at Culross,<sup>7</sup> and wading would have been less hazardous with a solid underwater footway. To explain the Jetty, however, is a good deal more difficult, and to do so it is necessary to resume consideration of the Old Harbour, and more particularly of the evidence bearing on its position. Its basin or quays are unlikely to have been at the level where the Jetty ends, i.e. at the bottom of the beach, and this for several reasons. (i) The natural place for the quays of a trading burgh is along the sea-front of the town, and in the case of Dysart this would mean the roadway known as The Shore. This point is reinforced by the similarity of the surviving old houses along The Shore to their counterparts in other local ports, one of them, moreover, bearing the significant name of the 'Tidewaiter's House'. (ii) A Charter of 1534<sup>8</sup> alludes to 'terre pecia apud os seu introitum ejusdem' (i.e. veteris portus), and this language inescapably implies the existence of a basin indenting the foreshore in such a way that its entrance was close to the parcel of land in question. To interpret 'os seu introitum' as the land entrance of an enclosed dock-side area would be difficult enough in any case, and here seems to be ruled out by the local topography. (iii) Although the Old Harbour was so badly silted up by 1631 that 'no small barke darre hazard to anker there',<sup>9</sup> high-water mark still reached The Shore when the O.S. map was made in 1854. From all this it seems to follow that the pre-1631 harbour was so placed as to impinge on part, at least, of the belt of what is now dry land lying to seaward of The Shore. As the end of the Jetty is distant some 350 ft. from the fronts of the houses on The Shore, there would seem to have been ample room in this belt for a basin at least as big as the one at Craill. On this showing the Jetty might be thought of either as the rock foundation of some extended harbour-work or, perhaps more probably, a natural pier contrived on the surface of the outcrop as at Donibristle Old Harbour or Pittenweem Boat-harbour (q.v.). The post-holes and cuttings would then fall into place as footings for some pier-head structure – possibly a stage, as suggested for the post-holes at Castleton, or a beacon, as at Laigh Craig, Torryburn (q.v.).

<sup>1</sup> *NSA*, ix, 130.

<sup>2</sup> *RMS*, 1424-1513, No. 782

<sup>3</sup> *ibid.*, 1513-46, No. 1368.

<sup>4</sup> *CRB*, i, 293

<sup>5</sup> Muir, W., *Notices from the Local Records of Dysart*, 33.

<sup>6</sup> The extent of the visible remains appears to vary as the shingle is moved about by the action of the waves.

<sup>7</sup> Beveridge, D., *Between the Ochils and the Forth*, 195.

<sup>8</sup> *RMS*, 1513-46, No. 1368.

<sup>9</sup> *RPC*, 2nd ser., iv, 386.

#### *Dysart, Fife; West Harbour* (fig. 5c, Pl. 28b). NT 302928

Dysart Harbour, now abandoned, dates from the early years of the seventeenth century. The Old Harbour (q.v.) having silted up to a dangerous extent, the Town Council desired to build a 'commodious and sure harberie' and had 'found out a platt at the west end of thair toun meit for that purpose', but in 1631 lacked means to finish the work, which seems to have been in progress since at least 1615,<sup>1</sup> and petitioned the Privy Council for support in an appeal for help.<sup>2</sup> It is true that a West Haven, later defined as 'apud occidentalem litem ville de Dysert', had been in use at least as early as 1464,<sup>3</sup> but the two records do not conflict as the W. site would have enjoyed some natural shelter and could consequently have served as a natural anchorage even while unimproved. Nor need the issue be confused by the fact that an 'East Pier' is said to have been in danger of falling, and to have needed repair, about 1640,<sup>4</sup> as this description fits the E. component of the West Harbour; nor is it even impossible that the author was alluding confusedly to the work done in and before 1631. In 1703 the East Pier was described as 'a strong Bulwark of Stone'.<sup>5</sup> The East and West Piers are shown on Roy's and Ainslie's maps (1750, 1775) substantially as they stand today, but repairs to piers and harbour are mentioned frequently in the eighteenth and nineteenth centuries,<sup>6</sup> and the patching and rebuilding that they called for must have modified the structures' outward appearance considerably. Especially bad damage was evidently suffered in 1705, 1724, 1803, 1837-8 and 1843, in the last year about 100 ft. of the point of the East Pier having been washed away. The wet dock, formed from what had previously been a quarry, was opened in 1831,<sup>7</sup> and most of the works now seen inside the enclosure of the main piers seem to have followed on this development.

The harbour is protected on the W. by a rocky bluff, the E. side of which has been quarried to a high, vertical face; the S. end has also been pierced by a short tunnel, 6 ft. 4 in. high by 7 ft. 4 in. wide, to give access to the harbour from the west by land. The opposite side is enclosed by the East Pier, aligned mainly from N. to S., but deflected south-westwards at its head. The entrance is at the S. end, between the

head of the East Pier and a shorter W. pier which projects south-eastwards towards it. From its junction with the Shore Road, the East Pier runs virtually straight for about 580 ft., the deflected pier-head measuring an additional 120 ft. On its inner side it carries a quay, generally up to about 18 ft. wide but at one point reaching 24 ft., with a parapet up to 12 ft. high; from about the middle of the straight stretch to beyond the junction with the pier-head, a distance of some 340 ft., this parapet has been raised by the addition of an upper parapet up to 6 ft. high, flush with the face below it on the E., but leaving a very narrow walkway on the W. This addition must have been made before 1835, as it is marked on Sang's plan of that year.<sup>8</sup> The outer face of the pier clearly reflects numerous repairs, including the re-use on a concrete foundation of blocks said by a local informant to have been taken from the Old Pier, but the irregular alignment of the N. portion of the face is presumably an old, or even an original, feature. Vertically-set blocks appear in both faces, being particularly conspicuous on the W., while the pier-head and the adjoining part of the pier itself show, above the level of the quay, neat rusticated work of the early nineteenth century, no doubt representing a repair after one of the disasters that occurred at that time. Some of the pitching in the seaward footings of the pier is evidently even more recent, having been added since the Ordnance survey of 1895. Of the ten pawls on the quay, one, as at Dunbar, is an old gun set muzzle downwards; others are either of cast iron, with flanged tops, or are sections of iron piping filled with cement. Two stand in shallow recesses cut back into the face of the parapet.

The W. pier, which forms the other side of the harbour entrance, itself 67 ft. wide, is about 190 ft. long by up to 30 ft. wide. It is better preserved than the East Pier, and is mainly constructed of large blocks set vertically in courses, some of them being shaped to fit together. The pawls, of cast iron with flanged tops, are of the same pattern as those of the East Pier. From the landward end of the pier, a quay-face of similar construction, now heavily banked up with shingle, runs off slightly E. of N. to form the W. side of an open-ended basin bounded on the N. by a pier projecting eastwards into the harbour. This pier is about 70 ft. long, and ends on a large rock which has been suitably shaped; its masonry differs from that of the W. pier and the adjacent quay-face, being largely of horizontal blocks, but at least it antedates 1835 as it is marked on Sang's plan. North of this pier the quay-face continues for about another 100 ft., thereafter merging into the W. side of the entrance into the wet dock. The junction is marked by a change in the style of the masonry, as much of the facing of the dock-entrance is lightly droved. The quay varies in width from about 30 ft. to 100 ft., and is backed by the vertical quarried rock-face which stands up to about 50 ft. in height. Close to the dock-entrance it carries the shell of a building which may or may not be the 'boiling-house' for whale-blubber marked on Sang's plan, and shown by its legend to have been the subject of interdict proceedings in 1835; it stands on the same site, but is differently oriented.

The passage into the dock is flanked on the E. by a pier which extends to a point opposite the end of the pier that projects from the quay-face (see above). Its end and that of the pier opposite are both provided with chases for booms to span the space between them. Unlike the other works inside the harbour, it is not shown on Sang's plan but seems to have been built in accordance with a report made in 1838 by John Leslie, whose plan of that year<sup>9</sup> shows it with booms in place. Its W. margin contains some slabs secured with lozenge-shaped keys, which agree with a date in the early nineteenth century, and it carries three rough stone pawls and one of shaped cast iron such as are seen elsewhere in this harbour. The quay from which it projects is shown by Sang as a pier about 140 ft. long, based on dry land in the NE. sector of the harbour and forming the SE. side of the dock. The dock itself is irregularly triangular in shape, measures some 275 ft. from N. to S. by 170 ft. transversely, and is backed by the faces of the quarry in which it has been formed, or by other rising ground. Its quays are levelled up in neatly coursed masonry.

The entrance to the dock is about 35 ft. wide, and a greatly decayed pair of gates is still in position. They are mounted on wooden pintles turning in heavy iron collars, the mechanism being housed in the quay on the E., and worked by hand.<sup>10</sup> The gates are curved, so as to present a convex face towards the dock when closed; they differ materially from the original installation, as Sang's plan shows that the gate of 1835 consisted of one leaf only, fitting into a recess on the E.

<sup>1</sup> Taylor, J. W., *Some Historical Notices, etc.*, 18; Muir, W., *Notices from the local Records of Dysart*, 48.

<sup>2</sup> *RPC*, 2nd ser., iv, 386.

<sup>3</sup> *RMS*, 1424-1513, No. 782; 1609-20, No. 800.

<sup>4</sup> *NSA*, ix, 131.      <sup>5</sup> Adair, J., *Description*, 11.

<sup>6</sup> Cunningham, A. S., *Dysart: Past and Present*, 43;

*CRB*, v, 131, 148, 479; Sibbald, R., *History of Fife*, 319 n; *Tidal Harbours*, 158 f.

<sup>7</sup> Cunningham, loc. cit.

<sup>8</sup> In H.M. General Register House (R.H.P. 207).

<sup>9</sup> *Tidal Harbours*, 158 f. and plate opp. p. 164.

<sup>10</sup> Measured drawings are preserved in the Kircaldy Museum.

*Earlsferry, Fife.* NT 4899

Earlsferry has a long history, as the ferry to North Berwick was established by Duncan, Earl of Fife, before 1154.<sup>1</sup> This is mentioned in several records of the fourteenth to sixteenth centuries,<sup>2</sup> but by 1572 the traffic had fallen off and a charter of that year granted the place, with its 'heavin', to Alexander Wood, with a view to repair and reorganisation.<sup>3</sup> The town was created a Royal Burgh and free harbour in 1589,<sup>4</sup> and at some stage it acquired a pier, which is marked on Roy's map of Scotland (1747-55). This was ruinous by 1835<sup>5</sup> and by 1887 was completely buried in the sand;<sup>6</sup> it may, in fact, never have been of much value as the want of a 'proper harbour' is mentioned as a drawback in the 1870s.<sup>7</sup>

Traces suggesting an improved landing-place rather than an actual pier may be seen in a position approximating to that recorded for the pier,<sup>8</sup> i.e. immediately behind a house named Craigendarroch (483996), and accessible by the 'Cadgers' Wynd', opening between houses named Roseberie and St Leonards. A short distance below high-water mark, the SW. side of a seaward-running ridge of rock has been cut back to a straight face for a distance of 60 ft., while its NE. side also shows some signs of less regular cutting. The cuttings presumably were made to assist in bringing boats alongside the rock, and their waterworn condition suggests a considerable age. Some iron rings, however, which are fixed in the rock above them, closely resemble those on the pier at Elie, a structure of the nineteenth century. Further cuttings can be seen, near low-water mark, on the NE. side of the next rock-ridge to the SW., perhaps intended to ensure a clear entry to the cove between the two ridges.

What seems to be another improved landing, again presumably intended to facilitate the beaching of boats, exists at the SW. end of the bay (481995), about 230 yds. north of the pilgrims' hospital and accessible by an opening between houses named Katherine Bank and Easter Carrick. A strip of sand has here been cleared of boulders, and these are now piled in a rickle along its NE. side.

<sup>1</sup> *Northberwic*, pp. xxix, 5.

<sup>2</sup> *Cal. of Docts.*, II, 368; IV, 461; *The Diary of Mr James Melvill* (Bannatyne Club), 167 f.

<sup>3</sup> *RMS*, 1546-80, No. 2067.

<sup>4</sup> *ibid.*, 1580-93, No. 1652.

<sup>5</sup> *Corporations*, I, 278.

<sup>6</sup> Wood, W., *The East Neuk of Fife* (1887), 196.

<sup>7</sup> *Imperial Gazetteer of Scotland*, ed. Wilson, J. M., s.v. Earlsferry.

<sup>8</sup> Wood, W., loc. cit.

*East Newport, Fife.* NO 419279

Arrangements for the ferries to Dundee, as they existed in the eighteenth and early nineteenth centuries, are described in the article on Woodhaven (q.v.). Before the building of Telford's jetty at Newport, the Newport terminal, named South Ferry by Collins and East Ferry by Roy, was formed by the small harbour in East Newport. This, like its counterpart at Woodhaven, was described in 1795 as 'very inconsiderable' and fit only for ferry-boats and sloops carrying coal and grain.<sup>1</sup> It consists today of a triangular tidal pocket opening northwards, which measures about 120 ft. across its outer end and is flanked on the E. by littoral rocks and on the W. by a ruined pier. The rocks, which must originally have included a considerable bluff, have been cut back to a straight face for at least 120 ft.; the pier, including a short stretch of cut rock-ridge at its landward end, is some 160 ft. long by 20 ft. wide and towards its head is slightly concave on the east. The rock-ridge has been squared off to a straight edge at its junction with the stonework of the pier, and a roadway 8 ft. 6 in. wide has been cut along its spine, the cut being as deep as 5 ft. 6 in. at one point. The pier now is reduced virtually to a rickle of debris, but its outline may be traced by the footings of its outer faces, which consist mainly of large horizontal blocks, although some vertical ones appear towards the outer end. A sample was found to measure 4 ft. 6 in. by 2 ft. 3 in. by 1 ft. 6 in. The core seems to contain some large laid slabs. The NW. corner of the outer end is rounded. The only surviving fittings are an iron ring by the rock-cut roadway, some iron pegs, and a slab 6 ft. 3 in. long which seems to have served as a pawl.

A row of posts west of the pier agrees with the 25-in. O.S. map in suggesting the former presence here of a wooden quay.

<sup>1</sup> *Stat. Acct.*, XVI, 90.

*East Wemyss, Fife.* NT 340967

East Wemyss was one of the places that had to be watched for disaffected persons in 1565,<sup>1</sup> and was joined with West Wemyss to provide six men for the Navy in 1664,<sup>2</sup> but Adair calls it only a 'small Creek or Place for Fisher-Boats',<sup>3</sup> Roy's map marks no pier, and both the Statistical Accounts ignore it as a harbour. However, the 6-in. map surveyed in 1854 marks a narrow channel through the tidal sands SE.

of the church, and here some traces of an improved landing survive. That is to say, a ridge of rock lying more or less parallel with the water-line, just above low-water mark, has been partly cut away to a straight transverse face, to give boats access to the beach, a tall post has been set up to mark the rock at high tide, and higher up the beach the boulders have been cleared from a strip about 55 ft. wide, and thrown to its W. side where they lie in an irregular rickle.

<sup>1</sup> *RPC*, I, 381.

<sup>3</sup> *Description*, 11.

<sup>2</sup> *ibid.*, 3rd ser., I, 606.

*Eden Estuary, Fife.* NO 4519-4920

The estuary of the River Eden extends inland for about three miles, its entrance opening about two miles north of St Andrews. It could no doubt have served as a refuge for small craft at any period, but Adair depreciates it on account of its shallowness and dangerous quicksands.<sup>1</sup> It is mentioned as a Royal port, apparently with a standing equal to that of St Andrews, in a charter of 1362,<sup>2</sup> and the Burgh of Cupar had a 'haven' in its tributary the Motray Water.<sup>3</sup> A short tidal reach of this stream, which enters half a mile below Guard Bridge, is wide enough to have accommodated small craft, although the record clearly implies that no 'docks' existed. The extent to which the estuary was used in later times may be questioned, as it appears to have been closed to shipping, no doubt in the interests of St Andrews, in the earlier seventeenth century.<sup>4</sup> In the later eighteenth century small vessels were delivering barley to a distillery at Guard Bridge, and coal and lime to farms.<sup>5</sup>

<sup>1</sup> *Description*, 14.

<sup>4</sup> *Geogr. Coll.*, II, 403.

<sup>2</sup> *RMS*, 1306-1424, 38.

<sup>5</sup> *Stat. Acct.*, XIII (1794), 198.

<sup>3</sup> *Acts of the Lords of Council in Civil Causes*, 1496-1501, 187.

*Elcho Castle, Perthshire.* NO 164211

Immediately below Elcho Castle a small water-course, dry when visited, has formed a narrow inlet in the right bank of the Tay, and on the left bank of this inlet there may be seen the remains of a quay which was in use for local purposes until recent years. The remains consist of some 80 ft. of dry-stone facing-wall, inaccessible or largely overgrown but probably of no great age. At the mouth of the inlet, which is about 30 ft. wide, the remains of a landing-jetty emerge on to the muddy foreshore from under the raised bank of the river. The jetty is about 4 ft. 6 in. wide, being formed of slabs of this length laid transversely on large unshaped stones; beyond the seven slabs that are still more or less in place, traces of the foundations run on for a further 15 ft. or so. This jetty is probably of nineteenth-century date, as one of the slabs shows droving and is therefore presumably in re-use from a demolished house. Although the artificial works thus seem to be much later than the Castle, the inlet is likely to have been used at all periods, with or without improvement.

*Elie, Fife* (fig. 5d). NT 493997

Elie and Earlsferry together front on a south-facing bay, protected from E. and W. by promontories about a mile apart. Elie harbour itself is a large tidal pocket, lying in the NE. part of the bay's sweep and behind a tidal island which gives it additional protection from the S., with the result that its only exposure is towards the SW. Sibbald, in 1710, described it as 'most convenient',<sup>1</sup> and Pococke, in 1760, as 'suitable for large ships'.<sup>2</sup> It comes on record as a 'port and hevin' in 1491,<sup>3</sup> but may at that time have possessed no artificial harbour-works, as a major building-operation was evidently undertaken in 1582, with help from the Convention of Royal Burghs,<sup>4</sup> which may have been the first improvement. The fortunes of the place need not be followed in detail, particularly as nothing is known as to the extent and depth of the harbour in its early days,<sup>5</sup> but it is important to notice that Adair, in 1703, described an arrangement similar to that of today,<sup>6</sup> namely a causeway joining the island to the mainland on the E. and a pier returning northwards from the NW. corner of the island. However, by 1796 the harbour was in bad order,<sup>7</sup> and at some date well before 1836 the pier was breached and 70 ft. of it thrown down, while the communicating dyke was also ruinous and was admitting sand from Wade's Bay.<sup>8</sup> The 6-in. O.S. map surveyed in 1854 marks the pier but no causeway. The situation was restored by William Baird, who bought the Elie estate in 1853, as he shortly afterwards extended the pier and built a new causeway,<sup>9</sup> forming the latter by means of a pair of walls, the inner one of which is now masked by a continuous dune of blown sand.

The only points of archaeological interest that have survived Baird's reconstruction are as follows. (i) The general lay-out of the works, which perpetuates the arrangement recorded by Roy – itself, no doubt, an earlier if not an original feature. (ii) Boulders set up here and there for use as pawls, and evidently belonging to an older phase than the iron pawls on the pier. (iii) A fine four-storeyed warehouse, the fenestration of which suggests a late eighteenth-century date.

<sup>1</sup> *Fife*, ed. 1803, 334.

<sup>2</sup> *Tours in Scotland*, 275.

<sup>3</sup> *Acts of the Lords of Council in Civil Affairs*, I, 203.

<sup>4</sup> *CRB*, I, 135.

<sup>5</sup> The account given by Wood, W., *The East Neuk of Fife*, 211, is less than lucid.

<sup>6</sup> *Description*, 11.

<sup>7</sup> *Stat. Acct.*, xvii, 540; *NSA*, ix, 281.

<sup>8</sup> *Tidal Harbours*, 160 f.

<sup>9</sup> Wood, W., *op. cit.*, 231, 211.

#### *Eyemouth, Berwickshire.* NT 945645

This harbour has been formed in the mouth of the Eye Water, a straight tidal reach opening into a bay which is itself partially protected, except from the N. and NE., by projecting rocky horns. The W. side of the harbour, on the left bank of the estuary, consists of a quay with houses behind it, but the east side is flanked by a pier, between which and the right bank a channel has been left for the river. Craft in the harbour are thus unaffected by the stream, which may, however, be let in through a sluice, if necessary, to clear out sand and mud. Owing to the natural shelter that the river-mouth provides, shipping may well have resorted to the place at any period in the past, and Eyemouth's old standing as a port is attested by the mention of anchorage dues collected as early as 1288,<sup>1</sup> but neither this record, nor one of 1597, when the town was made a burgh of barony with a free port,<sup>2</sup> nor its inclusion, in 1602, in a list of 'portis and harboreis quhair his Hienes hes na customeris',<sup>3</sup> necessarily proves the existence of harbour-works at any of these dates. In 1703, however, Adair writes of 'some little Keys up along the Shoar', i.e. presumably somewhere on the left bank, and adds that 'they are about to build a strong Peir of Stone out from the Shoar on the East side'.<sup>4</sup> In 1748, however, the place was still only a small harbour, good for fishing boats,<sup>5</sup> and the plan for a stone pier does not seem to have been put into practice until 1768, when, on the advice of John Smeaton, the existing N. pier was built on the right bank, the contractor being Cramond of Dunbar.<sup>6</sup> Meanwhile a pier had been built on the left bank, shortly before 1750,<sup>7</sup> although whether extending or replacing Adair's 'little Keys' does not appear; in 1847 the face of this work was giving way and was noted as due for repair.<sup>8</sup> The wall or quay that protected the harbour from spates in the river-channel was pulled down and rebuilt, and a sluice was formed at its head, in 1843.<sup>9</sup> The quarrying required for the construction of Smeaton's pier led to some enlargement of the harbour, and a maximum depth of 20 ft. was obtained.<sup>10</sup>

The harbour has been improved so thoroughly in the interests of the herring fishery, and most recently in 1965, that few remains of earlier construction survive. The S. face of the N. pier, however, overlooking the lifeboat slip, exemplifies two points in Smeaton's report, i.e. the stone used is a conglomerate obtainable at the NW. end of the bay,<sup>11</sup> and the foundations are set on a ledge quarried from rocks conveniently sited by nature. Some of the blocks are very large, two of the largest measuring 6 ft. 6 in. by 3 ft. 9 in. and 7 ft. by 2 ft. 9 in. respectively. The outer (N.) face of this pier is made of similar material but here the blocks are set obliquely. The parapet is 5 ft. 6 in. high, and its base is defined by a string-course. The rest of the pier is concrete, and so is the pier on the W. side of the entrance; the S. face of this latter shows some conglomerate blocks, but they are smaller than those on the east and need not be contemporary.

<sup>1</sup> Raine, J., *The History and Antiquities of North Durham*, App., No. ccxxxii, with which cf. *SHR*, XLV (1966), 37 n. 6. For these references I am indebted to Mr G. G. Simpson.

<sup>2</sup> *Corporations, Local Reports* (1836), 172.

<sup>3</sup> *RPC*, vi, 373.

<sup>4</sup> *Description*, 4.

<sup>5</sup> 'A Gentleman', *A Tour through the Whole Island of Great Britain*, iv, 47.

<sup>6</sup> *Tidal Harbours*, xix and 101.

<sup>7</sup> *Stat. Acct.*, III, 113 f.; *CRB*, vi, 353.

<sup>8</sup> *Tidal Harbours*, 101.

<sup>9</sup> *ibid.*

<sup>10</sup> *Stat. Acct.*, loc. cit.

<sup>11</sup> *NSA*, II (Berwickshire), 321.

#### *Ferryfield of Carpow, Perthshire.* NO 194180

The 25-in. O.S. map surveyed in 1860-2 marks a ferry as crossing from Cairnie pier (q.v.) to Ferryfield of Carpow, on the right bank of the Earn about half a mile above its confluence with the Tay.

The terminal here is a small quay of rather rough dry-stone masonry, recalling the older quays on the front at Newburgh (q.v.). The quay is about 50 ft. wide, is margined with roughly dressed slabs, and carries a single wooden pawl. The masonry of its face continues downstream, flush with the river-bank, in a descending slope which brings it to low-water mark in a further 60 ft. On its upstream side the quay projects some 45 ft. from the bank, the masonry of the upstream face coalescing, in a wide curve, with the revetment supporting the approach-road. The concavity so formed probably served to deflect the current outwards, and so provide easy water along the quay-front. No quay or jetty exists on the opposite side of the Earn, but the bank there forms a steep beach, on which boats could land.

*Ferryton, Clackmannanshire.* NS 898899

The place-name Ferryton is on record at least as early as 1502<sup>1</sup> and, although no evidence has been found of a ferry-terminal on the opposite shore, it is probable that one existed either at Airth, as suggested by the expression 'Ferry of Airth' of 1565<sup>2</sup> or at Dunmore (q.v.), which is more nearly opposite the farm now known as Inch of Ferryton. However, this may be, the creek some 400 yds. W. of the farm can have had no connection with any former ferry, as it was evidently formed in the reclamation of this part of the coast from its previous condition of mud-flats. The river-dyke is carried all round the creek, two large drainage-ditches are led into its head through a sluice, and there are no remains of any structure or traces of industrial use.

<sup>1</sup> RMS, 1424-1513, No. 2643.

<sup>2</sup> RPC, I, 381.

*Fife Ness, Fife.* NO 637098

Immediately west of Fife Ness, and below the coastguard station, the littoral rocks are pierced by a narrow, angular creek leading to a small shingly bay. Notwithstanding its exposed situation and obvious navigational hazards, this creek is on record as a 'haven or harbour' at least as early as 1632,<sup>1</sup> and in fact may well have been in use in considerably earlier times.<sup>2</sup> The 'ports and landing-places of Fifesness' are mentioned, in a customs context, in 1704.<sup>3</sup> The rouping of the customs, which belonged to Crail, is regularly recorded in the Town Council's minutes in the later eighteenth century, and the place still ranked as a 'little harbour' in 1836.<sup>4</sup> Local tradition has it that the Cromwellian citadel at Perth and the Scots church at Rotterdam were built of stone quarried near by at Craighead, and shipped from Fife Ness.<sup>5</sup>

Backed against the sloping rock that forms the NW. side of the creek, there stand the ruinous remains of a dry-stone quay; it is formed in part of very large blocks, but also contains some smaller material, set vertically. The front, which is battered, stands up to 10 ft. in height where best preserved; the ends, also battered, may be distinguished among the ruins and give the structure a length of some 65 ft., while an original breadth of about 25 ft. seems likely as this would have brought the top of the quay to the level of the rock behind. Any paving which may once have covered the top has disappeared, but just within the outer face there survive the footings of a roundish or U-shaped structure about 14 ft. in diameter, probably the base of a crane. No dating can be suggested with confidence, but most of the observed features can be matched in works attributed to the eighteenth or early nineteenth century.

The surface of the rock behind the quay seems to have been flattened artificially. On this flattened surface, about 15 yds. back from the quay, two concentric grooves have been cut, the inner one, which is 6 in. wide by 2 in. deep and has vertical sides, enclosing a space 1 ft. 8 in. in diameter, and the outer one, 1 ft. 2 in. wide on the surface, 4 in. deep and with a sloping outer side, enclosing a much larger area, 9 ft. 6 in. in diameter. Outside there are traces of a concentric levelled zone. East of the grooves, the rock-surface has been sunk and smoothed to a segmental line not concentric with them, and reaching a greatest distance of 4 ft. 2 in. from the outer one; a similar but larger smoothed area, partly covered up with shingle, is also seen on the NW. The marks suggest some mechanical installation, perhaps connected with local limestone workings;<sup>6</sup> a lime-kiln stood close by, and the bay to the N. has been developed as a pond for a tide-mill.<sup>7</sup>

<sup>1</sup> V.10 Misc. Doc. No. 329 in H.M. General Register House. The copy of this document in the MS. Inventory of Crail Charters (ibid., B/10/12/Book 2 No. 329) is wrong in respect of both date and place.

<sup>2</sup> Crail's rights to customs, etc., in the area between the River Leven and the Kenly Burn were regarded as 'ancient' in 1699 (ibid., No. 468). Cf. also article on Crail, creeks (see above).

<sup>3</sup> ibid., No. 473.

<sup>4</sup> NSA, ix, 956.

<sup>5</sup> Jackson, Rev. J., *Official Guide to Crail*, 59.

<sup>6</sup> *Stat. Acct.*, ix (1793), 443.

<sup>7</sup> Description and photographs are with the National Monuments Record of Scotland.

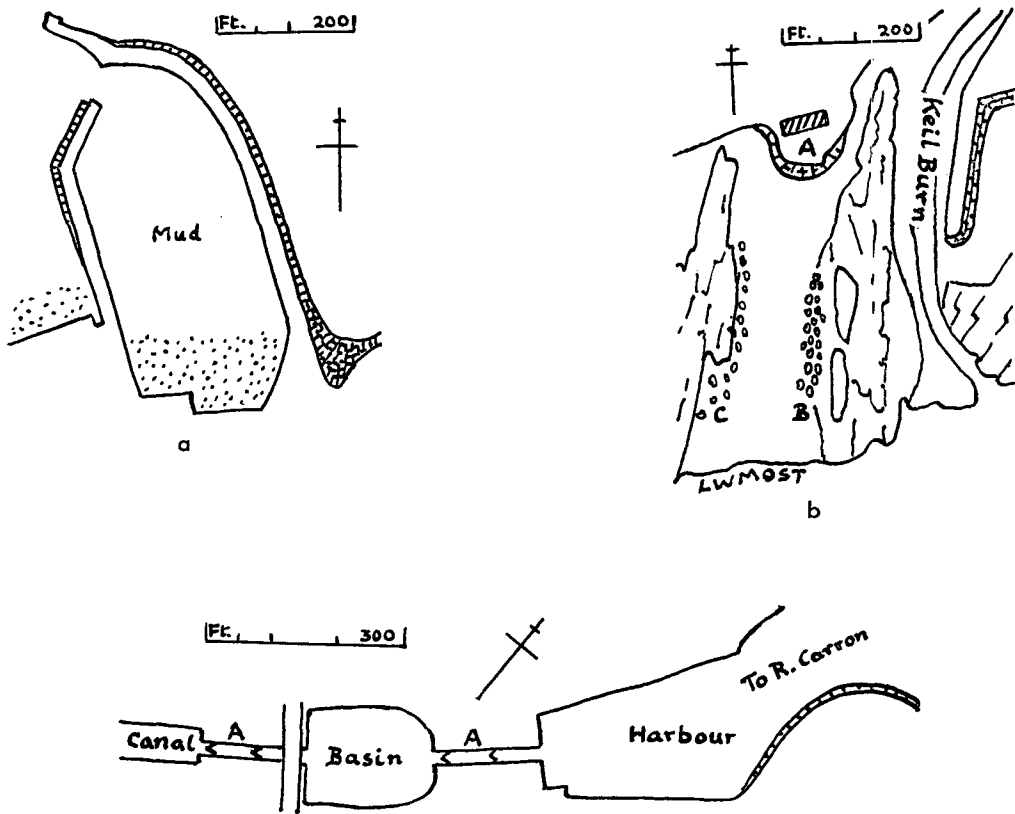


FIG. 6. *a* Fisherrow, *b* Largo and Lundin (A, base of ruined pier; B, ruins of pier; C, boulders); *c* Grangemouth, entrance to Forth and Clyde Canal (AA, locks).

*Fisherrow, Midlothian* (fig. 6a, Pl. 29a, b). NT 334730

Fisherrow harbour stands on a wide bay three-quarters of a mile W. of the mouth of the River Esk, and serves as the port of Musselburgh. Reasons will be given below for believing that the Esk estuary, now unnavigable, provided facilities for a harbour in the Middle Ages and, decreasingly, later. As silting progressed in the river, however, the Burgh no doubt found it necessary to develop Fisherrow, improving whatever had existed before in the shape of a fishermen's landing-place. Notwithstanding the present appearance of the adjoining shore as an open sandy beach, the harbour has in fact been inserted in a shallow pocket among tidal rocks, the 'breakwater' mentioned in the Fisherrow Harbour Act (1840) having been a natural rock-ridge, which gave some protection from the west.<sup>1</sup> No record has been found of the building of the earliest harbour, but it may well have been in existence by 1592, as Fisherrow is mentioned in that year in a list of 'towns and heavynnis',<sup>2</sup> although some of the places in the list, e.g. Skateraw, probably did not possess built harbour-works. The port must have been fairly active in 1626, when no fewer than twelve Fisherrow skippers were listed by name as available for certain duties.<sup>3</sup> In 1703 a single pier was marked on Adair's map, with a westward curve, and it may be inferred that this pier was of timber with stone filling, as the Burgh Council had decided, in 1682, that it was 'to be repaired with balks of timber where the same ar wanting and to be filled up with stones to the balks according to use and wont'.<sup>4</sup> Adair states elsewhere that there had once been a pier of timber.<sup>5</sup>

By the beginning of the eighteenth century a new harbour was needed,<sup>6</sup> and for this a site was chosen at the mouth of the Esk, as in earlier times. Construction and repair were in progress in 1712 and 1713, the old harbour being treated as a quarry and owners of boats in Fisherrow being required to carry stone from it to the new works. This experiment evidently failed, as in 1740 a petition for another new harbour was presented to the Burgh Council. A return was made to Fisherrow, and building was begun there in

1743 on the old harbour's foundations. The work was to be done 'in ye same manner as if ye old harbour was built'. In 1744, the harbour was described as 'now building' and in 1753 as 'lately built'; in the former year William Adam was employed for survey work on ground adjoining the harbour, but it is not stated that he had any part in the construction. Repairs are mentioned from time to time in the ensuing thirty years, John Adam being employed in 1762 and a plan by William Milne approved in 1767. Mention of the 'west head' proves the existence of two piers in 1772, and Taylor and Skinner figure them in 1776.<sup>7</sup> In 1787 yet another scheme was considered, a long report being submitted by Cuthbert Clark, an architect in Dunbar. He advised against the estuary site and recommended alternative plans for wet docks or, failing either, the enlargement and improvement of the existing harbour. This he described as well-planned, but suffering from never having been completed. It may have been as a result of Clark's report that the Burgh Council approved, in 1790, the building of a 'Key and Parapet wall', presumably as additions to the E. Pier, which on that showing would previously have been no more than a breakwater, without facilities for working ships. In 1823 an estimate of £700 was accepted from William Watson and James Forbes, of Edinburgh, for repairing the harbour, but the nature and position of the repairs are not stated. They must, however, have been fairly extensive, as in the following year Watson and Forbes were paid £130 for work additional to the contract. A map of 1824<sup>8</sup> shows the E. element of the harbour as a pier, but the W. one only by a single heavy line which probably represents the rock-ridge built up and improved as a breakwater.

An interesting experiment, suggested in 1822 in connection with the deepening of the harbour, was made in 1835, when an archway was opened under the E. pier with the idea that a tidal current would wash out silt, but more harm than good resulted, and the archway was closed up again in 1838.<sup>9</sup> In later years, too, repairs and improvements to the E. pier seem to have been fairly frequent. In 1847, for example it was refaced after damage by a storm, and an extension of 50 ft., the character of which is not clear, was made to the landward end. Including a concrete pier-head, added in 1939, the E. pier is today about 755 ft. long, and curves westwards at its outer end to cover the N. side of the harbour and overlap the end of the W. pier, the entrance-gap between them being 60 ft. wide and facing NW. The pier is mainly built of red-sandstone blocks, rather roughly coursed and in some places rusticated. The quay-face has chases for fenders, and its lip is rather irregular. There is a stout parapet with a step, the slabs of the coping being jointed together with lozenge-shaped keys. Several black whinstone pawls recall a minute of the Harbour Commissioners of 1850 authorising the purchase of two, and it is interesting to see how closely they have been copied in a cast-iron example. Externally the pier has a heavily battered base below high-water mark, rather roughly constructed of material not all of which is dressed. At the landward end of the pier a ramp leads down to the beach, and in this have been re-used some stone chair-blocks from an obsolete railway.

While the E. pier thus belongs in the main, subject to additions and alterations, to the phase of construction begun in 1743, the W. pier is wholly of the nineteenth century, having been built new, on the old foundations, in 1843-4, to a plan by Robert Stevenson and Sons. The contractor was W. Kinghorn, of Leith, and the contract price was £1,450, to be paid in three instalments of £400 each, on completion respectively of the 'talus wall', the quay wall, and the hearting, pitching and parapet, with the balance when the work was finished. This figure, however, seems to have been exceeded, as an item of £1,685 2s. 5d for 'building of New Pier' appears in the accounts of 1845. The pier is now about 460 ft. long, including the revetment of some made ground at its landward end, and its head, added in 1939, curves slightly inwards. Its red-sandstone masonry is more neatly dressed than that of the E. pier, and the heavily battered external base is smooth and regularly coursed. The lip of the quay has a rounded arris, with a broad, shallow hollow hollow immediately behind.

The S. side of the harbour is formed by a beach, backed by masonry revetment. The interior dries out completely at low tide.

<sup>1</sup> For this and other local information I am indebted to Mr R. L. Scarlett.

<sup>2</sup> *APS*, III, 615.

<sup>3</sup> *RPC*, 2nd ser., I, 222 f.

<sup>4</sup> Musselburgh Burgh Records, H.M. General Register House, B/52/3/1, 27th Apl. 1682. This source is referred to below as 'Records'.

<sup>5</sup> *Description*, 7.

<sup>6</sup> The following account is based on Records B/52/1/1, Nos. 75, 80, 100; B/52/3/1, 5th Jun. 1712, 22nd Jun. 1713; B/52/3/2, 14th Jun. 1740, 22nd Sept. 1743,

27th Feb. 1744; B/52/3/3, 17th April 1762, 25th Jul. 1767, 10th Jul. 1772, 3rd Feb. 1787; B/52/3/4, 15th Jul. 1789, 24th Dec. 1790; B/52/3/5, 30th Jun. 1723; B/52/6/6, 15th Jun. 1843, 4th Feb. 1845, 17th Dec. 1847, 10th Dec. 1850.

<sup>7</sup> *Survey and Maps of the Roads of North Britain*, Pl. 1.

<sup>8</sup> Hay's 'New Plan of Musselburgh and its Environs'.

<sup>9</sup> Records, B/52/3/7, 18th Aug. 1835, 26th Feb. 1838; *NSA*, I, 293. The date 1806 given by *NSA* in this passage does not correspond with anything in the Records.



*Fluckdub*

See Crail, Creeks.

*Grange, West Lothian*

See Bridgeness.

*Grangemouth, Stirlingshire* (fig. 6c). NS 918822, 923825

Although suspected in 1573 of being used for the export of contraband,<sup>1</sup> the mouth of the River Carron hardly comes into notice as a harbour before the building of the Forth and Clyde Canal, of which it became the terminal (1777). The lowermost reaches must have been difficult to navigate before about 1765, when they were straightened and shortened.<sup>2</sup> The 6-in. O.S. map surveyed in 1854 marks 'Harbour' in the mouth of the canal, immediately above its junction with the Carron estuary, but a plan of 1797, by Ainslie,<sup>3</sup> shows 'Grange Mouth Harbour' in the estuary itself, with 'Captain Hamilton's Wharf' in what is now the Grangemouth Dockyard Company's yard. Part of this company's wharf is faced with masonry which might possibly go back to Ainslie's time, and much of this right bank of the estuary probably has been used as wharfage at one time or another as various dilapidated remains may be seen on waste ground near the canal junction. The entrance to the canal is a cut about 500 ft. long by up to 200 ft. wide. The outer portion has sloping sides faced with dry-stone masonry, and its E. bank recedes to form a small bay, no doubt intended to facilitate the turning of ships; the inner portion is faced with ashlar, the margins of the wharves being formed of very large slabs secured with iron cramps. The place is derelict, and no fittings survive apart from a number of heavy mooring-rings.

<sup>1</sup> *RPC*, II, 446.

<sup>3</sup> H.M. General Register House (R.H.P. 242).

<sup>2</sup> Nimmo, W., *A General History of Stirlingshire* (ed. 1777), 454.

*Gutcher's Hole, Berwickshire*. NT 773725

The name 'Gutcher's Hole' is given, on the O.S. maps, to an inhospitable piece of foreshore immediately SE. of the mouth of the Dunglass Burn, which today shows no signs of use or of artificial improvement, but it seems to have been recognised as a landing-place at the beginning of the seventeenth century as the right to charge dues there, as at Cove (q.v.), is mentioned in a confirmation charter of 1606.<sup>1</sup> This may perhaps have been done less on account of the intrinsic merits of the place than in order to discourage attempts to evade the dues chargeable at Cove.

<sup>1</sup> MS. Register of the Privy Seal, LXXV, 127 f., in H.M. General Register House.

*Higginsneuk, Stirlingshire*. NS 921870

The landing at Higginsneuk, the Stirlingshire terminal of Kincardine Ferry (q.v.), is situated about 200 yds. upstream from Kincardine Bridge. The 'Ferry of Airth' mentioned in 1565<sup>1</sup> may or may not have been located here, but in later times the crossing was much used by drovers making for Falkirk Tryst,<sup>2</sup> and today the most conspicuous feature of the place is the walled drove-road that leads to the ferry from the highway at the Keith Arms Inn. This is 40 ft. wide, unmetalled, and may be matched in many places where droves had to traverse improved land.<sup>3</sup> Between the end of the walling and the edge of the mud-flats, the course of the road is marked by kerbs and revetment; the jetty, which ran out across the mud to the deeper water, was of wood and has gone to ruin, but the piles on which it rested, set in rows transversely to its axis, may still be seen at low tide.

On the NW. side of the roadway, in its lowermost part, a recess has been dug in the mud-bank and revetted with timber, no doubt as a dock for a ferry-boat. On the SE. side there are the ruins of a timber-built sluice set on a small watercourse, evidently designed to keep the landing clear of mud.

<sup>1</sup> *RPC*, I, 381.

<sup>2</sup> Haldane, A. R. B., *The Drove Roads of Scotland*, 114.

<sup>3</sup> e.g. RCAM, *Inventory of Selkirkshire*, 78, 81; *Inventory of Peeblesshire*, 345 f., 349.

*Inchyra, Perthshire*. NO 183203

This harbour was described in 1792 as 'tolerable good',<sup>1</sup> and in 1843 as being more conveniently situated for the adjoining parish of Kinfauns than two harbours of its own, which had been 'rendered nearly useless by the late improvements'.<sup>2</sup> The harbours in question were probably at Seggieden and

Tofthill. Inchyra harbour is in the mouth of Cairnie Pow, and consists of a pier projecting into the Tay and a quay formed by a facing-wall which continues the E. face of the pier inland along the curving right bank of the pow. The O.S. map surveyed in 1860–2 shows the pier as being about 230 ft. long on its W. side, and the pier and quay together, on the E. as over 300 ft. long, with a breadth of 80 ft. to landward and of 25 ft. at the outer end; today, however, reeds, herbage and turf disguise most of the structure apart from some 165 ft. of the facing-wall and the outermost 55 ft. of the pier. This portion is built of large dressed slabs and blocks, without iron cramps; the end, which is squared, has in its centre a flight of steps 4 ft. wide. The masonry of the facing-wall is also well squared and neatly laid.

A ferry formerly crossed the Tay from Inchyra, but is said locally to have been discontinued before 1914. The opposite terminal appears to have been the mouth of a small stream, dry when visited, below Muirhead (180199), but no artificial works were found there.

<sup>1</sup> *Stat. Acct.*, III, 574.

<sup>2</sup> *NSA*, x, 1221.

*Inveresk, Midlothian*

See Musselburgh.

*Inverkeithing, Fife; Town.* NT 1382

Inverkeithing Bay is a naturally enclosed basin, now roughly triangular in shape and measuring 900 yds. from SW. to NE. by some 700 yds. transversely. Formerly, however, it was larger, as made ground has encroached considerably on its N. portion. It is entered from the E. by a passage less than 100 yds. wide at low water, the headlands on the N. and S. of the entrance being known respectively as the East and West Ness (q.v.). The O.S. map shows that as lately as 1895 the whole bay dried out at low water, with the Keithing Burn, which debouches in its NE. corner, forming a channel through the flats. The town stands on rising ground to the N.

With its natural advantages, the basin must have provided shelter for shipping at all periods in the past, and the first notice of the place is dated to about 1150.<sup>1</sup> This alludes to the 'passagium et navem de Inverkethin', suggesting that Queensferry Passage, in its earliest phase, had its N. terminal here and not at North Queensferry (q.v.). The port is mentioned in three documents of the fourteenth century<sup>2</sup> and in another of 1565,<sup>3</sup> and although nothing is said in these about harbour-works, structures of some sort have certainly existed since the later sixteenth century at least, in view of the records of recurrent expenditure on repairs.<sup>4</sup> 'Peers and heids' are also mentioned in 1666.<sup>5</sup> Moreover, the 'dekayitt' condition of the harbour in 1587<sup>6</sup> suggests that the works were by no means new at that date. The earliest description of the place appears in 1703, when Adair states that 'the entry to Inverkeithing Bay or Harbour is large and open. . . . Along the Shoar below [the town] there is a large and convenient Key of Stone . . . for the Rivolet that enters the N.W. Corner of the Bay, running along by it, makes a sort of narrow Chanel down to the Entry.'<sup>7</sup> Adair's quay was probably built new or repaired in 1686, when stone was 'furnisht to the building of the peer';<sup>8</sup> his allusion to the 'rivolet', supported by a passage of similar content in the *Statistical Account*,<sup>9</sup> serves to identify the early harbour with the mouth of the Keithing Burn, and it is safe to infer that his 'Shoar' adjoined it on the W., although the whole of this area is now occupied by Messrs Cowans' paper-mill. The same passage in the *Statistical Account* also records that another quay was being built in 1794, possibly the 'Mid Pier', which joined up with the one at the burn-mouth and flanked a 'West Harbour' now obliterated by the paper-mill;<sup>10</sup> this may have been the same operation as the 'lengthening' of a pier in the later eighteenth century that is recorded by a local historian.<sup>11</sup> The Mid Pier was the terminus of a waggonway, opened in 1783,<sup>12</sup> by which coal was brought from Halbeath Colliery for export; in 1794 it was of timber, but iron rails were installed in 1810.<sup>13</sup> No record has been found of the formation of the quay on the east of the harbour, but it is said to have been extended by 150 ft. in 1825.<sup>14</sup> This extension may be reflected in the stretch of heavily battered facing at its S. end, with long, massive slabs, although this is in fact only about 130 ft. in length. Otherwise neither quay shows any feature of archaeological significance; the E. one is about 325 ft. and the W. one about 565 ft. long. The burn enters the head of the harbour through a sluice installed in 1840<sup>15</sup> the need for getting rid of mud had been noted in 1836.<sup>16</sup>

The remains of an early crane survive at the S. end of the E. quay. They consist of a wooden stock, 5 ft. 10 in. high, part of the mechanism by which the movable arm was turned, the arm itself having vanished, and one of the two iron stanchions, 18 ft. 6 in. long, that were attached to the top of the stock.

The turning mechanism embodied a pair of roller-bearings working against a flanged collar, and recalls the high reputation enjoyed by the local iron-foundry in 1794.<sup>17</sup>

<sup>1</sup> *Dunfermline*, No. 2.

<sup>2</sup> *Cal. of Docs.*, IV, 461; *Corporations*, pt. II, App. (1835), 7 f.

<sup>3</sup> *RPC*, I, 381.

<sup>4</sup> *CRB*, I, 268, 415, 445; II, 2 f., 24, 239; IV, 486; V, 148, 493.

<sup>5</sup> *RPC*, 3rd ser., II, 141.

<sup>6</sup> *CRB*, I, 268.

<sup>7</sup> *Description*, 9.

<sup>8</sup> Inverkeithing Burgh Records, H.M. General Register House, No. B/34/20/165.

<sup>9</sup> Vol. X (1794), 505.

<sup>10</sup> For bygone topographical features, see O.S. 25-in. map of Fifeshire, XLIII, 2.

<sup>11</sup> Cunningham, A. S., *Inverkeithing, North Queensferry, etc.*, 47.

<sup>12</sup> Dott, G., *Early Scottish Waggonways*, 13.

<sup>13</sup> Cunningham, loc. cit.

<sup>14</sup> Cunningham, loc. cit.

<sup>15</sup> *ibid.*

<sup>16</sup> *NSA*, loc. cit.

<sup>17</sup> *Stat. Acct.*, X (1794), 507.

#### *Inverkeithing, Fife; East Ness.* NT 135822

This pier, on the N. side of the entrance to Inverkeithing Bay, seems, on the evidence of two successive O.S. maps, to have been altered and lengthened between 1854 and 1895, and is not mentioned in either of the Statistical Accounts. It deserves notice, however, as a good example of the heavier wave-damage that is suffered commonly at the landward rather than at the seaward end of a work, a stretch of about 140 ft. adjoining the land having had to be replaced in concrete.

#### *Inverkeithing, Fife; West Ness.* NT 135820

Adair, in 1703, recorded 'a long, high and strong Peer of Stone, built out from the S. Point' of the entrance to Inverkeithing Bay,<sup>1</sup> and Collins likewise marks a pier in this position presumably on the strength of his survey carried out in the 1680s.<sup>2</sup> It is also shown on Roy's map of Scotland (1747-55), and there is a record of its repair in 1768.<sup>3</sup> It is about 200 ft. long by 30 ft. wide at the landward end and 18 ft. at the pierhead, which still stands 11 ft. high above the low-tide shingle. The masonry consists of large irregular blocks, poorly shaped and coursed, with a core of large rubble; the material is igneous, and does not lend itself to neat dressing. The structure is ruinous throughout, but dilapidation is worst at the landward end.

<sup>1</sup> *Description*, 9.

<sup>2</sup> *Pilot*, 'Edinburgh Firth'.

<sup>3</sup> *CRB*, VII, 293, 299, 322.

#### *Kennedy's Pier, West Lothian.* NT 067793

This mole of heaped stone, for details of which the writer is indebted to Mr B. C. Skinner, runs out for 225 yds. across the mud-flats about a mile E. of Blackness Castle. Being about 8 ft. wide on top, and having the stumps of wooden posts set at 12-ft. intervals along its centre, it resembles a groyne rather than a pier, and need consequently not be included in the present survey.

#### *Kennetpans, Clackmannanshire.* NS 913887

The creek at Kennetpans, although described as a harbour in 1841,<sup>1</sup> seems to have been essentially the outlet for certain local industries – on the creek itself a distillery, and in the hinterland Kilbagie Distillery or the works that succeeded it, and some coal and ironstone mines. The distilleries are known to have been working before 1788,<sup>2</sup> and the place figures as in full industrial use on the 25-in. O.S. map surveyed in the eighteen-fifties, but it is impossible to date the remains of the harbour-installations to any particular period. The following features, however, may be worth noting. (i) Stone foundations in the mud of the creek-bottom, apparently representing more than a single system of wharfage, together with ruined timber piling. (ii) A deep and wide ditch entering the head of the creek, through a sluice; it probably originated as the canal from Kilbagie Distillery,<sup>3</sup> and no doubt served, in later times, to clear the creek of silt. (iii) A large mound on the E. bank of the creek, locally said to be formed of dallast dumped by ships taking on cargoes, but more probably material excavated and dredged from the creek (cf. Clackmannan Pow). (iv) Dimensions: in the eighteen-fifties the W. wharf was 300 ft. and the E. one 160 ft. long, and the inner end of the creek was 100 ft. wide at high-water level.

<sup>1</sup> *NSA*, VIII (Clackmannanshire), 123.

<sup>2</sup> *Stat. Acct.*, XIV (1795), 623.

<sup>3</sup> On which see *ibid.* and Beveridge, D., *Between the Ochils and the Forth*, 206.

*Kincardine, Fife.* NS 927872

At the beginning of the eighteenth century Kincardine had little coasting trade and owned few boats, such as there were being largely used for carrying salt, made locally, to Leith. Subsequently a shipbuilding industry was started, and continued to flourish during the later eighteenth and earlier nineteenth centuries, the place enjoying such natural advantages as a good roadstead and a hard gravel beach, on which vessels could be cleaned and repaired.<sup>1</sup> In 1794, the local shipmasters were beginning to build a pier, but the work was not actually completed until 1811-3.<sup>2</sup>

The pier, now derelict, stands immediately SE. of Kincardine Bridge. It is built of squared dry-stone masonry, rather rough but coursed, the outer end being of a different build and much neater in appearance. Steps lead down to the water on each side. At high-water level the NW. side is 135 ft. long and the SE. side 185 ft., the breadth being 60 ft., but these measurements were taken only to the face of an embankment built in 1829 to reclaim tidal flats,<sup>3</sup> and the pier most probably once extended further inland. This point is reinforced by the facts that the access-road to the pier lies higher than the reclaimed ground and is underbuilt with masonry, and that the embankment-face is structurally later than the pier where the two are in contact.

<sup>1</sup> *Stat. Acct.*, xi (1794), 551 n., 552; Beveridge, D., *Culross and Tulliallan*, ii, 226.

<sup>3</sup> Caddell, H. M., *The Story of the Forth*, 228 f.; NSA, x, 868; *Tidal Harbours*, xxiii.

<sup>2</sup> *Tidal Harbours*, 153.

*Kincardine, Fife; Ferry Landing.* NS 926873

The jetty that served the ferry between Kincardine and Higginsneuk in its latest phase was built in 1826 or 1827,<sup>1</sup> but the service itself is likely to have been much older, as a 'Ferry of Airth' is mentioned in 1565<sup>2</sup> and this most probably had its northern terminal at Kincardine. The use of the ferry by drovers is mentioned under Higginsneuk (q.v.).

The jetty lies about 150 yds. upstream from Kincardine Bridge, is solidly constructed of scabbled ashlar blocks, and is 45 ft. in width. The sloping surface is paved with setts up to high-water mark, and the margins are bordered with slabs; these are checked along the lip to hold a wooden batten, bear a wide, shallow groove, and are provided with mooring-rings. Abutments, similarly treated, merge into the revetment of the shore on each side.

<sup>1</sup> NSA, x, 868.

<sup>2</sup> RPC, i, 381.

*Kinghorn, Fife.* NT 271868

Kinghorn is first heard of as a Royal Burgh in the twelfth century,<sup>1</sup> and no doubt has been a seaport since very early times – certainly since before the acquisition of Pettycur in 1541 – but no positive reference to artificial harbour-works, as distinct from an open beach on which vessels could have been drawn up, has been found before 1609, when the harbours of Kinghorn and Pettycur were both in need of repair.<sup>2</sup> A grant for a new pier was obtained in 1698,<sup>3</sup> work on it being still unfinished in 1707.<sup>4</sup> This was no doubt Adair's 'stone pier' of 1703,<sup>5</sup> and the 'harbour lately built' that was noted by Sibbald in 1710.<sup>6</sup> Neither Roy's nor Ainslie's map marks a pier at Kinghorn, which may or may not imply that the pier of 1698 had been ruined, or perhaps superseded by Pettycur, by the middle of the eighteenth century. The pier was at any rate in ruins in 1846,<sup>7</sup> and the harbour 'of little use' except for fishing-boats.<sup>8</sup>

The remains of a dilapidated pier, very probably that of 1698, still survive in the N. corner of the bay below the town. The bay dries out at low tide, and its beach is backed by a sea-wall which contains in its base large boulders, such as might well have been cleared from the foreshore to make it suitable for the beaching of boats. The pier is sheltered from the NE. by a high ridge of rock, the Kirk Craig, and by the Skellies Rocks to seaward, being separated from the former only by a small cove, 30 ft. to 70 ft. in width. Of the landward portion of the pier there survives a fragment about 60 ft. long by 35 ft. wide, the W. side of which is of one build with the adjacent sea-wall, and which stands up to 8 ft. above the level of the tidal sand. Several courses of very large blocks may be seen here, and at the junction with the sea-wall there is a flight of modern steps on an older base. To seaward of this fragment the pier is reduced to a confused rick of large blocks, among which, however, the footings of the W. face and outer end may be found from place to place. The total length, including the fragment first mentioned, may have been about 180 ft., and the breadth across the outer end, which is slightly rounded, about 60 ft., but as the E. footings have vanished it is impossible to determine the original plan, or to discover how and where

the breadth was increased from the landward measurement. The W. footings show a gentle westward curve throughout their length. They consist of very large, roughly squared blocks, tailed inwards from the face, and some have been worked with a ridge along their upper edges to prevent the course above from slipping outwards.

The cove E. of the pier evidently has been used as well as the bay on the W., as a mooring-ring has been set in the rock at a point inland from its head. The present vertical face of the Kirk Craig, which flanks it on the E., likewise appears to have been cut back artificially, while debris, fallen from the pier into the mouth of the cove, seems to have been cleared away and piled back on to the ruins.

<sup>1</sup> *Dunfermline*, No. 55.

<sup>2</sup> *CRB*, II, 279.

<sup>3</sup> *ibid.*, IV, 265. The possibility of this harbour having been at Pettycur, and not at Kinghorn, is discounted,

though the record is not perfectly clear as to which is meant.

<sup>5</sup> *Description*, 10.

<sup>7</sup> *Tidal Harbours*, XXIV.

<sup>4</sup> *APS*, XI, 482 b.

<sup>6</sup> *Fife*, 313.

<sup>8</sup> *NSA*, IX, 815.

*Kingoodie, Perthshire*. NO 339293

The pier and quays at Kingoodie all seem to be of nineteenth-century date, and are of little archaeological interest, but the following features are worth noting for purposes of comparison. (i) The very large, well-coursed blocks and slabs used in the pier and wharfage: (ii) an arched culvert under the pier, presumably intended to give passage to tidal currents to clear out silt: (iii) a massive stone pawl, circular in section and standing 3 ft. 4 in. high above a base 3 ft. 2 in. deep: (iv) remains of a small timber landing-stage, for use at low water, running out beyond the pierhead.

A hook-shaped rickle of large stones, perhaps the remains of a pier, was observed from a distance in the mud-flats south of the mouth of the Monorgan Burn (c. 330290), but could not be examined.

*Kingsbarns, Fife*. NO 601125

Notwithstanding its ruinous condition and general air of antiquity, Kingsbarns harbour dates only from the third quarter of the nineteenth century, having been built at some time after 1850 by a farmer, John Duncan, who designed to use it for shipping his potatoes to London.<sup>1</sup> Its late date gives the harbour its only claim to archaeological interest, as the mere appearance of the remains, resulting no doubt from the use of traditional methods by local craftsmen, might well have suggested a very much earlier origin in the absence of other information. The contrast with sophisticated nineteenth-century harbour-construction is notable.

For what a description may be worth on the foregoing basis, the works comprise two piers, both ruinous and with their lowermost courses largely masked by sand, which run north-eastwards down the foreshore and enclose an area of just over three-quarters of an acre. The SE. pier is about 220 ft. long, and 20 ft. broad for the greater part of its length, although broadening and turning slightly northwards at its outer end, where all details are obscured by debris. The NW. pier is 410 ft. long, its upper portion running more or less parallel with the other on a convenient ridge of rock. It then curves south-eastwards, increasing in breadth from 20 ft. to 33 ft., and slightly overlaps the other pier at the entrance. This is well above low-water mark, and is only 18 ft. wide. Both piers are faced with large, roughly dressed blocks, set vertically for the most part, although some of the lowermost lie flat. The best-preserved section of the NW. pier now stands 7 ft. 6 in. above the encroaching shingle, and still retains a few slabs of its marginal coping. The largest of several slab pawls is 6 ft. 3 in. long, 10 in. thick and 1 ft. 11 in. wide, splaying at the base to 2 ft. 2 in.<sup>2</sup>

As a landing-place, however, Kingsbarns has a much longer history. In the eighteenth century its customs, teinds, anchorages, etc., belonged to Crail, their rousing being constantly mentioned in the Burgh Council's minutes. In 1808 they were conveyed to the Earl of Kellie.<sup>3</sup> The language of the minutes suggests some general commerce, as well as a local fishery. In 1758 the Kingsbarns fishermen reported that their harbour was in a ruinous condition,<sup>4</sup> and again in 1781 they petitioned for 'some reparation on the pier and poles'.<sup>5</sup> On the first occasion the Council granted them £3, and on the second agreed only to repair the poles. This mention of 'poles', evidently mooring-posts, suggests that the pier of the day was too light in construction to stand the strain of moored craft, as has been suggested in the case of Crail (q.v.), and if this light structure survived until 1836, the record that there was then no 'proper' harbour, and that coal had to be delivered 'at the shore'.<sup>6</sup> may readily be understood.

<sup>1</sup> I am indebted for this information to Mr J. M. Turnbull, Boggall.

<sup>2</sup> For these measurements I am indebted to Mr J. di Folco.

<sup>3</sup> Crail Council Minutes, 12th Sept. 1823, H.M. General Register House (B/10/10/Book 5).

<sup>4</sup> *ibid.*, 6th Mar. 1758 (B/10/10/Book 2).

<sup>5</sup> *ibid.*, 1781 (B/10/10/Book 3). <sup>6</sup> *NSA*, IX, 98, 102.

*Kinkell Ness, Fife.* NO 538156

Adair, in 1703, described this harbour as 'a little Creek with a Head of Stone',<sup>1</sup> i.e., presumably, a stone-built pier or jetty. The 25-in. O.S. map of 1894 marks 'Kinkell Harbour' immediately SE. of the Ness though without showing any works. Today no structure can be found, but the creek is approached by a track deeply rutted in the littoral rocks.<sup>2</sup>

<sup>1</sup> *Description*, 14.<sup>2</sup> For information on this site I am indebted to Mr J. di Folco, who also notes a reference to the creekin Wilson, J. H., *Nature Study Rambles round St Andrews*, 194.*Kirkcaldy, Fife.* NT 285919

Kirkcaldy was a seaport at least as early as 1655,<sup>1</sup> but its former harbour, which occupied the N. part of the existing basin, has been so much altered and enlarged during the nineteenth and twentieth centuries that its earlier lay-out has been disguised, and virtually nothing of its structure remains visible. The only exception may be the E. face of the innermost part of the basin, at its N. end, which shows irregularly coursed rubble and cubical blocks, with some much-worn slabs on the lip of the quay above.

Efforts to raise money for repair of the pier, harbour and shore are noted in several records of the later sixteenth and earlier seventeenth centuries,<sup>2</sup> and in 1648 a harbour was under construction which was described as 'convenient and commodious',<sup>3</sup> and which had, in 1703, a 'long, high and strong Mole of hewn Stone'.<sup>4</sup> It was no doubt the E. pier of this harbour, probably corresponding with the landward end of the existing E. pier, that had to be repaired after a disaster which befell in 1723.<sup>5</sup> Roy's map of Scotland (1747-55) marks only a single pier, and this item must therefore have been noted just before the building of the W. pier, which was added about 1754<sup>6</sup> but has now been removed from the area of the enlarged basin.

<sup>1</sup> *RPC*, I, 381.<sup>2</sup> *CRB*, I, 389 (1592), 489 (1596); II, 55 (1599), 241 (1607), 264 (1608); III, 13 (1615).<sup>3</sup> *RPC*, 3rd ser., x, 380.<sup>4</sup> *Description*, 10.<sup>5</sup> *Corporations*, pt. II (1835), 157.<sup>6</sup> *ibid.**Largo, Fife* (fig. 6a). NO 416024

'Largoburn' was one of the places that had to be watched for disaffected persons in 1556,<sup>1</sup> but at that time the mouth of the Keil Burn, which forms the harbour, was probably still unimproved, as a charter of 1542<sup>2</sup> makes no mention of a port in a list of the estate's assets. These included a salmon fishery 'apud sinum torrentis de Largo'. In 1703 there was a 'Creek for small Vessels and Fisher Boats',<sup>3</sup> again, no doubt, in the burnmouth, and in 1704 there is reference to the 'customs of the burn mouth of Largo'.<sup>4</sup> By the middle of the eighteenth century Lundin Pier (q.v.) was evidently in existence, the relationship of which to the Keil Burn harbour is unknown, but the 'stone quay' of 1792, which was suitable for vessels of up to 200 tons,<sup>5</sup> was probably the existing pier. It may then, however, have been in a more primitive state than at present, as the harbour was not in good order in 1836,<sup>6</sup> and the pier has no doubt been rebuilt.

The lowermost stretch of the burn arrives at sea-level through a gorge, the E. bank being revetted with masonry which coalesces, lower down, with the face of the quay, while the W. side is bordered by a strip of tidal sand interspersed with rocks. About a dozen high mooring-posts have been set up on this strip, but some of them are now reduced to stumps. The beach and the harbour in general are screened from the W. by the seaward-running ridge of rock utilised by Lundin Pier.

Largo pier projects some 210 ft. from the line of high water on the foreshore, and is 30 ft. wide at its landward and rather more at its seaward end. Its W. side is built mainly of boulders, but has been patched and apparently raised somewhat in height with large irregular slabs, the whole being also mortared; it shows a slight batter, and is provided with upright wooden fenders. On the E., the batter at the base is very pronounced, the sloping surface being formed of boulders with heavy pointing. The top of the pier is unpaved, bears four large tree-butt pawls and a number of mooring-rings, and its lip was formerly edged with a wooden batten, now replaced by cement.

<sup>1</sup> *RPC*, I, 381.<sup>2</sup> *RMS*, 1513-46, No. 2691. An earlier charter (1482-3) mentioned only 'terras et villam' (*ibid.*, 1424-1513, No. 1563).<sup>3</sup> *Description*, 11.<sup>4</sup> Inventory of Crail Charters, No. 472, H.M. General Register House (B/10/12/2).<sup>5</sup> *Stat. Acct.*, IV, 538.<sup>6</sup> *NSA*, IX, 442.

*Leith, Edinburgh.* NT 270764

The estuary of the Water of Leith must have served as a shelter for shipping at all periods of the past, and the existence of a port is implied, by the charter of Holyrood Abbey,<sup>1</sup> as early as 1128. In early times, craft presumably were beached on the foreshore, especially on the right bank, where the street fronting on the water is still called The Shore. Improvements, however, were certainly in progress by 1398, when Edinburgh, which owned the port but not the adjoining land, received permission to dig up earth and sand for the building or enlargement of the port.<sup>2</sup> The right to bridge the river also was obtained. It may have been at this time that The Shore acquired the form that it still retains, of a combined street and quay. The first bridge was probably built at this time too, as there is nothing to show that Abbot Bellenden actually built the bridge for which he made provision in 1493.<sup>3</sup> Tolls for the repair of the harbour were authorised more than once in the course of the Middle Ages,<sup>4</sup> and of particular interest are allusions, in 1505 and 1508, to the removal of stones from the entrance-channel,<sup>5</sup> in view of the trouble caused later by shifting sandbanks. The first of these passages gives the further information that the channel was marked with beacons, and the second that a 'bulwark' existed on its E. side.

This mention of a 'bulwark', presumably a breakwater, is the earliest notice of a pier as distinct from the quays in the town, and it is corroborated by the Petworth House plan of 1560,<sup>6</sup> which shows a pier continuing the line of The Shore and finishing on a rocky shoal or accumulation of boulders. A similar shoal is marked on the W. side of the channel, but no construction. Another map,<sup>7</sup> surveyed between 1682 and 1689, but not published until 1756, shows a pier in the same position, with enclosures or buildings adjoining its landward end which may represent an early phase of the Timber Bush.<sup>8</sup> In addition, a pair of piers on the W. bank, apparently just N. of where the Custom House stands today, are shown. These latter piers are oddly arranged, as one of them, which is continuous with the left-bank quays in the town, takes the form of a hook, forming a bag-shaped basin covered on the N. by a straight pier which projects slightly into the channel. A painting of about 1710<sup>9</sup> suggests that the outer pier was likewise hooked, and ended in a timber section, its inner part, and the whole of the inner pier, being of ashlar, most of it rusticated. The E. pier was all of timber. Adair (1703) notes the 'high and strong Peir' on each side of the entrance, and the 'fine Key of Hewen Stone built all-along from the Bridge downwards'.<sup>10</sup>

Maitland states that the reason for building an E. pier was to check the formation of sand-banks in the harbour-mouth. By his account,<sup>11</sup> 'a strong Head or wooden Rampart was erected a considerable way into the Frith' about the middle of the sixteenth century, and this was no doubt the work shown on the Petworth House plan, but it proved unsuccessful, and a further length of 'wooden Fence' was added, with a westward inclination. This also failing of effect, 'the present [1753] Stonern Pier, at the northern End of the said Fence, was erected about the year 1722'.<sup>12</sup> He adds that, in spite of all these measures, the bar continued to form, and the necessity for procuring a deeper entrance-channel was a principal factor in the planning of the new docks in the nineteenth century.<sup>13</sup>

The piers as they existed in 1777, just after Maitland's time, are shown on a plan of the town by Alexander Wood.<sup>14</sup> On the E. side of the channel there is a 'timber pier', apparently founded on or reinforced externally with boulders,<sup>15</sup> and prolonged by an addition in stone as described by Maitland. This combined work, of timber and stone, seems to have followed much the same line as the W. margin of the present dock-area, and to have ended somewhere short of the Albert Dock entrance-basin. West of the channel, the place of the oddly-shaped piers and pool figured by Collins (see above) has been taken by the 'Ballast Key', opposite the Timber Bush, with an indentation marked 'Carpenter's Yard' to the W. of it and, W. of this again, the 'North Pier', an angled work with its outer section pointing W. of N. This last ends at a point just E. of the present entrance to Victoria Dock, leaving a wide entrance to the harbour approach which was protected from the E. by the overlap of the Stone Pier.

Another important feature in the harbour's development must have been the siting of the bridges. The position of the earliest bridge is securely fixed, at Church Street, by its association with Bellenden's chapel,<sup>16</sup> and as Collins' and Alexander Wood's plans both agree with the record evidence on this point it seems necessary to infer that the Petworth House plan was wrong in placing the bridge at the end of Tolbooth Wynd. The old bridge was removed after 1791<sup>17</sup> and its function was taken over by a draw-bridge at Tolbooth Wynd, to which another was added, at Bernard Street, before 1826.<sup>18</sup> The effect of these changes was to make more space available upstream, as is shown by the appearance, on John Wood's plan of 1825, of two dry-docks above the site of the old bridge.

Other features deserving mention are the docks and shipyards marked by both Woods on the W. side of the harbour, A. Wood's 'New Quay' at the end of Tolbooth Wynd, and the ashlar facing of The Shore noted by Maitland.<sup>19</sup>

Of structural remains, however, to match the recorded features, virtually nothing can be found, as the port has been constantly worked over from period to period and has also been completely redeveloped since the beginning of the nineteenth century. For example, although The Shore of today seems identical with the harbour frontage on the plan of 1560, there is nothing to suggest that any given piece of quay-face is even a part of Maitland's 'Ashler Stonern Wall', let alone of any earlier construction. Similarly, the filled-up dry-docks on the W. bank correspond with those marked by A. Wood, but the character of the masonry would agree with a date much later than 1777. Again, although Church Street still exists,<sup>20</sup> no trace of bridge-abutments appears either at its returned end or on the opposite bank, which latter has been first adapted as a quay, and then heightened and built over. The sole portion of the estuary's banks that seems to have escaped adaptation to industrial uses is the stretch bordering North Leith Cemetery. This was instituted in 1664,<sup>21</sup> but the heavily battered, dry-stone facing cannot be attributed to any particular period. On the other hand, past vicissitudes have left their imprint on the general scene, with the result that such matters as the harbour's size and shape, and the relationship of buildings to quays, bridge-sites and foreshore, have an archaeological significance.

<sup>1</sup> Lawrie, A. C., *Early Scottish Charters*, 117.

<sup>2</sup> *Charters and Documents relating to the City of Edinburgh* (Scottish Burgh Records Society), 48.

<sup>3</sup> *RMS*, 1424-1513, No. 2193. That he did so seems simply to have been assumed by Maitland, W., *The History of Edinburgh*, 498.

<sup>4</sup> *Charters and Documents, etc.*, 63, 66, 133.

<sup>5</sup> *Extracts from the Records of the City of Edinburgh* (Sc. Burgh Records Society), 1403-1528, 99, 113.

<sup>6</sup> *PSAS*, xcv (1961-2), 280 ff., Pl. L.

<sup>7</sup> *Pilot*, 'Edinburgh Frith'.

<sup>8</sup> 'The place callit the Burse', along with Little London, had been appointed for the reception of Norwegian timber-cargoes as early as 1582 (*Extracts from the Records of the City of Edinburgh*, 1573-89, 235); it should not be confused with the 'Bourse' in Paunch Market, on which see Irons, J. Campbell, *Leith and its Antiquities*, I, 303, and Maitland, op. cit., 496 f.

<sup>9</sup> Preserved at Trinity House, Leith, and reproduced by Irons, op. cit., II, opp. p. 146.

<sup>10</sup> *Description*, 8.

<sup>11</sup> op. cit., 497.

<sup>12</sup> *ibid.* See also Irons, op. cit., II, 147.

<sup>13</sup> Irons, op. cit., II, 198 ff.

<sup>14</sup> I am indebted to the Leith Docks Commissioners, and Mr Sinclair of their staff, for an opportunity to study a copy preserved in their office.

<sup>15</sup> Illustration in Irons, op. cit., plate opp. p. 198.

<sup>16</sup> *RMS*, 1424-1513, No. 2193.

<sup>17</sup> Map of 1791 by W. Morison marks 'Road to the Old Bridge'. H.M. General Register House (R.H.P. 20). Irons (op. cit., II, 178) says 'after 1788'.

<sup>18</sup> J. Wood's plan marks 'Old Draw Bridge' at Tolbooth Wynd and 'North Draw Bridge' at Bernard Street.

<sup>19</sup> op. cit., 487.

<sup>20</sup> Now renamed Quayside Street, but appearing as Church Street on maps.

<sup>21</sup> *RCAM, Inventory of Edinburgh*, No. 219.

### *Leven, Fife.* NO 380004

The port of 'Levenmouth' is mentioned in documents of 1565,<sup>1</sup> 1602<sup>2</sup> and 1621,<sup>3</sup> in the last case as a 'porte and heavin'. Sibbald, in 1710, noted a small harbour at the mouth of the river,<sup>4</sup> and Pococke, in 1760, said that this would take vessels of between two and three hundred tons.<sup>5</sup> Roy, however, marked no pier on his map of Scotland (1747-55), and until a 'small quay' was built shortly before 1836<sup>6</sup> the harbour was probably the natural river-mouth. The curved building-line of the street named Shorehead suggests that a bay formerly extended into the town, as seems to have happened at Culross (q.v.), with its 'Sandhaven'. The existing wharfage on the river-front shows no features of archaeological interest.

<sup>1</sup> *RPC*, I, 381.

<sup>2</sup> *ibid.*, VI, 373.

<sup>3</sup> *APS*, IV, 673.

<sup>4</sup> *Fife*, 328.

<sup>5</sup> *Tours in Scotland* (S.H.S.), 276.

<sup>6</sup> *NSA*, IX, 273.

### *Limekilns, Fife* (fig. 7a). NS 075833

No date can be suggested for the origin of the port of Limekilns, but shipping is likely to have used this comparatively sheltered tidal anchorage inside the 'Ghauts',<sup>1</sup> or 'Goat Rocks', at any period of the past. The records first mention Limekilns, under the name of 'Gellald', in 1362,<sup>2</sup> when David II gave the port to Dunfermline Abbey. At that time it must already have been a going concern, with an established trade in wool, skins and hides. Later records are fairly numerous,<sup>3</sup> although they make no mention of harbour installations. At the end of the seventeenth century the harbour was 'commodious' for the shipping of coal,<sup>4</sup> and Roy's map of Scotland (1747-55) marks a pier in the middle of the bay.

The harbour area is a large tidal pocket, enclosed to seaward by the Ghauts and on the E. by a low bank of shingle interspersed with flat rocks, and partially covered on the W. by the pier, which is probably the same as the one marked by Roy whatever changes may have been made to it since his time. This pier



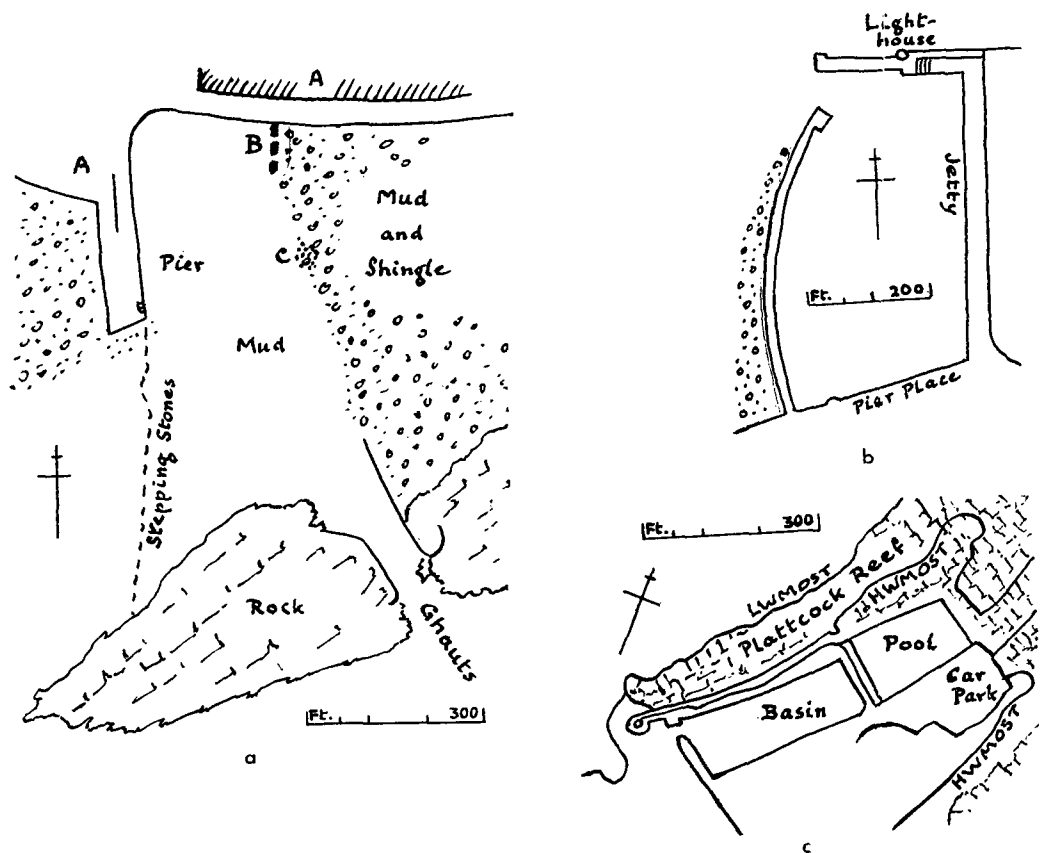


FIG. 7. *a* Limekilns (AA, sites of former sluicing-ponds; B, site of pier; C, probable site of quayside structure), *b* Newhaven, *c* North Berwick.

runs straight out southwards, its head being separated from the Ghauts by about 120 yds. of mud; its length is 230 ft. on the W. but more on the E., where its face turns into a sea-wall revetting a roadway, and its average breadth 65 ft. The masonry is of rather roughly squared dry-stone blocks, but its end, which seems to have been rebuilt, is mortared and has a flight of steps on its E. side. The surface is grassed over and carries three light wooden pawls at the end; its landward portion is divided longitudinally in the centre by a wall 109 ft. long, built in 1870 to shelter craft moored on the E.<sup>5</sup> A pond for use in scouring mud out of the harbour formerly existed about 80 yds. E. of the pier, where the house called Carey now stands;<sup>6</sup> another, now also vanished, is marked on the 6-in. O.S. map of 1854 just W. of the landward end of the pier.

The Ghauts are formed by a low ridge of rock, which runs from ENE. to WSW., and separates the harbour area from the Firth. The ridge has been cut through to make an entry for ships, the passage being about 150 ft. long by up to about 90 ft. wide; the width, however, is difficult to estimate on account of collapsed stonework. On the W. side of the cut the roughly trimmed rock-face stands up to 5 ft. in height, with a built wall, heavily battered, rising as much as 8 ft. in addition. This wall runs straight for about 120 ft., decreasing in height as the surface of the reef slopes downwards, but curves back at each end, its footings disappearing under fallen debris. There was once a quay here, flanking the cut, but its size is impossible to estimate as the top of the reef is widely strewn with boulders and tumbled stones, many of them roughly shaped. On the E. side, the rock is again cut to a face up to 5 ft. high, with a wall up to 9 ft. high on top of it. The seaward end of this wall curves eastwards, and its footings return northwards across the top of the reef, evidently defining a quay about 20 ft. wide. Mooring-posts survived on both quays

at least until 1900.<sup>7</sup> From the N. end of the cut, the E. wall or its footings may be traced shorewards for about 230 ft. along the edge of the bank of shingle mentioned above, but it is stated locally<sup>8</sup> that a break-water originally followed this line all the way to the land, and in fact some suggestive traces may be seen from place to place on this alignment. The chief of these is a pier, running out from the sea-wall at a point about 90 yds. E. of the main pier and now reduced to footings and the stumps of timber piles; this no doubt represents the pile-built structure that is said to have existed in the early nineteenth century.<sup>9</sup> It seems to have been some 10 ft. to 12 ft. wide, and probably ended at a flat rock, the W. side of which has been cut into and which carries a massive iron ring. Again, beyond this rock and about 90 yds. from the land, there may be seen a large roundish patch of stones, heaped together and with large blocks lying round the circumference, which may possibly have been the base of some quayside structure.

<sup>1</sup> Scots 'goat', a trench.

<sup>2</sup> *Dunfermline*, No. 391, p. 270.

<sup>3</sup> e.g., *Laing Charters*, No. 1177 (1589); *Dunfermline*, p. 496 (1603); *RPC*, I, 381 (1565); VI, 373 (1602); 3rd ser., III, 501 (1672).

<sup>4</sup> *Geogr. Coll.*, I, 287.

<sup>5</sup> Anonymous, *Limekilns* (private circulation, 1929), 13.

<sup>6</sup> Information from Mr H. J. Mackenzie, *Limekilns*.

<sup>7</sup> Cunningham, A. S., *Inverkeithing, etc.*, 163.

<sup>8</sup> Information from Mr H. J. Mackenzie, *Limekilns*.

<sup>9</sup> Cunningham, *op. cit.*, 167.

#### *Lindores Pow, Fife.* NO 2418

Opening as it did into the South Deep of the Firth of Tay, Lindores Pow, like the neighbouring Shore of Newburgh (q.v.), was a convenient place for vessels to lie on their way up the river to Perth.<sup>1</sup> A ferry was also crossing the Firth from Lindores at least as early as 1600, when a charter mentions 'libertatem cymbe vulgo ane ferrie boit';<sup>2</sup> while a record of 1722 states that 'from this to the pou of Erroll which lyes opposite to it is a common ferrie each side keeping two boats'.<sup>3</sup> Before the days of agricultural improvement, as a result of which a large field has been reclaimed from the mud-flats and the mouth of the Pow canalised, a natural tidal inlet probably existed here, by which boats could have approached conveniently close to the Abbey precinct. For that matter, the Pow could equally well have served the pre- and proto-historic dwellers in the fort on Clatchard's Craig, distant some 800 yds. from the Abbey site.

<sup>1</sup> *Description*, 15.

<sup>2</sup> Laing, A., *Lindores Abbey and its Burgh of Newburgh*, 498.

<sup>3</sup> *Geogr. Coll.*, I, 305.

#### *Lundin, Fife* (fig. 6b). NO 415024

A Parliamentary Report of 1847<sup>1</sup> speaks of a natural rock-ridge, west of the harbour of Largo (q.v.), which was named 'the Pier of Lundin'; but the attribution of the name to the ridge would seem to be incorrect as the remains of an actual pier may be seen on the site, although in the last stage of dilapidation. Its landward end, repaired and rounded off, stands as a masonry platform facing the sea, but the remainder, which is below high-water mark, is reduced to a strip of tumbled boulders. This runs seawards along the W. side of the ridge of rock and ends in a westward curve, while the flank of the ridge, above high-water mark, has been cut back to form a naturally protected walk. The beach W. of the pier is a stretch of bare tidal sand, the boulders piled along its W. side perhaps representing the remains of a companion work, intended to enclose the other side of a harbour. It is believed locally that such a harbour was made by a former proprietor of Lundin estate, as a rival to the haven at Largo (q.v.), but that the venture was foiled by a sand-bar between the two pier-heads.<sup>2</sup> The small building by the landward end of the pier may well be contemporary with the structure.

A pier evidently was standing in the seventeen-fifties, as it is marked on Roy's map of Scotland, but perhaps not in 1703, as Adair alludes to a 'creek',<sup>3</sup> probably meaning the mouth of the Keil Burn. In 1565, too, the name used was 'Largoburn'.<sup>4</sup> The work may not have survived as late as 1792, as the *Statistical Account*<sup>5</sup> again suggests Largo pier, and by 1847 its existence had clearly been forgotten.

<sup>1</sup> *Tidal Harbours*, xxv.

<sup>2</sup> Letter (20th August 1970) from Mr M. O. Shepherd, Leven.

<sup>3</sup> *Description*, 11.

<sup>4</sup> *RPC*, I, 381.

<sup>5</sup> Vol. IV, 538.

#### *Methil, Fife.* NT 3799

No remains of the old harbour of Methil seem to have survived the construction of the modern docks, but the place deserves to be mentioned for various reasons. The fact that it was built about 1650<sup>1</sup> points to activity at that time in the local coal-mining industry, and as its builder was the 2nd Earl of

Wemyss one is tempted to regard the harbour at West Wemyss, the date of which is unknown, as a parallel and contemporary development.<sup>2</sup> This seems the more likely as the plans of the two harbours, as marked on Roy's map of Scotland, are distinctly similar, both consisting of a pair of piers which curve out from the shoreline to enclose a harbour-area segmental in shape. Adair, rather earlier, had noted 'two strong, high and well-built moles of hewen stone'.<sup>3</sup>

A point of incidental interest is the colliery waggon-way, two miles long, that served the harbour at the end of the eighteenth century.<sup>4</sup>

<sup>1</sup> *Stat. Acct.*, xvi (1795), 522.

<sup>2</sup> *ibid.*

<sup>3</sup> *Description*, 11.

<sup>4</sup> *Stat. Acct.*, xvi, 519.

*Morison's Haven, East Lothian.* NT 372738

In 1526 Newbattle Abbey was authorised to build a harbour on the lands of Prestongrange, its stated purpose being to provide shelter for fishing-boats as fishermen were suffering casualties and loss 'defectu boni portus',<sup>1</sup> but construction may not have begun before 1541, when one Alexander Atkinson (Acheson) received the place in feu-ferme in order to build a harbour, with tide-mills, and to repair boats. By 1553 Acheson had expended a large sum on building and fortifying the harbour, and his son John was offering to complete the work on certain conditions.<sup>2</sup> The existence of the tide-mills seems to be confirmed by the use of the name 'Port au Moulin' in correspondence which passed at this time. Adair's record (1703), presumably based on observations made some time earlier, describes the harbour as 'a small Creek, with a Rocky and narrow Entry', but considerable improvements, if not wholesale reconstruction, seems to be implied by the request for an imposition, made by William Morison of Prestongrange in 1700, 'for building an harbour at Morison's Haven'. Further improvements were made in the eighteenth and nineteenth centuries, and in 1796 the harbour was held to be one of the safest in the Firth;<sup>3</sup> it served the seaborne trade of Prestonpans, and also the local industries and coal-field, but fell into disuse after the first World War.

The harbour in its final phase is illustrated by the 25-in. O.S. map revised in 1913-4.<sup>4</sup> This shows it as being about 720 ft. long on an E.-W. axis, with an inner and an outer basin, each up to some 160 ft. wide, connected by a short, narrow neck. Its total area was just under two acres. The N. side was formed by a breakwater pier about 550 ft. long, at the head of which there was an entrance some 70 ft. wide. South of the entrance, a slightly curving pier about 110 ft. long covered the W. end of the outer basin; at its head there was a roundel carrying a light. South of the outer basin there was a large pond, supplied with water from the adjoining colliery and probably intended to wash silt out of the harbour. Between this pond and the inner basin is marked the site of a 'fort', the remains of which were still visible in 1853; this was presumably the work built by the Achesons in the middle of the sixteenth century.

Of the foregoing structures very little now survives, as the remains gradually are being buried through the reclamation of the foreshore, but the record made in 1961<sup>5</sup> helps to fill in the picture. Some stretches of the breakwater pier still emerge through the encroaching shingle, the work being faced with large dry-stone blocks and slabs, well-dressed and set some vertically and some on bed. Many show holes for a lewis, and at least one fragment of the core, which is largely of boulders, has been drilled and split by blasting. The part of the top that has survived contains both boulders and large blocks, the latter roughly shaped but not regularly squared. The work is thus not homogeneous, no doubt as a result of frequent repairs, but some of it may well go back to the reconstruction of the early eighteenth century; the top, in particular, resembles that of the Old Harbour at Donibristle (q.v.), for which a similar date was suggested. The pier-head is probably later, as many of its slabs show stugging, but it too has been patched considerably and rebuilt. The short pier S. of the entrance is now covered up with debris, but in 1961 it was found to be neatly built of well-dressed dry-stone blocks, some of them droved, and it may well have dated, in its final form, from the early nineteenth century. The roundel at its head was of concrete, and evidently a late addition.

<sup>1</sup> References to sources will be found in *PSAS*, xcv (1961 2), 300 ff., in a paper describing this harbour at greater length than does the present account.

<sup>2</sup> *Maitland Miscellany*, I, 234 ff. For this reference I am indebted to Mr A. L. Murray.

<sup>3</sup> *Stat. Acct.*, xvii, 72.

<sup>4</sup> Reproduced in *PSAS*, loc. cit.

<sup>5</sup> *ibid.* Illustrations Pl. LVII.

*Motray Water*

See Eden Estuary

*Muirhouse, Edinburgh.* NT 209770

Some remains of the 'small Tide Haven' that belonged to Muirhouse in 1703<sup>1</sup> may be seen on the foreshore at a point just east of north from the Commodore Hotel (Broomfield). In Adair's time it comprised 'two stone Peirs', but today only the W. one is identifiable while the E. one has been reduced to a belt of tumbled boulders, in which not even footings can be recognised. Of the W. pier there survives only a double row of set boulders, the footings of the facing-walls, and these show the work to have been about 16 ft. wide. They begin well below high-water mark, at the bottom of a strip of beach, run straight out northwards, then curve north-eastwards, and fade out close to low-water mark at what was probably the harbour's entrance. Some of the boulders used at the landward end are exceptionally large, and none of them seems to have been dressed. The length of the enclosed area from N. to S. may have been about 150 ft. The debris representing the E. pier lies at a slightly higher level, and may be founded on a ridge of rock, but if so this is hidden by the debris itself.

Just W. of the W. edge of the belt of debris a row of dressed blocks appears through the sand of the beach, suggesting the margin of a roadway. The relatively small size of the blocks, as well as their neat arrangement, contrasts strongly with the boulder-construction of the piers, with which they may very well have had no connection.

<sup>1</sup> *Description*, 8.

*Musselburgh (Inveresk), Midlothian.* NT 3472, 3473

The mouth of the River Esk is today totally unnavigable, as a tidal bank of sand and shingle stretches out from the land for more than 1,000 yds., but in spite of its drawbacks, and of the better facilities available at Fisherrow (q.v.), it seems to have served Musselburgh as a port at various times in the past. Proof of the existence of harbour-works of some kind comes in 1713, when a Burgh Council minute refers to a new harbour as being situated 'att the watter mouth'.<sup>1</sup> A new harbour, presumably this one, had in fact been decided on in 1703, was still being discussed in 1707, and seems to have been under construction in 1712,<sup>2</sup> its position being defined later as at the mouth of the Mill Lade<sup>3</sup> (NT 345733). This experiment, however, evidently proved unsuccessful, as another new harbour was begun at Fisherrow (q.v.), in 1743.<sup>4</sup> On a later occasion the disadvantages of the estuary site were described at length in a report to the Burgh Council by the architect, Cuthbert Clark,<sup>5</sup> while Adair's opinion of it had likewise been unfavourable.<sup>6</sup>

Records of a port, although not specifically of harbour-works, at Musselburgh or Inveresk as distinct from Fisherrow, may be quoted from some earlier periods. (i) A charter of David I to Dunfermline Abbey<sup>7</sup> mentions ships 'quae in portu de Inueresc aplicuerint'. (ii) A Papal letter of 1184 to the same Abbey<sup>8</sup> alludes to 'burgum et portum de Muskilburgo'. (iii) In 1335 the English governor of Edinburgh Castle requisitioned boats at Musselburgh.<sup>9</sup> (iv) In 1565 Musselburgh was on the list of ports to be watched for disaffected persons.<sup>10</sup> (v) In 1624 Musselburgh and Fisherrow were both mentioned in the same context as ports from which coal was shipped.<sup>11</sup> It thus seems likely that the silting up of the estuary has been gradual, and that in the more distant past the drawbacks were a good deal less serious than they later became, and this inference seems to be supported by the geological evidence, which is said to make it 'entirely possible that the mouth of the Esk could have constituted a usable port in historic times'.<sup>12</sup> It is thus interesting to observe that, if the Esk had been navigable in the Middle Ages as far, or nearly as far, as the Old Bridge, the Burgh would have possessed a site for a quay similar to the harbour-frontages of several Fife seaports, and even reproducing an association of High Street with riverside strongly resembling that which existed at Perth (q.v.). A theory of progressive silting, which only reached serious proportions in recent centuries, would naturally bear on the problem of Roman arrangements for the service of the forts and road-terminal at Inveresk.

<sup>1</sup> Musselburgh Burgh Records, 22nd June 1713, H.M. General Register House (B/52/31).

<sup>2</sup> *ibid.*, 3rd May 1703, 7th June 1707, 5th June 1712.

<sup>3</sup> *Leith Burghs Pilot*, 8 Dec. 1866. For this reference I am indebted to Mr R. L. Scarlett.

<sup>4</sup> Musselburgh Records as above, 22nd Sept. 1743 (B/52/3/2).

<sup>5</sup> *ibid.*, 1st Mar. 1787 (B/52/3/3).

<sup>6</sup> *Description*, 7.

<sup>7</sup> *Dunfermline*, 11, No. 13.

<sup>8</sup> *ibid.*, 157. The same wording is repeated in a similar letter, of 1234 (*ibid.*, 175).

<sup>9</sup> *Cal. of Docts.*, III, 352.

<sup>10</sup> *RPC*, I, 381.

<sup>11</sup> *ibid.*, XIII, 555.

<sup>12</sup> Letter (9 Jan. 1967) from Mr R. A. Eden, Institute of Geological Sciences, Edinburgh.

*Newburgh, Fife.* NO 235186

In 1266 Lindores received a charter from Alexander III which erected its town as a free burgh, with

the usual liberties, but nothing is said about a port, and a clause specifically reserving the rights of the King's burghs no doubt prevented or restricted maritime trade.<sup>1</sup> Like Lindores Pow (q.v.), the Shore of Newburgh probably served, as in later times, as a stopping-place where vessels could wait for the tide, and where those whose draught was too great for the shallower water upstream could tranship cargo into lighters for the rest of the journey to Perth.<sup>2</sup> In the nineteenth century a ferry to Port Allen is recorded.

The range of quays that now constitutes the town's river-frontage contains little of archaeological interest, but a hint of some earlier arrangement is perhaps to be seen in the fact that 'Shore' is marked on the O.S. maps in an area lying somewhat inland from the river, and now fully built over. On the front it is possible to identify the 'three continuous piers' of 1793,<sup>3</sup> as well, probably, as the two others built shortly before 1836.<sup>4</sup> The latter, at the E. end of the range, are mainly of concrete and brick, while the former, and the bays between them, show for the most part squared and well-coursed masonry, some of it scabbled or rusticated, with cement patches and mortar from place to place. The top of the westernmost pier, at the end of West Shore Road, is completely covered with cement. The only evidence of what may be earlier work occurs at the lowermost levels, and that not everywhere; it takes the form of a basal layer of smaller irregular masonry, poorly dressed and coursed. The W. pier also carries two stone pawls, one squared and the other a slab, which may be earlier survivals. The length of the whole frontage is about 550 ft., and that of the W. portion, with the three piers of 1793, about 270 ft.

<sup>1</sup> Laing, A., *Lindores Abbey and its Burgh of Newburgh*, 142.

<sup>3</sup> *ibid.*, 172.

<sup>2</sup> *Stat. Acct.*, VIII (1793), 172, 182.

<sup>4</sup> *NSA*, IX, 72.

#### *Newhaven, Edinburgh* (fig. 7b). NT 254771

Newhaven first comes to historical notice<sup>1</sup> at the beginning of the sixteenth century, when James IV chose it as the site of a naval dockyard, introduced a body of workpeople, and, in 1506, founded a chapel for their benefit. The haven evidently comprised an ordinary harbour as well as the shipbuilding yard, as the charter of 1510-1, by which the place was given to Edinburgh, mentions bulwarks and defences for protecting ships as well as a foreshore to which they could be anchored, with their cables led inland as far as the inner frontage ('*frontem interiorem*') of some houses on the S. side of the village street. Whether one or two piers existed at this time is doubtful, as the charter uses both the singular and the plural – in one passage '*munitioem, videlicet le père et bulwark*' and in another '*in le bulwarkis*' – but in 1556 there were certainly two as a '*west bulwerk*' is mentioned. With this record the Petworth House plan of Leith (1560)<sup>2</sup> is in agreement, as it shows two piers built out from the shore on what look like boulder foundations, the W. pier inclining somewhat towards the E. one as if to shorten the open N. side. No doubt the shore between the piers was left in its natural state, so that vessels could be beached and secured in the manner indicated in the charter. The Petworth House plan shows no trace of the dockyard, which had no doubt disappeared by 1560, but some remains of a harbour survived in 1703,<sup>3</sup> and Pococke, in 1760, could still mention both the dockyard and the harbour as matters of history.<sup>4</sup> To judge by their relationship to the church and village, the works of 1560 would seem to have occupied much the same position as the existing harbour, and it is possible that what seems to be an arc of boulders or rocks on Collins' plan of Leith<sup>5</sup> may represent ruined foundations; for that matter, a rickle of boulders is marked, on a plan of 1831,<sup>6</sup> in the position of the present W. pier.

By Pococke's time Newhaven had become a '*poor fishing village*',<sup>7</sup> but it also served, with Leith, as a southern terminal to the ferries from Burntisland and Kinghorn, or Pettycur (q.v.). In 1792 an Act was passed<sup>8</sup> for improving these ferries and '*for rendering the Harbours and Landing Places more commodious*', and it is perhaps to this period that the earliest work now visible at Newhaven should be attributed. This consists of the profile of a sloping jetty, which appears clearly in the face of the E. pier, together with some courses of masonry which heightened its lower portion before the pier was built on top of both. This supposed jetty is about 110 yds. long as measured from the edge of Pier Place, which overrides its landward end; its surface is here about 5 ft. lower than the street, and its seaward end fades out in the stonework of the pier just above low-water mark. On this showing, the pier itself, with the high wall on its E. side and its returned end as far as the disused light-house, would belong to a later phase, as illustrated by the plan of 1824 in *Wood's Town Atlas*.

*Light-house.* The light-house, of which the seaward side, as well as the interior, was inaccessible when it was visited, is founded on a battered base of scabbled ashlar. Part of three courses of this may be seen to seaward, although the rest has been overbuilt by the later breakwater. The building is circular on plan, with an external diameter of about 8 ft., and measures 9 ft. 6 in. to the top of the moulded cornice-

course; above this there is a blocking-course, and on top a cement-covered dome, from the top of which protrudes the end of a ventilating pipe. The masonry is sandstone ashlar neatly cut to the curve, the base-course projecting slightly. The door, facing E. along the pier, is 6 ft. 2 in. high by 2 ft. 9 in. wide; a window 2 ft. 6 in. by 2 ft. 2 in., looks inwards over the harbour. Insofar as the inaccessible seaward side may be seen, the light seems to have been shown in a NW. direction, i.e. towards the approach to the harbour-entrance, by means of a small horizontal window set about half-way up the side of the building.

<sup>1</sup> Except as otherwise stated, this article follows Irons, J. Campbell, *Leith and its Antiquities*, I, 115, 258 ff., App. No. 28; II, 456, 468.

<sup>2</sup> *PSAS*, xcv (1961-2), Pl. L.

<sup>3</sup> *Description*, 8.

<sup>4</sup> *Tours in Scotland* (S.H.S.), 308.

<sup>5</sup> *Pilot*.

<sup>6</sup> Dall, P. and Leslie, J., in H.M. General Register House (R.H.P. 3169).

<sup>7</sup> *loc. cit.*

<sup>8</sup> 32 Geo. III, cap. 93. I am indebted for this reference to Mr B. C. Skinner.

#### *Newmiln*

See Polerth.

#### *Newport, Fife. NO 417277*

The ferry from Newport to Dundee was discontinued in 1966, on the opening of the Tay road-bridge, and the jetty that formerly served it was inaccessible when the present survey was made. The 25-in. map, however, indicates that it is 360 ft. long by 70 ft. wide, its outermost 260 ft. being subdivided lengthwise by a wall. It was built in 1823-6 to the design of Thomas Telford.<sup>1</sup> For earlier arrangements at this ferry see under East Newport and Woodhaven.

<sup>1</sup> *Tidal Harbours*, xxvii.

#### *North Alloa, Clackmannanshire; Ferry Landing. NS 881922*

Alloa Ferry is mentioned in a charter of 1620,<sup>1</sup> when it was given to the Earl of Mar along with the port and 'pow' of Alloa (q.v.). The grant included the ferry-boats, and applied to both ends of the ferry although the S. terminal was not on the Earl's land. The ferry was formerly an important link in local communications, particularly in the nineteenth and earlier twentieth centuries, when South Alloa handled coal and pitwood in considerable quantities.

The jetty that served the N. terminal may still be seen at the foot of Glasshouse Loan. Measured from the head of a small dock formed on its E. side, no doubt to accommodate ferry-boats, it is about 400 ft. long, its breadth being about 35 ft.; the W. side is now flanked by made ground. The outer part of the E. face consists of large, rough blocks, poorly shaped and coursed, while the landward part and the head of the dock are well built of droved ashlar. The surface is paved, in the upper part, with small blocks of irregular shape, and in the lower with large setts.

Just E. of the dock, below Forth Street, there is a pond, not now holding water, with remains of timber sluice-works at its outer end;<sup>2</sup> this served to hold up water at high tide and to wash away silt from beside the jetty. The 25-in. O.S. map surveyed in 1865 also marks a small pond on the W. side of the jetty.

<sup>1</sup> *RMS*, 1609-20, No. 2125.

<sup>2</sup> When revisited in 1968, this pond was found to have been filled up and obliterated.

#### *North Berwick, East Lothian (fig. 7c, Pl. 31a). NT 553855*

Between the East and West Bays at North Berwick there projects into the Firth a mass of rock formerly a small tidal island joined to the mainland by a bridge. On it stood the old church of St Andrew and a hospital for pilgrims.<sup>1</sup> The latter, like its counterpart at Earlsferry (q.v.) on the Fife coast, was founded in the twelfth century by Duncan, Earl of Fife.<sup>2</sup> Along the NW. side of the island, and separated from it by a narrow tidal channel aligned from NE. to SW., there lies the Plattcock reef, a straightish ridge of rock which rises above high-water mark. The harbour has been formed, and brought to its present condition over the years, by building a breakwater along the crown of the ridge so as to flank the channel, cutting off the wider (SW.) portion of the channel from the rest, with a transverse work, partially closing its SW. end, and improving the interior with wharfage. Adair's record (1703) of a harbour on the W. side of the island 'within a Peir of Stone'<sup>3</sup> would correspond with the first or second stage of this process.

The harbour is clearly very old. 'Ports' at each end of the pilgrims' ferry to Fife are mentioned in a

charter of 1177,<sup>4</sup> travellers were crossing to Earlsferry in 1304,<sup>5</sup> commercial use is referred to in 1373,<sup>6</sup> North Berwick being by that time a free port, and a *novodamus* charter of 1658<sup>7</sup> implies that a 'haven' had existed in an indefinitely distant past. But although records of work on the harbour<sup>8</sup> are fairly numerous, no clear picture emerges of the actual stages by which the works developed, as more recent construction inevitably has disguised the evidence for earlier phases and the records are not always lucid.<sup>9</sup> Apart from the features mentioned in the next two paragraphs, there is nothing in the general appearance of the harbour to suggest a date earlier than the eighteenth century.

The breakwater, in the first place, presents a sharp contrast to the rest of the works, its NE. portion consisting, in the main, of boulders and large, rough blocks. These may be seen in Pl. 31a, together with a patch of squared masonry said locally to have been inserted in 1898 to repair damage by a storm. Messrs Robert Stevenson and Sons remarked in 1812 on the breakwater's rude workmanship and its appearance of 'great age'.<sup>10</sup> Its alignment is slightly sinuous, its top, 12 ft. to 15 ft. wide, is uneven, and its outer face is of irregular dry-stone masonry secured with wooden wedges (Pl. 31a). This type of stonework may be matched, on this part of the coast, only in the East Pier at Dunbar (q.v.), where a date in the later sixteenth century is suggested and where wedges were also used.<sup>11</sup> It ends about 50 ft. short of the harbour-entrance, beyond which point the breakwater has been rebuilt.

The pier that closes the inner (NE.) end of the harbour, separating it from what is now a swimming-pool, goes back at least to the first quarter of the eighteenth century, and very possibly earlier.<sup>12</sup> The eighteenth-century date is established by references to a sluice, or sluices, in the Burgh Treasurer's accounts of 1726 and later, their purpose being to wash silt out of the harbour and their position in the transverse pier being vouched for by Robert Stevenson in 1811. No structure, however, can be seen today which suggests a comparable date, and in fact a sketch made in 1885<sup>13</sup> shows that, before the swimming-pool was formed, the wall that backed the pier consisted of stone-work similar to that in the most recent parts of the harbour, and consequently, if this pier ever bore any distinctively early features, they must have been obliterated by later additions and alterations.

To come down to the most recent works, the harbour as it stands is sub-rectangular in shape, and measures from 270 ft. to 306 ft. in length by 102 ft. to 110 ft. in breadth. It encloses an area of just over two-thirds of an acre, which dries out completely at low water. Its general appearance, of wharves faced with squared and coursed blocks of red igneous stone, is naturally due to the most recent repairs and additions, particularly those called for by storm-damage suffered in 1788, 1802 and 1811,<sup>14</sup> but a sketch-plan in Robert Stevenson's note-book, drawn when he was inspecting the damage of the last of these storms, shows that the quays were then laid out just as they are today, although the breakwater may have been somewhat lengthened in the reconstruction that followed.

In the disaster of 1811, the outer end of the breakwater was levelled almost to the ground for a length of 88 ft., while the SW. pier, on the opposite side of the entrance, was also so badly shattered that the uppermost 6 ft. of its height needed relaying. The renewed SW. portion of the breakwater contains some pulvinated work and a string-course, both rather reminiscent of the revetment behind the harbour at South Queensferry, and the parapet ends, at the pier-head, in a small roundel the top of which is reached by a stair. The NW. quay varies in breadth from 12 ft. to 30 ft. owing to the sinuosity of the old part of the breakwater, which rises above it, as a parapet, to a greatest height of 8 ft. 6 in. On this quay there are some very large pawls cut from the local red stone, the largest of which measures 4 ft. 6 in. in height by 1 ft. 2 in. in diameter at the top, and has a roughly quadrangular base 1 ft. 10 in. a side. There is another similar one on the SE. quay. Stone pawls up to 9 ft. in overall length are mentioned in the Burgh records in 1770, this dimension evidently including a base to be sunk deeply into the wharf. The SE. quay may well be the 'new quay' mentioned in the Burgh records in 1788; from its SW. end a flight of steps descends to the sands of the West Bay. The SW. transverse pier, at the outer end of the harbour, was presumably the 'cross-pier' contracted for in 1802, as the only other 'cross' structure, the NE. pier, had been in existence long before (see above). The harbour-entrance, which opens between the head of the SW. pier and the main breakwater, is 25 ft. wide and has chases and a crane for booms. The booms were installed in 1806 and were held to improve the safety of the harbour,<sup>15</sup> but Messrs Stevensons' report states that they contributed to the disaster of 1811 by increasing the pressure on the SW. pier. Steps to the harbour-bottom are provided in the N. and S. corners, and also on the SE. side. Cut-back rock-faces appearing here and there under the quays show where encroaching rocks have had to be removed, and the deepening of the harbour is recorded more than once, e.g. in 1804 Messrs Grieves and Bamber, of North Berwick, estimated for deepening and building, and in 1862 J. Young, of Sunderland, deepened the whole harbour to the depth of the entrance.

Associated with the harbour was a yard where boats were repaired or laid up. This seems to have occupied a position immediately SE. of the swimming-pool,<sup>16</sup> and to have been approached by way of a slip in the harbour's E. corner, where a mass of rock evidently has been cut away. The slip but not the yard is shown in Robert Stevenson's note-book, and also in a plan produced by his firm in 1861. The site of the swimming-pool is marked 'Basin' in the note-book, and Messrs Stevenson suggested enlarging the harbour in this direction, but the proposal was not taken up.

<sup>1</sup> RCAM, *Inventory of East Lothian*, 58.

<sup>2</sup> *Northberwic*, 5.

<sup>3</sup> *Description*, 6.

<sup>4</sup> *Northberwic*, 5.

<sup>5</sup> *Cal. of Docts.*, iv, 461.

<sup>6</sup> *Northberwic*, 27 f.

<sup>7</sup> *RMS*, 1564-80, 1831.

<sup>8</sup> The sources chiefly drawn on have been as follows: *CRB; Tidal Harbours*, App. C, 5; typescript *Records of the Burgh of North Berwick, 1727-1800*, and ditto 1801-83, preserved in the Town Clerk's office, for access to which I am indebted to Mr R. S. Wotherpoon, the Town Clerk; and North Berwick Burgh Records, preserved in H.M. General Register House and the Burgh Museum, North Berwick, for advice on which I am indebted respectively to Mr G. R. Barbour and Dr J. S. Richardson.

<sup>9</sup> Typical sources of obscurity are the obsolescence of the older descriptive names and imprecision in

compass directions. The Burgh Treasurer's Accounts may likewise be subject to startling omissions; see, e.g., *Corporations*, 270.

<sup>10</sup> MS. 'Report to the Chief Magistrate . . .' of North Berwick, dated Jan. 1812. I am indebted to Mr D. Alan Stevenson for permission to quote from this report and from notes made by Robert Stevenson in 1811, as well as to consult certain of the firm's plans.

<sup>11</sup> *PSAS*, xcix (1966-7), 178 f.

<sup>12</sup> For example, some rather costly operation seems to have been undertaken in 1696-9 (*CRB*, iv, 210 f., 294).

<sup>13</sup> By the late Dr J. T. Richardson, and preserved and shown to me by Dr J. S. Richardson.

<sup>14</sup> Burgh records and Messrs Stevenson's report, as above.

<sup>15</sup> *NSA*, II (Haddingtonshire), 388.

<sup>16</sup> Information from Dr J. S. Richardson.

#### *North Queensferry, Fife; Ferry Landings* (Pl. 29c). NT 1380

While the N. terminal of Queensferry Passage is now represented by the Town Pier (131803) at the lower end of Main Street, and by the West and East Battery Piers (133801, 134803) on the rocky point under the Forth Bridge,<sup>1</sup> it would be wrong to suppose that this arrangement has always obtained in the past. In fact, the earliest record that mentions the ferry alludes to 'passagium et navem de Invirkethin'<sup>2</sup> as if, about 1150, the ferry-boats worked out of Inverkeithing Bay rather than North Queensferry. It has also been suggested that the thirteenth-century terminal was on the so-called Hospital Lands, which bordered part of Inverkeithing Bay.<sup>3</sup> It is true that this arrangement would almost have doubled the length of the crossing, and would probably have increased its hazards, but in view of contemporary conditions, countervailing difficulties should perhaps be allowed for on the land route to North Queensferry by the Ferry Hills. However that may be, it seems certain that North Queensferry had come into use by 1323, as the chapel that stood just N. of the Town Pier was founded in that year.<sup>4</sup> Later records point to the use of more than a single landing, as must no doubt have been necessary to suit variations of wind and tide, and in 1794 there were said to have been several on each side of the Firth.<sup>5</sup> Traces of early landing-places, or of berths for laying up boats, are probably to be seen in the shallow cuttings in the rock just west of the Town Pier and immediately below high-water mark.

Evidence for actual piers, as distinct from landing-places, seems to begin with Adair's map (1703).<sup>6</sup> This shows a single pier, while Roy's map (1747-55) marks no pier, although naming the village 'North Ferry'. Before 1809 there was one pier only, but a few years later, no doubt as a result of the appointment of Ferry Trustees in 1810, the East and West Battery Piers were built and the main pier lengthened.<sup>7</sup> In view of this record it is puzzling to find the Trustees' regulations allowing boats to land at 'either of the piers',<sup>8</sup> as if there were only two, whereas, if both the Battery Piers were then standing, there should presumably have been three. In 1836 the piers were said to be 'unrivalled',<sup>9</sup> but no hint is given of their number.

*The Town Pier.* This work, which runs SSW. in continuation of the Main Street of the village, is substantially a jetty about 610 ft. long and from 45 ft. to 50 ft. wide over all. It is said to bear the date 1834,<sup>10</sup> but this was not found when the structure was examined in 1967. It is clearly not a structure of a single period, and is, in fact, known to have been lengthened soon after 1812.<sup>11</sup> The landward part consists of the jetty proper, 30 ft. wide, paved with setts and bordered on each side with large slabs, together with a pier-like structure about 10 ft. wide which flanks it on the W. and separates it from some adjoining raised ground. This pier, however, is itself a complex work, seeing that (i) the coursing of its E. face suggests that it originally formed a parapet for the jetty, before this latter was lengthened, having apparently



come down to the level of the jetty some 300 ft. out but having later been raised and extended; (ii) its surface, at a point about 170 ft. out, begins to show a longitudinal division, its E. part (5 ft. 6 in. wide) continuing at a slight downward slope while its W. part (4 ft. 6 in. wide) runs on at its previous level and ends, about 350 ft. out, in a pier-head from which steps descend shorewards to the water. This W. division of the work seems to be later than the rest, and its surface is distinctively keyed with small oblong blocks arranged in pairs. Beyond the pier-head, the E. division runs on in the form of a parapet-wall protecting the exposed side of the jetty, in fairly good preservation and showing the same arrangement of keys in pairs, as has just been noted. It is structurally later than the stretch of jetty along which it runs, as its E. face overrides the jetty's W. margin. The parapet-wall ends in a base for a beacon, now partly ruinous, and the jetty returns round this to run back landwards, W. of the wall, as a narrow, low-level quay. This ends at the pier-head and flight of steps described above. The Town Pier as a whole thus seems to exemplify four phases of construction: (i) a short jetty, with a wall on the W.; (ii) the addition of a pier on, and to the W. of, this wall; (iii) an extension of the jetty; (iv) the addition to the jetty, outwards from the former pier-head, of a parapet-wall, combined, probably, with the return of the jetty along the wall's W. side. No evidence exists that any of the work now visible is older than the nineteenth century, to the earlier years of which keyed slabs may be attributed with particular confidence. The five slender, tapering stone posts at the landward end of the pier are clearly not mooring-posts, as marked on the O.S. maps, but are intended for the control of passengers; their tops show traces of attachments for a chain which acted as a kind of handrail.

*West Battery Pier.* This is a jetty, 320 ft. long and varying in breadth from a minimum of 25 ft. It is flanked on the E. by the rising ground on which stands the N. cantilever of the Forth Bridge. The masonry is well coursed rubble, with setts on the top and large slabs along the W. margin. A distinctive feature is the droving of the marginal slabs, which show coarse grooves 6 in. apart.

*East Battery Pier.* This is another jetty, 230 ft. long by 30 ft. wide and partly flanked on the N. by dry land, which runs eastwards from a point just E. of the landward end of its neighbour. It resembles the latter in a general way but the setts on its surface are smaller, the rubble of its masonry is droved, and the marginal slabs are keyed with oblong blocks in pairs, as are those of the Town Pier (see above).

*Light-house* (Pl. 29c). The light-house was built by the Trustees soon after their appointment in 1810,<sup>12</sup> and stands just above the landward end of the Town Pier. It is a hexagonal tower of droved sandstone ashlar, set on a projecting circular base 1 ft. 2 in. high; it measures 14 ft. in height to the bottom of the cornice and 4 ft. a side. The lantern is octagonal, and has a copper dome from the top of which rises a cruciform metal flue; the glass panes have broken away. The door is 5 ft. high above the base by 2 ft. 4 in. wide, and has a semicircular pediment above it. There is a string-course at the top of the door and another higher up. Access to the light was obtained by a wheel-stair of stone.

*Signal House.* The Signal House, like the lighthouse, was built by the Trustees in or very soon after 1810.<sup>13</sup> It stands on rising ground just W. of the landward end of the Town Pier, in a position suitable for sending and receiving signals connected with the running of the ferry-boats. One of the Trustees' regulations required a watch to be kept day and night for signals and 'blazes'.<sup>14</sup> The house, which is of two storeys, comprises a rectangular N. portion, built of harled rubble with square-headed windows, a semi-octagonal S. projection of droved ashlar, facing over the Firth, and at the SW. corner a small tower, apparently containing a stair and no doubt used for signalling. Each face of the semi-octagon has a ground floor and a first-floor window with a pointed-arched head, the haunches of the arches, however, being only very slightly curved. A moulded string-course marks the division between the floors, and another the base of a parapet which carries weathered crenellation. The angles between the faces of the semi-octagon are reinforced with stepped, weathered buttresses, the tops of which rise higher than the merlons of the parapet. The tower is of three storeys, and has slit windows, string-courses, crenellation and a slated conical roof. Inside the crenellation there appears to be a narrow parapet-walk.

<sup>1</sup> The Railway Pier is not included in this account, as it is wholly modern, but the landing-place described as 'at Haugh-end, inside of Long Craig island' (Mercer, A., *History of Dunfermline*, 229) may have been in its vicinity. Mercer gives no date for the use of this landing.

<sup>2</sup> *Dunfermline*, No. 2.

<sup>3</sup> Stephen, W., *History of Inverkeithing and Rosyth*, 309, quoting *Dunfermline*, No. 250.

<sup>4</sup> *Dunfermline*. No. 345.

<sup>5</sup> *Stat. Acct.*, x, 505.

<sup>6</sup> *Description*, 'The Frith of Forth'.

<sup>7</sup> *NSA*, II (Linlithgowshire), 11.

<sup>8</sup> Mercer, A., *History of Dunfermline*, 241.

<sup>9</sup> *NSA*, IX, 237.

<sup>10</sup> Cunningham, A. S., *Inverkeithing, North Queensferry, etc.*, 108.

<sup>11</sup> *NSA*, II, loc. cit.

<sup>12</sup> Mercer, op. cit., 235.

<sup>13</sup> *ibid.*

<sup>14</sup> *ibid.*, 242.

*Old Haiks*

See Crail, Creeks

*Perth, Perthshire.* NO 1121, 1222

Whether or no the Romans created a beach-head on the site of Perth in support of Agricola's operations,<sup>1</sup> the burgh was certainly a seaport as early as 1147 as a grant of can from its shipping is recorded in the Holyrood charter.<sup>2</sup> The port is further mentioned from time to time in later medieval documents.<sup>3</sup> Nothing seems to be on record about early harbour-works, but it is safe to assume that quays existed on the burgh's river-frontage. A charter of 1600<sup>4</sup> shows that the harbour of that date was on the 'Old Shore', at the E. end of the High Street and just below the bridge that was destroyed in 1621, but as time went on it evidently moved downstream, either partly or wholly in consequence of progressive silting. Thus a Board of Ordnance plan of 1715-6<sup>5</sup> shows a small basin with a quay at the mouth of the canal that then occupied Canal Street, this position having perhaps been chosen for the quay, which seems to have had a frontage on the Tay about 100 ft. long, on account of the proximity of Cromwell's Citadel.<sup>6</sup> Again, Robert Reid's plan of 1809<sup>7</sup> marks 'Coal Shore' at this point, 'Merchant Quay' beside the South Inch, and 'Lime Shore' still further S. There was also a quay at Friarton, S. of the modern harbour, where an old gun, once used as a pawl, recently was dug out of the river-bank.<sup>8</sup> Access to the harbour was made difficult, as at Stirling, by shallows in the lower reaches of the river, and vessels of deeper draught had to tranship part or their cargoes into lighters at Lindores Pow (q.v.) or Newburgh.

The old harbour-sites are now obliterated by the Tay Street embankment and other modern developments, and the existing wharves and basins are of no archaeological interest except in so far as they illustrate the latest stage in a long process. Their rather complicated nineteenth-century history<sup>9</sup> is outside the scope of this study.

<sup>1</sup> For this suggestion I am indebted to Dr J. K. S. St Joseph.

<sup>2</sup> APS, I, 358 b (red pagination).

<sup>3</sup> e.g. RMS, 1306-24, App. 2, No. 556; NSA, x, 101.

<sup>4</sup> RMS, 1593-1608, No. 1098.

<sup>5</sup> National Library; Z 2/3.

<sup>6</sup> For this suggestion, as well as for other local information used in this article, I am indebted to Mrs K. S. Simpson.

<sup>7</sup> Burgh archives, Perth.

<sup>8</sup> *The Scotsman*, 23rd Sept. 1968.

<sup>9</sup> *Tidal Harbours*, 173 ff. and plan opp. p. 268; NSA, x, 102 f.

*Pettycur, Fife* (fig. 8a, Pl. 25b). NT 264861

The harbour of Pettycur appears to have gone through at least three phases, and it would be rash to suppose that the existing structure shows traces of anything older than the third of the series. This may be thought of as beginning in 1743, when a new plan for the harbour was submitted to the Convention of Royal Burghs,<sup>1</sup> and construction presumably was finished soon after 1759 when a general contribution to the project was made by the Burghs.<sup>2</sup> This conclusion is supported by records that the harbour was built about thirty years before 1794,<sup>3</sup> and that great improvements were made about 1760.<sup>4</sup> A pier is likewise shown on Ainslie's map of 1775. The previous phase, in which a stone pier was recorded in 1703,<sup>5</sup> may have begun in 1625, after a still older harbour had been destroyed by a storm.<sup>6</sup> The supposed second-phase harbour was noted as being in disrepair in 1615, 1617 and 1655,<sup>7</sup> but the new pier for which the Burghs gave a grant in 1698,<sup>8</sup> and which was still unfinished in 1707,<sup>9</sup> can probably be ignored as it was almost certainly at Kinghorn and not at Pettycur.<sup>10</sup> The first phase probably may go back to the middle of the sixteenth century, as Kinghorn is said to have acquired Pettycur in 1541.<sup>11</sup> Repairs and maintenance are mentioned fairly often in both the earlier phases,<sup>12</sup> the earliest evidence of actual harbour-works appearing to date from 1582.<sup>13</sup> Pettycur's main function at all periods was to serve as the N. terminal of a ferry plying from Leith or, later, from Newhaven.

The harbour is a sandy, tidal bay, enclosed on the N. and NE. by a steeply-rising shore and on the SE. by a combined breakwater and quay. This work is some 390 ft. long in all, being aligned south-westwards at its landward end (260 ft.), and then turning W. (130 ft.). Its outer side is formed by the breakwater, massive and heavily battered, which serves as a protective parapet to the quay within (Pl. 25b). The combined structure is about 65 ft. wide at the landward end, but where the westward turn is made it increases to a maximum of some 93 ft. The landward portion of the breakwater has been heavily breached, and the top is nowhere intact. It is built of igneous stone not amenable to regular dressing, and comprises two faces of large rough blocks, secured by pinnings, and a core of large rubble. Where best preserved, it stands about 16 ft. above the quay, in which height the batter reduces its thickness from about 20 ft.

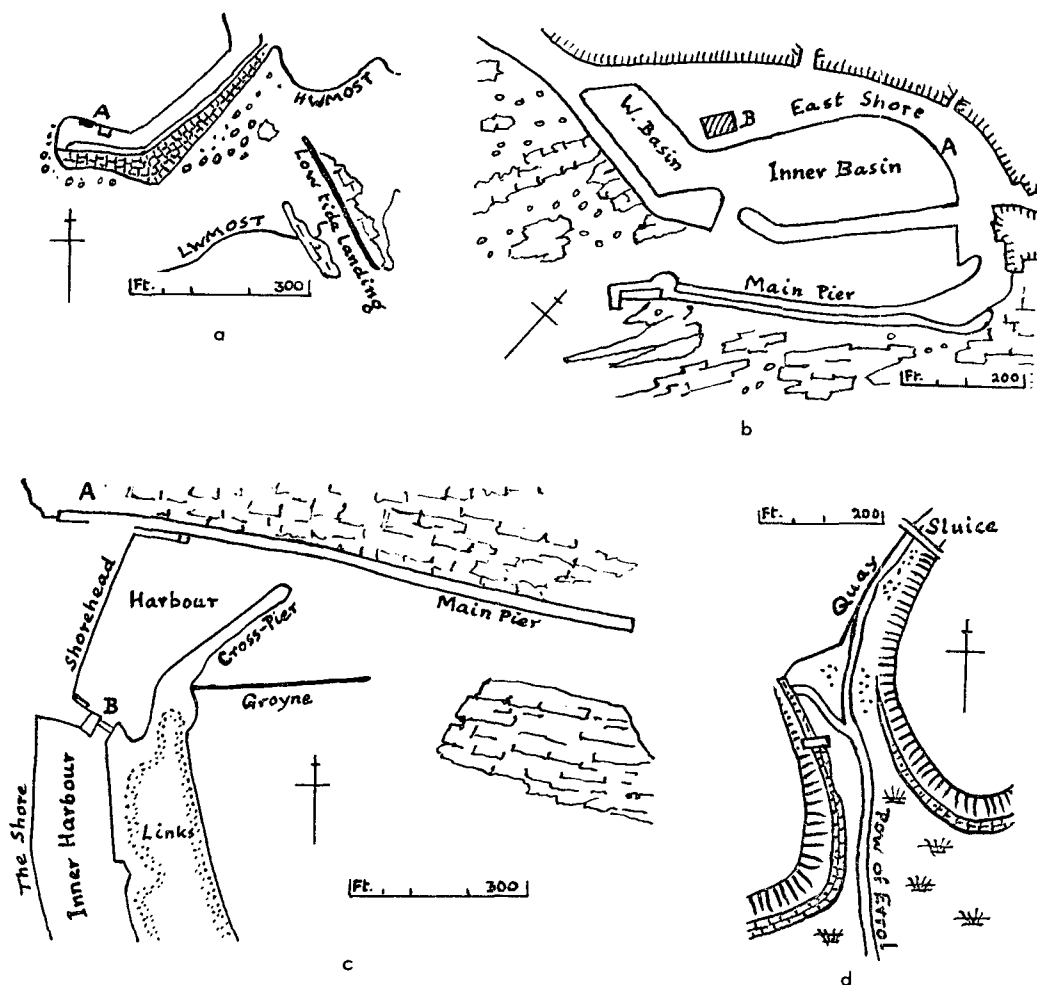


FIG. 8. *a* Pettycur (A, steps and embarkation ramp), *b* Pittenweem (A, disturbance marking position of former pier; B, granary), *c* St Andrews (A, rock-cut roadway; B, sluice-gate), *d* Port Allen.

to 10 ft. An opening broken through it, at the westward turn, and a look-out platform contrived outside the opening, are finished in brick, and are clearly not original. At the pier-head the parapet diminishes in height, and has been cut back to allow the quay to return into part of its thickness. The quay is about 30 ft. wide for most of its length, but along the returned piece at the pier-head it measures 65 ft. The masonry of its face is not homogeneous, but shows evidence of repairs and patching; it consists largely of dressed blocks which vary in their degree of weathering and may be partly older material re-used. Some of the blocks are set vertically, and in places bricks have been inserted. The part of the pier-head not formed by the end of the breakwater is rather neater than the internal face. A flight of steps descends the face just in from the pierhead, the height above the sand being here 15 ft. Nearer the angle, the face is broken by a steep ramp ending 5 ft. above the sand. Its paving looks newer than its sides, and the large slabs forming its lower sill show lozenge-shaped keys such as seem elsewhere to be dateable to the early nineteenth century. The surface of the quay beyond the angle is at two slightly different levels, and is paved with large, shapeless blocks. Inland from that point similar blocks seem to have been removed to make a track for the railway, now vanished, which is marked on the O.S. map surveyed in 1895. On the pier-head there stands an iron capstan round the top of which runs, in raised lettering, the inscription ANDERSON, LEITH, WALK, FOUNDRY, FECIT, with the date 1813 in the centre. Part of a wooden slat is still in

place on the barrel, and a wooden bar is broken off short in one of the sockets. Two basins for sluicing out sand were recorded in 1803<sup>14</sup> and one in 1846.<sup>15</sup> The O.S. map surveyed in 1854 marks one on the site of the existing car-park, but no traces survive.

*Low-water Loading Slip.* The same O.S. map marks a jetty, with this legend, immediately east of the breakwater, with its landward portion flanking the E. side of the basin mentioned above for about 170 ft. and the remainder, some 420 ft. long, running on south-eastwards to low-water mark. Part of this owermost portion still survives; it is 6 ft. wide, has no parapet, and is built of droved ashlar with sockets for lozenge-shaped keys between the blocks, although no actual keys were present. As keys of this sort can be dated to the earlier nineteenth century, it is interesting to find it stated that an attempt was made, in 1810, to run the ferry from Pettycur at all states of the tide,<sup>16</sup> for which a low-water landing-place clearly would have been required.

*CRB*, vi, 127.

<sup>2</sup> *ibid.*, vi, 567, 572; vii, 8.

<sup>3</sup> *Stat. Acct.*, xii, 237.

<sup>4</sup> *Fife*, 312 n.

<sup>5</sup> *Description*, 10.

<sup>6</sup> *RPC*, 2nd ser., i, 69; *CRB*, iii, 229.

<sup>7</sup> *CRB*, iii, 12, 43, 406.

<sup>8</sup> *ibid.*, iv, 265.

<sup>9</sup> *APS*, xi, 482 b.

<sup>10</sup> The records sometimes fail to make clear which of the two places is meant.

<sup>11</sup> *Tidal Harbours*, 155. No charter to this effect, however, is printed in either *RMS* or *RPC*.

<sup>12</sup> e.g. *CRB*, i, 138 (1582); i, 301 (1589); ii, 279 (1609); iii, 90 (1619); iii, 406 (1655).

<sup>13</sup> *ibid.*, i, 138.

<sup>14</sup> *Fife*, 312 n.

<sup>15</sup> *Tidal Harbours*, xxiv.

<sup>16</sup> Douglas, H., *Crossing the Forth*, 29.

#### *Pittenweem, Fife* (fig. 8b). NO 549024

A charter of 1228 mentions revenue arising 'de portu maris de Pettynwem',<sup>1</sup> but does not imply that any built harbour existed at the time. The earliest construction may only have followed the erection of the town as a Royal Burgh in 1541,<sup>2</sup> with power to build a harbour specifically provided, a confirmation charter of 1633 alluding to the 'reid, port, heavine and harberie'.<sup>3</sup> Nothing has come to light about the nature of the earliest works, but in 1703 Adair noted that the harbour below the town was 'covered from Sea Storm by a long and strong Peer',<sup>4</sup> and Roy's map (1747-55) marks this as curving towards the W. from the E. end of the bay. This pier still stands, as the main component of the harbour-works (see below), and formerly its head must have faced a quay, then based on the land to the W. but now incorporated in the head of the W. pier, the entrance between them being noted in 1846 as 75 ft. wide.<sup>5</sup> Early in the eighteenth century fresh construction began, with the help of a local tax on ale and beer obtained by the member of Parliament, Sir John Anstruther. In 1721 negotiations were recorded with William Adam, described as 'architect in Lynktoun of Abbotshall', for the building of a pier which may safely be identified with the pier that formerly ran south-westwards from the East Shore, through what is now the W. basin. Work was still in progress on this pier in 1724, and even in 1729 the pier-head was still unfinished,<sup>6</sup> while a heavy debt appears to have been incurred.<sup>7</sup> Damage, decay and the necessary repairs are mentioned frequently in the records,<sup>8</sup> but for the period later than 1724 it is difficult to be certain which pier is in question; in 1718 it must naturally have been the breakwater, and probably in 1747 likewise as the allusion then made was to 'the back of' the pier. It is worth noting that on both these occasions timber was required for the repairs, and timber is again implied by the 'ballerage'<sup>9</sup> used in 1726, probably on the breakwater, as funds were not available for more permanent construction. The pier of 1721 was repaired and rebuilt in 1822,<sup>10</sup> and is shown on the 6-in. O.S. map surveyed in 1854, but must have been removed after that date; its position is marked by a patch of cement on the facing-wall of the East Shore quay, and its head, together with part of the quay W. of the entrance, figures in an illustration of 1840.<sup>11</sup> The entrance to the inner basin opened between this quay and the pier-head, and was 26 ft. wide.<sup>12</sup> A local author alludes to repairs and improvements made in 1771,<sup>13</sup> although without indicating their nature, but under this date the Burgh minutes only record that 'a part of the Peer', which was in danger of collapse, was to be taken down and rebuilt. Probably the breakwater is meant.

The breakwater is also a quay, although not, apparently, now used as such. It measures about 720 ft. in length, including its expanded landward end and some 80 ft. of pier-head built since 1854. The quay, apart from the expanded portion, is from 10 ft. to 12 ft. wide, its level and the alignment of its lip are irregular, it is paved with blocks set edgewise, and it carries three large, roughly squared, stone pawls set back against the face of the parapet. The masonry of the inner face is partly of squarish or vertical

blocks and partly of random rubble. There has been a great deal of patching, as frequently mentioned in the Burgh Records, and one patch has called for the construction of a relieving-arch. The parapet and the outer side of the pier seem more irregularly aligned than the inner face, no doubt because of irregularities in the rock below, and the outer face is supported in places with concrete. The parapet is 6 ft. to 9 ft. thick and up to 7 ft. high; the masonry is mortared, consisting mainly of blocks with occasional boulders, and has a flight of steps about 300 ft. out. The landward end seems to have been rebuilt or extended recently, and there is a concrete ramp in the E. corner of the basin. A single unshaped stone pawl stands on the beach that has formed in this corner under the East Shore facing-wall.

Apart from the scar left by the removal of the old internal pier, and some vertical masonry beside it, the East Shore quays show facing of irregular, patched rubble generally similar to that in the main pier. This contrasts strongly with the large, neatly dressed stonework of the W. basin, which dates from after 1854. The SW. side of this basin is formed by a pier, the head of which occupies the position of the former land-based quay mentioned above, and this pier-head has been extended in concrete construction towards the head of the nineteenth-century central pier, the entrance to the inner basin, with chases for booms, passing between them. The pawls on the W. basin, apart from one well-shaped stone example, are either of cast-iron, with turned-over tops, or are iron pipes filled with cement, while the older ones, on the East Shore, are of stone. The cast-iron pawls, which also appear on the central pier, are inscribed ABBOTSHALL FOUNDRY KIRKCALDY in raised letters.

By the entrance to the W. basin there stands a fine granary of eighteenth or early nineteenth-century date.

<sup>1</sup> *Dryburgh*, No. 251.

<sup>2</sup> *RMS*, 1513-46, No. 2292.

<sup>3</sup> *APS*, vi, 94. This, the principal harbour of the place or 'East Haven', is not to be confused with the 'Boat Harbour', or 'West Haven' described below.

<sup>4</sup> *Description*, 11.

<sup>5</sup> *Tidal Harbours*, xxv.

<sup>6</sup> Pittenweem Burgh Records. I am indebted to Mr F. Patterson, Town Clerk, for permission to consult the Burgh's minute-books.

<sup>7</sup> *CRB*, vi, 271.

<sup>8</sup> e.g. *CRB*, i, 461; ii, 55, 159, 285, 303; iii, 146, 201; iv, 315; Burgh Records. See also Wood, W., *The East Neuk of Fife*, 315 f., 328.

<sup>9</sup> Presumably for 'batterage', buttressing.

<sup>10</sup> *Tidal Harbours*, xxv.

<sup>11</sup> Leighton, J., *History of the County of Fife*, opp. p. 106.

<sup>12</sup> *Tidal Harbours*, xxv.

<sup>13</sup> Wood, W., op. cit., 329.

#### *Pittenweem, Fife; Boat Harbour.* NO 546023

The creek marked 'Boat Harbour' on the 6-in. O.S. map surveyed in 1854 penetrates the tidal rock some 250 yds. W. of the entrance to the main harbour of Pittenweem. It was probably used by fishermen from early times, as a charter of 1541 states that the Priory of the Isle of May depended on the 'virtuous labours' of the poor fishermen of Pittenweem.<sup>1</sup> It is mentioned as the 'portus occidentalis' in 1592,<sup>2</sup> as 'lie West-hevin' in 1593,<sup>3</sup> and as 'occidentalem lie hevin' in 1598.<sup>4</sup> At the end of the seventeenth century the two harbours are distinguished, and the one 'where the Fish boats ly at the West end of the Town, is called the West Haven'.<sup>5</sup> The association of the creek with fishing-boats is also noted by Adair (1703),<sup>6</sup> Sibbald (1710),<sup>7</sup> and the Burgh minutes (1718), at which last date some work was needed to make the place 'secure'.

The ridge of rock that flanks the E. side of the creek has been made into a tidal jetty, by means of a roadway contrived along its spine and extending to low-water mark. This has been done by smoothing off irregularities, filling up hollows and gaps with slabs or large setts, and cutting back major obstructions, the last in one case to a depth of as much as 4 ft. 6 in. Where hollows have had to be filled, cavities have been cut to the shape of the inserted slabs and blocks. The roadway is irregularly aligned, and is nowhere less than about 12 ft. wide. In the landward part, pawls of both wood and iron have been set in holes cut in the rock. There is also what seems to be the socket for a wooden mast, perhaps to carry a lamp, in the form of a heavy cast-iron tube 3 ft. 10 in. high by 12 in. square externally, and with a round bore. The rock on both sides of the creek seems to have been given a smooth face, for convenience in berthing boats.

<sup>1</sup> *RMS*, 1513-46, No. 2292.

<sup>2</sup> *ibid.*, 1580-93, No. 2167. A slightly earlier allusion to 'portum australem' (*ibid.*, No. 1175) must be due to confusion of compass-points.

<sup>3</sup> *ibid.*, No. 2304.

<sup>4</sup> *ibid.*, 1593-1608, No. 748.

<sup>5</sup> *Geogr. Coll.*, iii, 221.

<sup>6</sup> *Description*, 11.

<sup>7</sup> *Fife*, 337.

#### *Polerth, Stirlingshire*

James IV's harbour at Polerth<sup>1</sup> has been confused with the harbour at Airth village (q.v.),<sup>2</sup> but it

seems to have been situated more than a mile to the SE., somewhere near Higginsneuk.<sup>3</sup> A natural site for it would have been at the mouth of the Pow Burn, wherever this actually debouched in the sixteenth century, and the harbour of Newmiln, mentioned in 1792,<sup>4</sup> may have been in much the same place. No trace of any harbour-works can be seen hereabouts today, but these littoral flats must have been greatly altered by the land-reclamation of the eighteenth and early nineteenth centuries.<sup>5</sup>

<sup>1</sup> *Accts. L.H.T.* (1507-13), 280 f.; *Exch. Rolls* (1508-13), 403, 565.

<sup>2</sup> *Accts. L.H.T.* (1507-13), xlviii.

<sup>3</sup> RCAM, *Stirlingshire*, 440 f.

<sup>4</sup> *Stat. Acct.*, III (1792), 489.

<sup>5</sup> RCAM, loc. cit.

*Port Allen, Perthshire* (fig. 8d). NO 251211

A ferry crossing the Firth from Lindores Pow (q.v.) is on record in 1600 and again in 1722, a harbour evidently existed before 1792,<sup>1</sup> and in 1837 Port Allen, like Powgavie (q.v.), was served by a branch road and was one of the principal local harbours.<sup>2</sup> At this last date it was somewhat dilapidated, but the embanking of the foreshore, which was then in progress, was expected to deepen it and improve the entrance.<sup>3</sup> It occupies the mouth of the Pow of Errol, and consists of an entrance channel about 400 ft. long, on a northerly alignment, and an inner stretch about 300 ft. long which decreases in breadth from about 80 ft. to 60 ft. including the tidal mud. This inner portion ends at a bridge which spans the Pow and carries a counter-weighted sluice-gate. This would no doubt have served to wash out mud from the harbour, the bottom of which is pitched with slabs below the arch of the bridge. For some 270 ft. downstream from the bridge the NW. side of the harbour has been faced with masonry, to form a quay. The facing-blocks are rather roughly dressed and coursed, but the inner part, amounting to about half the total length, shows much better work in its uppermost five to seven courses, and is slightly higher than the rest. The lip of this portion is likewise finished with well-squared slabs originally secured with a thin iron strap. The apex of the angle between the two parts of the harbour is shown on the O.S. map surveyed in 1860-2 as a kind of recess, measuring about 95 ft. by 40 ft., but this is now largely filled up. Below the angle, but still some 270 ft. within the foreshore line, a narrow masonry pier, 30 ft. long and with a flight of steps on its inner side, projects at right-angles into the entrance-channel; it is structurally later than the foreshore embankment, against which it is backed.

<sup>1</sup> *Stat. Acct.*, IV, 480.

<sup>3</sup> *ibid.*, 395.

<sup>2</sup> *NSA*, x, 382.

*Port Seton, East Lothian*. NT 405759

A harbour was built at Port Seton at some date after 1635, when the Earl of Winton's project at Cockenzie (q.v.) came to grief, and lasted until 1810. It is said to have been ruined in that year,<sup>1</sup> but a pier with its head turned westwards is marked on Knox's map of Midlothian (1812), and on Thomson's map of Haddington (1822). Nothing of the earlier work survives, although a dump of large stones, believed locally to have come from it, may be seen on the foreshore just E. of the landward end of the pier, and the footings of a jetty, of unknown age, are said to be buried under the SW. end of the beach in the landward sector of the basin.<sup>2</sup> Adair (1703) described the place as 'a good Tide Haven, being covered from the N. and N.E. winds by a hudge Peir of stone',<sup>3</sup> while his map of East Lothian suggests a curved breakwater on the E. and rocks on the W. The existing harbour, built in 1879-80, shows a rather similar plan. This is, in fact, more or less dictated by the site, which is a tidal pocket covered by protecting rocks.

<sup>1</sup> M'Neill, P., *Tranent and its Surroundings*, 195, 197.

<sup>3</sup> *Description*, 7. See also *Pilot*, 20.

<sup>2</sup> For these local details I am indebted to Mr George Allan.

*Portobello, Edinburgh*. NT 305744

This harbour has disappeared and its site has been largely built over, but it is fairly fully recorded.<sup>1</sup> It was situated just E. of the mouth of the Figgate Burn, and was built in 1787-8<sup>2</sup> at the instance of William Jameson, an Edinburgh architect and builder. The contractor was Alexander Robertson. Its original purpose was to serve the industries that were being started in Portobello, particularly a brick, tile and earthenware factory which made use of clay from the burn. It seems to have comprised a substantial stone pier 'with a rough kind of breakwater in front of it', a narrow channel about 170 ft. long, and at the end of this, evidently close to the works, a sub-oval basin measuring about 110 ft. by 65 ft. This is still commemorated by the name 'Harbour Street', at the end of Pipe Street. What was probably

the site of the pier-head, as figured by Baird, is marked today by a scatter of stones and boulders below the Promenade, which includes an interrupted line of dressed facing-blocks, while Baird's 'break-water' is probably represented by a rickle of large boulders, some 70 ft. long and with its E. end returned, which lies lower down the beach.

<sup>1</sup> Baird, W., *Annals of Duddingston and Portobello*, 304 ff., with sketch-plan and drawing; surveyed plans, 6-in. O.S. map of 1854 and Wood, J., 'Plan of Portobello' (1824).

<sup>2</sup> Plan in H.M. General Register House (R.H.P. 598/1), catalogued 'c. 1790', does not mark the harbour, but the inconsistency in the dates is probably not important.

*Powgavie, Perthshire.* NO 290252

This harbour occupied the mouth of the combined Powgavie Burn and Bogmill Pow, and in 1837 it ranked, along with Port Allen (q.v.), as one of the principal harbours of the district.<sup>1</sup> In 1792 and 1842 it was recorded as handling coal, lime, manure and farm produce.<sup>2</sup> Today the remains are overgrown, but the O.S. map surveyed in 1860-2 marks, on the right bank of the lowest meander of the stream, a quay about 135 ft. long, facing NW., with a returned portion, 40 ft. long, facing NNE. The former is in two straight sections, forming a blunt point on plan.

<sup>1</sup> *NSA*, x, 382.

<sup>2</sup> *Stat, Acct.*, iv, 194; *NSA*, x, 836.

*Putiken Water*

See Crail, Creeks.

*Queensferry*

See North Queensferry, South Queensferry.

*Randerston*

See Crail, Creeks.

*Redheugh, Berwickshire.* NT 825703

Redheugh Shore, sheltered as it is from the S. and W. by high cliffs, and providing a narrow tidal beach above the rocks, is likely to have served the local people as a landing-place at all periods. Lady Helen Hall of Dunglass wrote of it in 1830 'the trade of Redheugh has never been fishing, but smuggling, which has been put a stop to';<sup>1</sup> and with this passage may be compared her note of 1799 on a member of the neighbouring fishing-community of Highchester, who had been 'sent to the Navy for smuggling'.<sup>2</sup> Smuggling ceased with the erection of the coastguard station, now disused, on the hill above the Shore, apparently in the 1820s, the preventive force consisting of an officer and six boatmen.<sup>3</sup>

The Shore is awkward of access, as the track from the coastguard station turns the N. flank of Red Heugh then runs back south-westwards below high-water mark. A cutting 10 ft. wide has had to be made for it at the foot of the cliff. The landing<sup>4</sup> is provided with a small natural harbour, about 60 ft. long by 30 ft. wide at the mouth, formed by straightening the sides of the rock ridges that flank it and clearing the bottom of boulders. Iron eyes to hold boats' painters have been fixed in the rock on both sides. At the foot of the cliff above the harbour, and communicating with it by a slip-way some 40 ft. long and of modern appearance, there is a boat-house, partly rock-cut but otherwise built of red sandstone rubble and roofed with a segmental vault. Its style would accord well enough with a date in the early nineteenth century, and it may be safely associated with the coastguards. The two ruined buildings to the E. have been respectively a 'Herring House', in use in 1829, and a salmon-fishing bothy.<sup>5</sup>

<sup>1</sup> MS. 'Memorandum Book on Cottage Business: 1826', 62. In Dunglass Estate Office.

<sup>4</sup> For the description of these remains I am indebted to Mr J. G. Dunbar and Mr I. Fisher.

<sup>2</sup> MS. 'Memorandum Book of Lady Helen Hall', 30. Ditto.

<sup>5</sup> MS. 'Memorandum Book of Lady Helen Hall; 1826-32', 62; 25-in. O.S. maps of 1856 and 1906.

<sup>3</sup> *NSA*, II (Berwickshire), 306, 338.

*Roome Bay, Fife.* NO 618078

Roome Bay, a cliff-bound inlet about half a mile NE. of Crail harbour, contains a sandy beach and ridges of tidal rock but shows no traces of any artificial harbour-works. It is true that, near the NE. horn of the bay, a ridge has been cut through and a short length of roadway, paved with slabs on edge, has been made in front of the cut to give access to the lower foreshore, but this may well have been intended, as

elsewhere, for the carting of sea-weed for manure. The inlet, however, has come to be regarded as the 'old harbour' of Crail, and, as this tends to confuse the history of Crail harbour itself, it is worth while to look more closely at the relative facts.

Crail certainly possessed an 'old' harbour,<sup>1</sup> but the *New Statistical Account*, while alluding to 'Room or the old harbour', goes on to say that this 'might easily be converted into a haven',<sup>2</sup> and thereby implies that no harbour-works existed in the early nineteenth century. Adair, in 1703, was more explicit, as he noted that Roome Bay was a very good place for a harbour, although needing a pier,<sup>3</sup> and in 1772 the local fishermen attempted to build a pier and plant mooring-poles, but failed to obtain help from the Town Council.<sup>4</sup> An ambitious plan for development, entailing the construction of two piers, was prepared in 1845 by James Leslie, but was rejected on the score of cost.<sup>5</sup> There seems, in fact, to be no evidence for construction at Roome apart from the record of a decision by the Town Council to build a new harbour there in 1593,<sup>6</sup> but, as nothing appears to have been done, this should presumably be regarded as no more than a paper project, and it is safe to conclude that Roome Bay has never been more than a natural haven.

<sup>1</sup> See article on Crail Harbour above.

<sup>2</sup> Vol. ix, 962.

<sup>3</sup> *Description*, 13.

<sup>4</sup> Crail Council Minutes, H.M. General Register House (B/10/10/3).

<sup>5</sup> *Tidal Harbours*, xxvi, and plan opp. p. 164. Also large plan in Town Clerk's office, Crail.

<sup>6</sup> Memo by Col. J. K. Murray, quoting Town Council records, Crail Preservation Trust. For access to this memo I am indebted to the Rev. W. J. Macintyre.

#### *St Abbs, Berwickshire.* NT 920673

No harbour existed in Coldingham parish in 1794,<sup>1</sup> but work was put in hand in 1831<sup>2</sup> to provide a refuge for fishing-boats, and a developed version of this still stands inside the much larger later works. As now improved and expanded, this original harbour comprises a squarish box, extending only to about a quarter of an acre, inserted in a natural pocket among the littoral rocks, which have been quarried away as necessary or made to serve as foundations. The SW. side is formed of a shore-based wharf, partly built and partly rock-cut, the NW. side by a pier, originally a breakwater only, and the SE. and NE. sides by another, which returns at right angles at the E. corner. The entrance, 20 ft. wide, which has chases for booms and is partly rock-cut, is at the N. corner, and beyond this a narrow extension of the NE. pier runs on for a further 75 ft. This is an addition to the work of 1831. The face of the wharf on the SW. may be later than the rest as it is of a different build.

The main interest of the place lies in the date that it provides for the character of masonry employed. The piers are of large, well-dressed, scabbled blocks, set dry and accurately coursed. They vary somewhat in thickness from place to place, and on the seaward faces are in general deeply rusticated. These faces show considerable batter.

<sup>1</sup> *Stat. Act.*, xii, 45.

<sup>2</sup> *Fisheries*, 1831, p. 2, with plan and specifications, p. 23.

#### *St Andrews, Fife* (fig. 8c, Pl. 28c). NO 516165

St Andrews harbour is an estuary haven, formed in the tidal mouth of the Kinness Burn. This runs from S. to N. past the wall of the Priory precinct, which occupies the rising ground to the W., and is separated from the sea and tidal sands to the E. by a narrow strip of sand-dunes. In its natural state the estuary must have debouched on to a foreshore consisting of low rock-ridges, running from W. to E. with narrow channels between them, but the stream is now turned eastwards by the main pier, which has been set transversely to it, as a breakwater, on the southernmost of the ridges. A kind of basin has further been formed, in the angle between the main pier and the W. bank of the burn, by the construction of a second pier, known as the Cross-pier, which runs out obliquely north-eastwards from the N. end of the sand-dunes. In addition to the harbour, shipping formerly made use of the East and West Sands, where beached vessels could be served by carts at low tide.

A fishing harbour is mentioned as early as 1222,<sup>1</sup> and another medieval record dates from 1363;<sup>2</sup> no doubt the estuary has been used as a natural shelter since the earliest days of navigation. The names 'The Shorehead' and 'The Shore', applied respectively to the N. and S. parts of the quay on the left bank, presumably have come down from a time when vessels were grounded on a beach, but piers and quays were in existence by the later sixteenth century, if not earlier, as they are shown on a plan of that period preserved in the National Library of Scotland.<sup>3</sup> This plan shows two piers, flanking the sides of an E.-W. entrance-channel, which turns S. at right angles into the harbour proper as formed by the mouth of the



burn. The piers seem to be of timber with stone filling, although the timbers, which are plainly indicated, may in fact be simply brandering applied to a masonry face, but Douglass' record<sup>4</sup> of 1728, for what so late a statement is worth, would favour the former alternative. Above the right-angled turn, the timbering of the S. pier continues, as a revetment to the E. side of the harbour, about as far as revetment extends today; that of the N. pier gives way to coursed masonry immediately after turning the corner on to the line of the Shorehead, and this masonry face continues along the left bank to a point just short of the SE. corner of the Precinct. The short transverse pier that still projects from the N. end of the Shore is duly shown, and the quay-face is broken by a landing-ramp just opposite the Precinct gateway. The subsequent history of these early piers is uncertain. Douglass states<sup>5</sup> that 'the main Head or Pier of the Harbour was formerly built of Wood, which extended to the utmost Point of the Rocks, and in this fashion it stood a very long time; but in December 1655 [it was] totally beat down and demolished'. Stone seems, however, to have been substituted for wood in 1559,<sup>6</sup> and masonry is again mentioned in 1573, when a storm, floods and high tides combined to ruin the 'peir, schoir, port and heavin', and what remained of the 'aislar work' was shaken and loosened.<sup>7</sup> It may or may not have been in connection with this disaster that commissioners from the Convention of Royal Burghs were instructed in 1579, to 'vesy the schoir and hawin of Sanctandros' to discover how money 'appointit for the repairing thair of' had been spent.<sup>8</sup> From the later sixteenth century onwards several appeals for help in repairs are on record, as for example in 1613, when the 'peir, harborie and sey porte' had 'altogidder become ruynous and decayit, and at the verie point of utter overthrow'.<sup>9</sup> Stone was required for the repairs, as well as timber.

In view, however of the damage suffered in 1655, about which Lamont<sup>10</sup> fully agrees with Douglass, and of the amount of reconstruction that its repair must have entailed, there is no reason to expect that the records of earlier date can throw any light on the works as they exist today. Nor does this consideration apply with any less force to periods even later than 1655, as the pier, rebuilt in 1656 with stone largely taken from the Castle, was partly broken down in 1678 and underwent further repair in 1722<sup>11</sup> while of the numerous mishaps and repairs mentioned in the Burgh records of the eighteenth and nineteenth centuries but now impossible to locate,<sup>12</sup> some must have affected the pier to a greater or lesser extent. For example, in 1788 half of what was probably a newly-built extension of the pier fell down and had to be restored,<sup>13</sup> in 1816 the harbour as a whole was ruinous,<sup>14</sup> in 1823 the pier was breached by a storm,<sup>15</sup> and in 1846 the Town Council was applying for a grant of £2,000.<sup>16</sup> Even within living memory a serious breach has been made.

The length of the pier also seems to have varied from period to period. If the original wooden pier extended, as Douglass says, 'to the utmost Point of the Rocks' (see above), it must have been comparable in length with the existing work, but the pier of 1656 he describes as 'near half the length of the old one'.<sup>17</sup> Collins, who surveyed this part of the coast in 1685, records a 'small stone pier for small vessels',<sup>18</sup> but Adair, in 1703, speaks of 'a long stone pier'<sup>19</sup> while Defoe, whose visits to Scotland began in 1705, gives the pier the respectable length of 400 ft.<sup>20</sup> With this last figure Douglass, quoting 440 ft. for the pier as it stood in his day (1728),<sup>21</sup> is more or less in agreement. Possibly Collins' 'small' pier had not yet recovered from the damage of 1678. Slezser's illustration, of 1693,<sup>22</sup> tells nothing, and is shown to be inaccurate by the fact that it omits the small transverse quay (see above). Whatever the situation was at the beginning of the eighteenth century, the pier was certainly lengthened in 1783,<sup>23</sup> perhaps to the 660 ft. (inside measurement) shown in Wood's plan of 1820.<sup>24</sup> The concrete terminal was added in 1900,<sup>25</sup> and is about 240 ft. long.

As it stands today, the pier is some 880 ft. long, and is aligned from W. to E., although with a slight southward deflection at its seaward end (Pl. 28c). At the level of the walkway its overall breadth<sup>26</sup> is about 21 ft.; its faces are slightly sinuous in alignment, no doubt on account of irregularities in the underlying rock. The walkway varies in width from about 10 ft. 6 in. to 12 ft., and the parapet is up to 5 ft. high by 9 ft. thick. The masonry shows many variations. On the outer face, vertically-set blocks run out from the land for some 230 ft., the parapet in this stretch being of large random blocks irregularly laid. The vertical work is succeeded to seaward by large, neat, horizontal blocks, the parapet above being coursed and having the line of its base defined by an ovolo string-course; this section clearly represents a patch of late eighteenth or early nineteenth-century date. To seaward, again, and as far as the terminal addition of 1900, there follows an untidy mixture of vertical and horizontal work, heavily buttressed with concrete in quite recent years. The section of the parapet immediately adjoining the concrete terminal, 40 ft. in length, is higher than the rest, rises from the walkway in steps, and possibly may represent a former pier-head. The main features of the inner face, taken serially westwards from its junction with the terminal, are (a) a stretch of roughly-squared and coursed blocks; (b) a patch of vertical work; (c) poorly-

coursed rubble, with steps leading down to the water; (*d*) well-coursed longish blocks; (*e*) vertical work with a course of boulders at the bottom; (*f*) well dressed and neatly coursed slabs continuing to the corner of the harbour. The boulders perhaps may be a relic of early foundations, but if any sockets for the timbers of the wooden pier survive in the surface of the rock they must be hidden completely by the dense growth of seaweed. At the corner of the harbour there is a ramp of rusticated ashlar 10 ft. wide; the steps at the bottom have been built since 1895. West of the landward end of the pier proper, the ground has been made up to the level of the Shorehead, and the parapet continues along its N. edge nearly as far as the cliff. Short of the cliff, a ramp paved with large setts descends to the tidal rocks; its marginal slabs are hollowed to a shallow gutter.

The pier carries pawls of several types, as follows. (*a*) Of cast iron, with lugged tops inclined away from the water, and inscribed J. ABERNETHY & CO ABERDEEN; four, all on the extension. (*b*) Also of cast iron, but plainer and uninscribed, one on the extension and another on the middle section. (*c*) Of stone, rough and apparently unshaped slabs; four. (*d*) Of stone, rough but slightly shaped; two. (*e*) Of stone, cylindrical and with slightly flanged tops; two. (All the last three groups are on the middle section.) (*f*) Of stone, at the landward end of the walk-way, a rounded pillar 2 ft. 9 in. high with a square base and top (13 in.).

The Shorehead quay, on the W. side of the outer harbour, shows a face of rather roughly coursed rubble with some rock-cutting at its base. Some of the records of general repairs to the harbour<sup>27</sup> no doubt apply to this and the other quays, and the cement bags and patches of brick that occur from place to place prove that the face has been worked over at no very distant date. This quay is 290 ft. long, and carries some pawls contrived from iron piping; the stone blocks now set up in front of the new houses may or may not have been pawls, and have not, in any case, been in position for very long. The angle between the quay and the ramp at the base of the pier is rounded, and is neatly built of comparatively thin slabs.

The outer harbour ends at the short transverse quay, which is 60 ft. long on its outer by 100 ft. long on its inner side, and 35 ft. wide at the tip. Although this is one of the harbour's oldest features (see above), the existing masonry and two plain cast-iron pawls are probably of the nineteenth century, but a shaped stone pawl and a stone mooring-block with a ring fixed in its top may be relics of earlier times, as may also be another shaped stone pawl, with a ring, on the opposite bank. Attached to the end of the quay is a concrete extension which accommodates the sluice, the sluiceway being 35 ft. wide. The existing installation is modern, but 'flood-gates' were evidently in position in 1728.<sup>28</sup> What must have been a new set was finished in 1787, and gave trouble on several occasions in the following fifteen years,<sup>29</sup> and in 1902 the gates were washed away.<sup>30</sup> It is tempting to guess that the purpose of the transverse quay had been, from the outset, to narrow the harbour and provide a site for a sluice, as its construction should have been within the competence of any contemporary mill-wright. The frontage upstream from the sluice, along the Shore, may well be of the nineteenth century, as the masonry seems neater and better coursed than that of the Shorehead. Today the quay is 560 ft. long to the point where buildings begin, but formerly the harbour extended to the Shore Bridge, some 400 ft. further upstream. The E. side of the harbour is flanked by a built quay, similar to the one on the W., up to a point about 180 ft. above the sluice, where the construction ends in a slip facing upstream. This area must have suffered severe damage in 1727, when the sea 'broke through the Rampart (that defends the Bason) in several places, and threw up Sand-Banks even within the Bason'.<sup>31</sup> A similar accident happened in 1816.<sup>32</sup> Butt states<sup>33</sup> that the inner basin was completed in 1820.

The Cross-pier is about 230 ft. long by 23 ft. wide at the end (Pl. 28c). In contrast with the works described above, its masonry is largely homogeneous and is thoroughly distinctive in type. Apart from a stretch of about 90 ft. at the landward end, which has been rebuilt with a convex outer face, it gives the impression of a single build, with large rectangular blocks neatly coursed. The blocks are square or oblong, the latter tending to be set in a vertical position. This style of masonry would agree with a date at or about the beginning of the eighteenth century, as given by Sibbald for the pier's original construction<sup>34</sup> but in fact the work was damaged in 1712 and subsequently rebuilt,<sup>35</sup> was again damaged in 1727<sup>36</sup> by the same storm as affected the E. side of the harbour, this time so badly that a national collection was organised,<sup>37</sup> and the outer end was destroyed and rebuilt within living memory. The blocks, however, are no doubt original material, re-used in successive reconstructions. The upper surface is irregularly paved with large setts, and carries the stumps of three rough stone pawls.

The harbour is entered by a gap, about 50 ft. wide, between the end of the Cross-pier and a point on the main pier about 280 ft. out from the corner of the harbour. The enclosed space measures about

330 ft. from NE. to SW. by a maximum of 220 ft. transversely. The memorandum prepared by the Town in 1846<sup>38</sup> frequently alludes to attempts to deepen the harbour, to prevent the entry of sand, and to clear out boulders and projecting ridges of rock, but these records are largely unintelligible in the absence of plans, and no structural traces of the work done can be identified today. The groyne outside the Cross-pier dates only from 1900.<sup>39</sup>

*Rock-cut Roadway.* From the bottom of the ramp at the landward end of the pier (see above), a roadway 9 ft. wide has been cut through two of the transverse ridges of rock that run out from the base of the cliffs, one of the cuttings being paved. The roadway suggests comparison with one at West St Monance (q.v.), which is locally believed to have been used for the carting of seaweed. It seems to be leading towards a creek among the rocks, and not to be continuous with another rock-cut track which can be seen below a headland half-way to the Castle, and again nearer the Castle beach. The cutting by the headland is only 5 ft. wide, and may have served a quarry in the cliff; the one nearer the Castle is from 6 ft. to 7 ft. wide.

<sup>1</sup> *Liber Cartarum Sancti Andree in Scotia* (Bannatyne Club), 324.

<sup>2</sup> *RMS*, 1306-1424, No. 134.

<sup>3</sup> Accession No. 2887. It is reproduced rather crudely by Lyon, C. J. (*History of St Andrews*, i). I am indebted to Mr R. G. Cant for the identification of this plan as an eighteenth-century copy of an original probably drawn shortly before the Reformation; as well as for much local information and numerous references.

<sup>4</sup> Douglass, W., *Some Historical Remarks on the City of St Andrews*, 23.

<sup>5</sup> *ibid.* The Town Memo (*Tidal Harbours*, 167) gives this date wrongly as 1656.

<sup>6</sup> Town Memo in *Tidal Harbours*, 166.

<sup>7</sup> *RSS*, vi, 2325.

<sup>8</sup> *CRB*, i, 89.

<sup>9</sup> *RPC*, x, 85.

<sup>10</sup> *The Diary of Mr John Lamont* (Maitland Club), 95.

<sup>11</sup> Douglass, W., *op. cit.*, 24. McGibbon and Ross state (*Castellated and Domestic Architecture*, iii, 336), although without quoting their source, that the Town Council authorised the use of stone from the Castle in 1654.

<sup>12</sup> e.g., *Tidal Harbours*, 167 ff.

<sup>13</sup> Town Memo, *ibid.*, 167.

<sup>14</sup> *ibid.*, 166.

<sup>15</sup> Town Memo, *ibid.*, 169.

<sup>16</sup> *ibid.*, 165. Two of these episodes, 1785-9 and 1845-6, are noted by Dr Butt as 'important later

building periods' (*Industrial Archaeology of Scotland*, 259).

<sup>17</sup> Douglass, W., *op. cit.*, 24.

<sup>18</sup> *Coasting Pilot* (1756), 20, 24.

<sup>19</sup> *Description*, 14.

<sup>20</sup> *A Tour through the Whole Island of Great Britain* (1769), iv, 191.

<sup>21</sup> *op. cit.*, 24.

<sup>22</sup> *Theatrum Scotiae*, Pl. 13.

<sup>23</sup> Town Memo in *Tidal Harbours*, 167.

<sup>24</sup> *Town Atlas* (1825).

<sup>25</sup> Fleming, D. H., *Hand-book of St Andrews*, 106.

<sup>26</sup> The particulars that follow apply only to the parts of the pier older than the terminal extension.

<sup>27</sup> e.g., *CRB*, v, 404; Town Memo in *Tidal Harbours*, 167 ff.

<sup>28</sup> Douglass, W., *op. cit.*, 20.

<sup>29</sup> Town Memo in *Tidal Harbours*, 167 f.

<sup>30</sup> *ibid.*, 168.

<sup>31</sup> Douglass, W., *op. cit.*, 26 f.

<sup>32</sup> Town Memo in *Tidal Harbours*, 169.

<sup>33</sup> *loc. cit.*, but no source is quoted.

<sup>34</sup> *History of Fife*, 353.

<sup>35</sup> Town Memo in *Tidal Harbours*, 167.

<sup>36</sup> Douglass, W., *op. cit.*, 21, 26 f. *Tidal Harbours* gives the date as 1725.

<sup>37</sup> Town Memo in *Tidal Harbours*, 167. A sum of between £2,000 and £3,000 was raised (*ibid.*, 15).

<sup>38</sup> *ibid.*, 167 ff.

<sup>39</sup> Fleming, D. H., *loc. cit.*

### *St Andrews Castle, Fife.* NO 512169

The sandy cove just E. of St Andrews Castle is flanked on the S. by a ridge of tidal rocks. Certain cavities in the landward end of this, and some flattening of its top further out, might suggest that it once formed the foundation of a pier or jetty serving the Castle as a landing (cf. Dysart, Old Harbour; Pittenweem, Boat Harbour), but the rock is heavily eroded and no positive conclusion can be drawn.

### *St David's, Fife.* NT 147826

This harbour was designed as an outlet for the coal from Fordell Colliery, and was built, along with a wooden railway from the mines, in the years 1750-60.<sup>1</sup> In 1795 it was described as 'spacious', and as providing a safe loading-place for 'vessels of any burthen',<sup>2</sup> but in 1836, in which year Sir Philip Durham effected great improvements, it was noted that the remains of the old pier showed very poor construction.<sup>3</sup> An iron railway was being prepared at that time, to supersede the earlier wooden one;<sup>4</sup> this latter had consisted of an upper rail of beech resting on a lower one of 'fir', i.e. presumably pine, with sleepers at two-foot intervals, and had carried three-ton waggons. By 1838 the harbour evidently had acquired the form that it still retains,<sup>5</sup> and the improvements noted as having been made 'recently' in 1847,<sup>6</sup> unless they were simply those of eleven years before, can hardly have affected the main outlines of the works.

The harbour occupies what originally must have been a small bay, on the horns of which have been placed quays, ending in piers. The resulting basin is roughly triangular, with an entrance at the apex opening south-westwards; one combined quay and pier flanks it on the SE. and the other on the W., the NE. side consisting of the natural foreshore partially revetted with masonry. The SE. quay and pier are jointly some 500 ft. long, the pier being 35 ft. wide; the W. quay and pier similarly measure about 300 ft. along their inner side, and the pier is about 25 ft. wide. The entrance, between the pier-heads, is about 200 ft. wide, and the basin measures some 500 ft. by 450 ft.

The archaeological interest of the harbour-works is slight, and when visited their details were obscured a good deal by berthed craft and the stock-in-trade of a marine salvage-depot. Relics of the reconstruction of 1836, however, may probably be identified as follows. (i) Good squared rubble, with some rusticated ashlar, in the outer parts of both piers and in the seaward face of the SE. pier and quay. (ii) Remains of a sea-wall and parapet in this latter position, founded on marginal slabs socketed to take rectangular keys. (iii) A pillar of stugged rubble, 10 ft. high, 6 ft. 6 in. in diameter at the base, but tapering above, and ending in a shallow domed top. A pilaster of rectangular section projects from its N. side. This pillar stands at the landward end of the sea-wall, and may once have carried a light or beacon. In contrast, remains of the inferior earlier work, noted in 1836, may well be identifiable in the undressed, uncoursed rubble, with and without pinnings, that appears in the inner face of the W. quay, in the foreshore revetment, and at lower levels in part of the SE. quay.

<sup>1</sup> Dott, G., *Early Scottish Waggonways*, 5.

<sup>2</sup> *Stat. Acct.*, xv, 270.

<sup>3</sup> *NSA*, ix, 187.

<sup>4</sup> *ibid.*, 183. In view of this record, the statement that iron rails were only installed in 1850 or later

(Cunningham, A. S., *Inverkeithing, North Queensferry, etc.*, 95) seems open to suspicion.

<sup>5</sup> *Tidal Harbours*, plan at p. 153.

<sup>6</sup> *ibid.*, xxiii.

#### *St Monance, Fife* (fig. 9a). NO 525015

It appears from a charter of 1596<sup>1</sup> that the then laird of St Monance had been at great expense 'pro constructione portus juxta litus maris apud dictam villam', but it would be unsafe to treat the word 'constructione' as proof that this was new work rather than the repair of something which already existed. Two subsequent charters, of 1650 and 1661,<sup>2</sup> which grant powers 'portum et navium stationem edificandi', and a Privy Council order of 1671<sup>3</sup> which authorises the collection of money for the building of a 'harbour or bulwark', might seem to be at variance with the charter of 1596 as suggesting that the place still lacked harbour-works at the dates in question, but again too much should not be made of what may be no more than legal formulae. It may be concluded, therefore, that harbour-works of some kind had existed since at least the later sixteenth century, although whether they constituted the 'port' of 1565,<sup>4</sup> which may or may not have been improved, and whether they were sited, as at present, in front of the town or, as was the 'port' of 1649, at West St Monance,<sup>5</sup> i.e. in the mouth of the St Monance Burn, remains an open question.

Today the structures in the harbour all post-date the first Ordnance survey of 1854, apart from the pier that separates the E. and W. basins, and even this has been covered with cement which hides all structural evidence bearing on its origin. Only the general outline of the earlier haven survives, and this indicates a tidal basin enclosed on the E. and SE. by the pier, on the N. by the land, and on the W. by tidal rocks; the entrance is on the S., between the pier-head and a projecting rock-ridge which now carries a modern pier. The main part of the earlier pier is about 300 ft. long, and is aligned slightly W. of S., the pier-head, 63 ft. long, diverging westwards to form the E. side of the entrance. This arrangement appears to correspond with that shown on Roy's map of Scotland (1747-55), and also with Adair's 'Creek with a Key for small Vessels and Boats'.<sup>6</sup> The harbour was rebuilt in or about 1883, the rock being excavated and the entrance widened on account of the increasing size of the fishing-boats.<sup>7</sup> The cut-back rock may be seen under the facing-wall that supports the West Shore, and in the NW. corner of the basin. The facing-wall shows masonry of various types, which no doubt reflect repairs, rebuilding and the re-use of old material of deceptively weathered appearance.

There are no remains of any harbour-works at West Monance. The roadway cut through the rocks at the burn-mouth is said locally to have been made by farmers who carted sea-weed for use as manure.

<sup>1</sup> *RMS*, 1593-1608, No. 461.

<sup>2</sup> *ibid.*, 1634-51, No. 2158; 1660-8, No. 103.

<sup>3</sup> *RPC*, 3rd ser., iii, 295.

<sup>4</sup> *ibid.*, i, 381.

<sup>5</sup> *RMS*, 1634-51, No. 2060.

<sup>6</sup> Adair, J., *Description*, 11.

<sup>7</sup> *Annual Report of the Fishery Board for Scotland* (1883), as quoted by Fleming, D. H., *Guide to the East Neuk of Fife*, pt. II, 15.

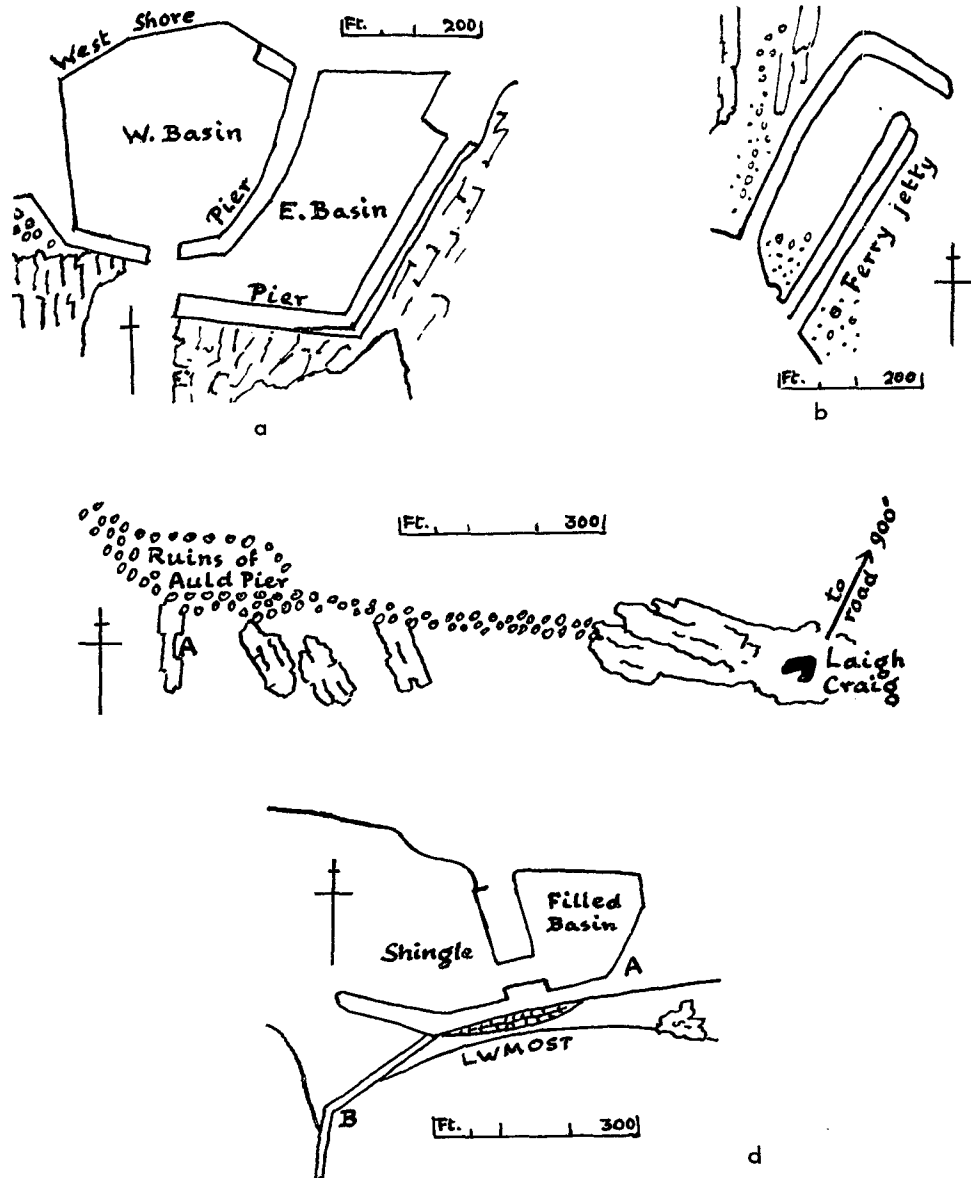


FIG. 9. *a* St Monance, *b* South Queensferry, harbour and ferry jetty, *c* Torryburn, Laigh Craig beacon and ruins of 'Auld Pier' as in 1895 (A, rock-cutting), *d* West Wemyss (A, fragment of parapet; B, low-tide loading-jetty of recent construction).

*Seacliff Harbour, East Lothian. NT 602847*

The 25-inch O.S. map surveyed in 1892-3 marks Seacliff Harbour as a long, narrow inlet in the littoral rocks, immediately N. of Old Auldhame, with a sub-rectangular basin measuring about 60 ft. by 50 ft. cut out of the rock on its E. side. The corresponding 6-inch map, however, surveyed thirty years earlier, shows nothing, and no harbour or local industry is mentioned in either of the earlier Statistical Accounts. The writer has been unable to visit the site, but Mrs R. B. K. Stevenson, to whom he is indebted for notice of it, informs him that the cutting of the basin looks fresh, in contrast to the markedly older-looking smoothing-off of the sides of the natural inlet, and in fact this contrast clearly is visible in a

photograph taken by Mrs Stevenson. It therefore seems possible that the inlet, perhaps somewhat improved, may have served Auldham in the fairly distant past, and that the basin is an industrial development of the later nineteenth century, possibly associated with quarrying in the littoral rocks near by.

*Skateraw, East Lothian.* NT 738754

The littoral rocks S. of Chapel Point are broken by an inlet with a sandy beach at its head. This was no doubt the landing-place that had to be watched in 1565,<sup>1</sup> and it corresponds with the indentation shown on Adair's map of 1682, outside which is marked an anchorage with a depth of three fathoms. About the turn of the seventeenth and eighteenth centuries, the place was listed among 'creeks . . . for barks in summer time'.<sup>2</sup> A plan prepared by W. Monson in 1771,<sup>3</sup> evidently for use in the exploitation of the local limestone, marks 'Skate Row Harbour' as a squarish pocket in the shore, but without any quays or breakwater. The construction of harbour-works had evidently been thought of by 1791,<sup>4</sup> and in fact Adair had himself noted that the site was suitable,<sup>5</sup> but no building seems to have been done until some date between 1799 and 1825, as a 'dock' is marked in the latter year by Sharp, Greenwood and Fowler but not in the former by Forrest.

The harbour was actually built, at whatever precise date, by two farmers, Brodie of Thorntonloch and Lee of Skateraw, who worked the local limestone quarries and kilns, shipping limestone to the Devon Iron Works and importing coal.<sup>6</sup> A kiln stands close beside it. Though now ruined and silted up, its plan can be recovered from the 6-in. O.S. map surveyed in 1853.<sup>7</sup> It lies on the rocks immediately SE. of the inlet, and so far up the foreshore that the depth of water inside it can never have been great; it was longish and rather narrow in shape, and was aligned from SE. to NW. with its entrance at the inlet's S. corner. Its seaward side was formed by a breakwater-pier, about 280 ft. long, which returned at its SE. end to reach the land, distant about 100 ft., at a point just E. of the kiln. The NW. end of the harbour was closed partially by a cross-pier about 100 ft. long. The landward (SW.) side must have been built as a quay, as it carried a crane immediately N. of the kiln. By the landward end of the cross-pier two ponds are marked, but the one that is still partially open is clearly an old quarry, and they were therefore probably not designed to flush away encroaching sand.

Of the foregoing structures little now survives, the harbour evidently having been overwhelmed by the sea at some time between the Ordnance surveys of 1853 and 1892. It is now completely filled up with sand and shingle, and a storm-beach has been piled up on its landward side destroying, or at any rate concealing, the quay in front of the kiln. The breakwater-pier is reduced, in its NW. portion, to a rickle of debris, in which, however, the lines of its faces may be traced; it was about 30 ft. wide, and had a rounded end which returned south-westwards for about 12 ft., with a rounded internal angle. The masonry is of long, thinnish and well dressed slabs, neatly shaped to curves, but not secured with cramps or keys. The SE. part, however, to a length of about 115 ft., consists of a tongue of natural rock, cut back on either side to a breadth of some 30 ft.; its faces are trimmed vertical, and its slightly dished upper surface is left unworked. The fact that a mooring-ring and a stout iron pin are set in its inner lip indicates that this tongue of rock itself served as the pier, and was not simply a foundation for a masonry superstructure now washed away.

The returned pier, shown on the O.S. map as closing the harbour's SE. end, has disappeared completely, although some of its landward portion may be hidden under the storm-beach, but the end of the breakwater into which it fitted, and an adjoining rock just beyond, have been cut out deeply to provide a firm joint. Of the cross-pier at the NW. end only the terminal few feet appear through the banked-up sand; this work was 6 ft. wide, and connected with a pear-shaped pier-head 19 ft. long by 16 ft. 6 in. wide, now standing to a height of two courses. The entrance between the pier-head and the end of the breakwater must have been some 25 ft. wide.

Two unexplained features were noted on the seaward side of the breakwater, and thus below high-water mark. (i) A jetty or groyne, about 7 ft. wide, consisting of a double row of large, roughly shaped blocks, which runs seawards for some 50 ft. from under the tumbled debris. The blocks are set on edge, and transversely to the axis of the work. Their point of contact with the breakwater footings is covered by fallen stones, and their relationship is consequently uncertain. (ii) A longer and bulkier work, with a greatest height of 6 ft., which runs out in much the same way but curves round north-westwards at its outer end; although the terminal hook is now ruined, it seems originally to have enclosed the seaward side of a rock-cut pocket measuring some 50 ft. by 30 ft. The very large blocks of which the straight part is built are set on edge, transversely to the axis of the work, but in one place have a few courses of normal masonry as a foundation. The appearance of the whole contrasts strongly with the neat coursing of the

breakwater, with the footings of which it does not seem to have been in contact. It is tempting to regard these two works as predecessors of the built harbour, and as associated with an earlier phase of the limestone industry; on this showing the pocket in the rocks could have provided a berth for a boat, and the jetty a low-tide landing-place.

<sup>1</sup> *RPC*, I, 382.

<sup>2</sup> *Geogr. Coll.*, III, 111.

<sup>3</sup> In H.M. General Register House (R.H.P. 627).

<sup>4</sup> *Stat. Acct.*, I, 124.

<sup>5</sup> *Description*, 5.

<sup>6</sup> Martine, Rev. J., *Reminiscences and Notices of Ten Parishes in Haddingtonshire*, 146.

<sup>7</sup> Neither the map nor the remains correspond with two documents of 1838 in H.M. General Register House (GD 6/1296). I am indebted for this reference to Dr J. Butt.

### *Skinfast Haven*

See Cellardyke.

### *Slamannan Railway Terminal Basin, Stirlingshire* (Pl. 31b). NS 961761

This basin, on the SW. bank of the Union Canal, was the original terminus of the Slamannan Railway, which was opened in 1840. The Royal Commission on Ancient Monuments states<sup>1</sup> that it 'consists of a basin 150 ft. square, which communicates with the Canal through an opening 15 ft. wide at its narrowest point. The SW. side of the basin is formed by a quay of massive stonework, the coping bearing some remains of loading machinery. The grooves in its edge are understood to have been made by pigs of iron being slid down into barges. The NE. side and the entrance are also faced with, if not wholly built of, masonry, part of the coping here being made of blocks to which railway-lines had once been bolted. As far as could be seen under a heavy covering of herbage, the NW. and SE. sides are of earth.' The foregoing description is based on an inspection made in 1954.

<sup>1</sup> *Inventary of Stirlingshire*, 439. For details of the associated railway-yard, see *ibid.*, 441.

### *Society, West Lothian*. NT 097791

Clark's engraving (1710) of Adair's map of West Lothian (1682) marks something in the nature of a quay at Society, although the scale is too small for clarity, and Sibbald (1710) mentions a 'small Port' belonging to Stonehill (Staneyhill) 'where boats take in lime exported by sea',<sup>1</sup> which is probably the same place. The harbour as it existed in 1821 is recorded on a plan of this part of the coast prepared by Robert Stevenson,<sup>2</sup> and this shows a pair of piers, entitled 'Harbour', projecting from the shore immediately in front of the houses at Society. The W. one is 200 ft. long, and overlaps the E. one considerably as the latter, although 70 ft. longer, originates at a point where the shore has curved back to the south. The piers are 65 ft. apart at the base of the W. one, but converge to only 43 ft. at the end of the E. one. By 1834 the work was evidently out of use, as there was then no harbour or quay in Abercorn parish although small craft unloaded coal on the beach at Society and sometimes took on lime for export.<sup>3</sup>

Some slight remains of the W. pier may still be seen, extending to a length of about 170 ft. and finishing just short of low-water mark. The pier is 15 ft. wide and is built of very large drystone blocks, an example measuring 3 ft. 6 in. by 1 ft. 10 in. by 1 ft. 8 in.; where more than one course remains, the lower one is seen to be laid horizontally and the upper one vertically. The greatest surviving height is about 3 ft. East of the surviving W. pier, a row of large stones is set upright in the foreshore, aligned obliquely towards the pier's seaward portion; these evidently mark part of the outer edge of the foundations of the E. pier, otherwise vanished.

About 100 yds. E. of the remains of the harbour, a causeway, 18 ft. wide, and constructed of large setts, with an edging of slabs, runs down the beach for a distance of some 65 ft. from an opening in the sea-wall. It suggests the working of cargo over the beach, as noted in 1834 (see above). A sketch dated 1877, at Society House,<sup>4</sup> shows a short timber pier with splayed upright members in a position slightly W. of the ruined structure.

<sup>1</sup> *Linlithgowshire*, 11.

<sup>2</sup> Preserved in H.M. General Register House (R.H.P. 6707).

<sup>3</sup> *NSA*, II (Linlithgowshire), 30, mispaged 31.

<sup>4</sup> For access to this sketch I am indebted to Mrs Graham Law.

### *South Alloa, Stirlingshire; Ferry Landing*. NS 898918

At Alloa the River Forth curves round a blunt point of land lying slightly higher than the mud-flats,

and the S. terminal of the ferry that formerly crossed from the town is situated just W. of its apex. The jetty consists of a sloping quay, shown on the 25-inch O.S. map surveyed in 1865 as about 240 ft. long by 30 ft. wide; on the west it presents a masonry face, of squared and coursed blocks, to the eroding sweep of the river, but the E. side is partly flanked by dry land and has been bordered with heavy wooden battens. The lower end of the jetty likewise has a timber stop. The line of the W. face is continued upstream from the masonry by a timber revetment, and this is interrupted by a timbered recess, presumably a dock for a ferry-boat, although less well constructed than the corresponding one at North Alloa (q.v.). At the landward end of the jetty there are some traces of an old roadway; this has been about 18 ft. wide and irregularly paved with slabs and large setts.

*South Queensferry, West Lothian (fig. 9b). NT 130784*

Queensferry has a long history as a port, as it served as the S. terminal of the *Passagium Reginae*, Queen Margaret's Ferry,<sup>1</sup> all through the Middle Ages. It was then, like its counterpart on the N., the property of Dunfermline Abbey, to which the Ferry had been given by David I about 1150.<sup>2</sup> Such extensive alterations, however, were made at the end of the eighteenth and the beginning of the nineteenth centuries that no structural features survive from early days in any identifiable form, and consequently the evolution of the harbour may be traced only from records, in so far as it is traceable at all.

The town became a Royal Burgh in 1641, and then was described as possessing a 'heavine and herberie'.<sup>3</sup> By about 1693 this seems to have taken the form of a pair of piers, as some work was done at that time on an eastern pier.<sup>4</sup> The 'harbours' (in the plural) were then said to be ruinous. In 1710 there was a 'Peer for Barks and Boats', and another, for boats of the Passage ferry, at Newhalls (the Hawes Inn).<sup>5</sup> Roy's map of Scotland (1747-55) marks a pair of piers almost comparable with those of today, but the E. one is shown as longer than the W. one, and there is no transverse work across the N. end of the harbour. Roy also places a small spot just N. of this open N. end, and this is shown, by an engraving of 1784,<sup>6</sup> to have been an isolated block of masonry construction. In 1763 the harbour was 'in great measure demolished' by a storm, just when the Burgh was 'employed . . . in carrying forward a second quay, which was judged to be absolutely necessary to make the harbour compleat',<sup>7</sup> the work in question probably having been an elongation of the W. pier. In the 1780s the E. pier was dangerous,<sup>8</sup> and was threatening the Passage jetty which ran along its E. side; work accordingly was begun with the object of extending the pier and turning its end westwards, as a protection against north-easterly seas, but in 1789 a storm wrecked the new construction and also breached the W. pier. This disaster seems to have necessitated a change of plan, as in 1791 the point of the E. pier was lengthened,<sup>9</sup> and in 1792 it was decided to take down and rebuild the 'West Head of the Harbour without any gap or opening'. This may or may not have been done, as in 1795 a further decision was recorded to rebuild the W. pier. For the next twenty years no major works are recorded, but by 1815 the harbour had become unsafe and an ambitious scheme was finding favour, namely to build a breakwater westwards from the Sealscraig rocks and enclose the whole of the bay. This, however, proved too costly, and in 1817 it was decided, on the advice of an engineer named Hugh Baird, to turn the W. pier at a right angle and run it eastwards, to make the entrance in the NE. corner, and to rebuild the head of the E. pier. Another entrance, presumably one at the NW. corner, was closed, and the harbour thus seems to have been brought more or less to its present form.

The structures resulting from these vicissitudes, and from later repairs, consist of an E. pier, 340 ft. long, with the disused Passage jetty (q.v.) on its E. side, and a W. pier, 350 ft. long, which returns eastwards for 135 ft. (internally) to close the N. end of the harbour, leaving an entrance 50 ft. wide at the NE. corner. At the S. end there is a narrow beach, behind which rises a masonry revetment topped by the parapet of an elevated open space known as the Fishermen's Walk. The harbour extends to about four-fifths of an acre, and dries out at low water.

The build of the piers varies from place to place, but these variations cannot be correlated positively with works mentioned above. The following points, however, are worth recording. The E. pier shows a face of rather large dry-stone blocks, squared but irregularly set, its end being rougher and mortared. The W. pier, on its outer side, shows at least three different builds, having large blocks in its landward portion, then shorter squarish ones, and outside these longer and thinner slabs. The cross-pier at the N. end is comparable with this last section, which would suggest that they both originated in the operations of 1817. Minor features are mooring-rings, a parapet-coping keyed with rectangular plugs, and pawls of whinstone and granite. On the cross-pier the O.S. map of 1856 marks a 'Boiler', which recalls the boiling-houses at Bo'ness used by the Greenland whalers,<sup>10</sup> and a similar installation at Dysart (q.v.). Associated with the harbour are a well-paved ramp, with traces of a marginal iron strap, leading down to the beach



on the E.; the revetment-wall of the ground behind, to E. and W., with its droved and channelled masonry and string-course above; and the corbelled look-out at the corner of the Fishermen's Walk.

<sup>1</sup> For the ferry landings, see separate article below.

<sup>2</sup> *Dunfermline*, No. 2 p. 7.

<sup>3</sup> *APS*, v, 571 a.

<sup>4</sup> *ibid.*, xi, App. 110 b.

<sup>5</sup> Sibbald, R., *Linlithgowshire*, 11.

<sup>6</sup> Preserved in the Queensferry Burgh Museum.

<sup>7</sup> *CRB*, vii, 143.

<sup>8</sup> The facts given in the rest of this paragraph have been taken from the ms. Minutes of Queensferry

Burgh Council, vol. 1764-98, pp. 272 f., 296, 324, 345, 364; vol. 1798-1817, pp. 453, 533. I am indebted to Provost J. A. Lawson, M.B.E., J.P., for permission to examine these minutes, and to Miss Finlay for assistance in so doing.

<sup>9</sup> This was probably the work alluded to in *Stat. Acct.*, xvii (1796), 492.

<sup>10</sup> Salmon, T. J., *Borrowstounness and District*, 404.

### *South Queensferry, West Lothian; Ferry Landings* (Pl. 29d). NT 1378, 1478

What is almost certainly a trace of an ancient landing may be seen on the W. side of the Binks Rock, some 80 yds. W. of the harbour, the proximity of the Carmelite church and convent helping to support this suggestion. At the point in question, a tidal rock-ridge, now made virtually inaccessible by a rubbish-dump on the foreshore, has been cut back to a straight line and vertical face; a length estimated at some 60 ft. protrudes from under the dump, and the face stands up to about 5 ft. above the sand. A ring-headed bolt, which must once have held a mooring-ring, is set in the top of the ridge, just above high-water mark. This cutting may be compared with those at Dysart (Old Harbour) and Earlsferry. The Binks Rock may or may not have been the subject of the dispute of 1342 between James de Dundas and the Abbot of Dunfermline, which was concerned with the ownership of certain rocks used for ferry landings on the S. shore.<sup>1</sup>

The exigencies of wind and tide made it necessary, before the days of steamers, for the Passage boats to have more than a single landing-place on either shore. In 1710, therefore, there was a pier at the Hawes Inn<sup>2</sup> in addition to South Queensferry harbour, and in 1794 there were several landings on both north and south.<sup>3</sup> After 1810, when the Ferry was put under Trustees, new jetties were built at Long Craig (1812), at the Hawes Inn, and at Port Edgar, as well as at North Queensferry (q.v.).<sup>4</sup> The following points have been noted regarding these works.

*South Queensferry Harbour.* The jetty that flanks the E. pier of the harbour is about 345 ft. long by 20 ft. wide. It is paved with setts, larger in the seaward than in the landward part; its outer edge is bordered with slabs keyed together with diamond-shaped insertions of cement, and the lip is cut out to receive a wooden runner. Mooring-rings are set in large slabs. The masonry of the outer face is of coursed rubble, but the blocks are rougher than those of the other Passage jetties and the work consequently may date, in part at any rate, from before the reorganisation effected about 1812.

*The Hawes Pier.* The jetty at the Hawes Inn, which was in use until the ferry closed in 1964, is about 935 ft. long by 85 ft. wide, and is divided in two longitudinally by a wall which begins 45 ft. out from the landward end and runs for 620 ft., being broken after 130 ft. by a gap 25 ft. wide. The masonry is large rubble, well squared and coursed and with droving; a ramp of the same build, grooved for a marginal iron strap, leads down to the beach on the E. at the landward end. Much of the top is cemented, but in places the original setts may be seen, and marginal slabs with some lozenge-shaped keys of cement. The central wall is of large, neatly droved and well coursed blocks, stands 7 ft. 8 in. high, and has a slightly rounded coping secured in part with oblong keys; it is heavily battered on both sides, decreasing in thickness from 8 ft. at the base to 5 ft. 2 in. at the top. At the S. end, however, the faces are made vertical for 10 ft. 9 in. to accommodate a small mural chamber, now an engine-house, with a door on the W. and a window on the E., neither perhaps original. Three feet N. of the N. end of this chamber, the W. face of the wall contains an open recess 10 ft. 3 in. long, 5 ft. deep and 5 ft. 4 in. high, with an arched roof; the lintel at the face is supported by a battered column 1 ft. 3 in. in diameter, the back of which extends into a kind of buttress, vertical at the back and 7 in. thick. On the N. wall of the recess is fixed a heavy iron ratchet-wheel with the end of its axle squared to take a crank-handle; the presence of a hole in the roof immediately above suggests that this was part of the mechanism of a semaphore. A similar recess appears in the E. face, 12 ft. further N.; this contains no machinery and the ceiling is lintelled.

*Lighthouse* (Pl. 29d). Immediately S. of the mural chamber just described stands a small lighthouse, the two buildings being separated by a double flight of six steps 2 ft. 8 in. wide which rise from E. and W. to give access, at a height of 3 ft. 8 in., to the lighthouse door. The lighthouse itself is a hexagonal tower, standing on a circular base which projects radially 1 ft. 3 in. Above the base, which consists of a single

course, there are three rusticated courses showing heavy pocked decoration; next, above a 4-in. intake, a blank arch on every face except the N., with further pocked decoration on the angles and cable-moulding at the springing-line, and at the top a moulded cornice supporting a hexagonal light-chamber with three glazed and three opaque sides. The door, 6 ft. high, occupies the arch on the N. face. The N. and S. arches have human masks for keystones. A model of a boat under sail, which formerly served as a wind-vane on top of the light-house, is now preserved in the offices of British Railways, Waterloo Place, Edinburgh.

*Long Craig Pier.* This work is a jetty 1,150 ft. long by 30 ft. wide, and is known to have been built in 1812.<sup>5</sup> It has the usual sett-pavement, slab borders, and remains of mooring-rings; a section of margin on the W. has been strapped with iron, and another, on the E., shows a row of empty holes for rectangular keys, such as are used on the Hawes Pier. In general, it resembles the Hawes Pier rather than the jetty at the harbour, differing from the latter particularly in its larger size and better workmanship, and in the droving of its masonry and the absence of lozenge-shaped keys.

Some remains of what was presumably an older jetty, only 10 ft. wide, may be seen some 50 yds. away to the E. They consist of little more than kerb-stones outlining the foundations, and tumbled boulders, although some coursed blocks remain in place towards the seaward end.

<sup>1</sup> *Dunfermline*, No. 381; Stephen, W., *History of Inverkeithing and Rosyth*, 307.

<sup>2</sup> Sibbald, R., *Linlithgowshire*, 11.

<sup>3</sup> *Stat. Acct.*, x, 505.

<sup>4</sup> *NSA*, II (Linlithgowshire), 10 f.

<sup>5</sup> *NSA*, II (Linlithgowshire), 11.

#### *Starley Burn, Fife.* NT 214859

This harbour formerly provided an outlet for the limestone of the Newbigging (Dalachy) quarries, which was shipped to Carron and elsewhere. It was also visited by vessels in need of fresh water.<sup>1</sup> It occupied a small sandy pocket among tidal rocks at the mouth of the Starley Burn, about a mile W. of Burntisland Docks. In 1854 it was still intact, and the 6-in. O.S. map surveyed in that year shows it as consisting of a pair of piers and having a bag-shaped inner end, into which the burn discharged, but today the landward portion, comprising perhaps about half the original area, has been obliterated by a railway embankment, while the burn has been diverted and given an outlet E. of the E. pier.

The E. pier projects from the original E. side of the pocket to a length of perhaps some 90 ft. or more, but the figure is difficult to estimate as the junction between pier and land is obscured by tumbled debris. The seaward (S.) side is straight, continuing the E-W. line of the adjoining shore-rocks to a bluntly rounded end, which stand up to 7 ft. above the tidal sand; the inner face is concave, forming the SE. sector of the basin, and disappears under the railway embankment about 100 ft. from the pier-head. The pier is about 23 ft. wide just short of the end, but widens considerably at the embankment. The outer face is made of very large, rough blocks, and the internal one of smaller, but still relatively large, blocks, poorly dressed and coursed; the igneous rock occurring on the shore hereabouts does not lend itself to neat dressing. The original top of the pier has been washed away, and the present upper surface is a layer of debris. Some of the not very numerous limestone blocks seen among the ruins show traces of scabbling, and no doubt have been re-used. The core is of broken rock.

The W. pier emerges from under the embankment about 167 ft. W. of its neighbour, and runs out south-south-eastwards for some 78 ft. It is about 25 ft. wide, and its end, which is rounded, stands 14 ft. above the sand, probably its original height. In materials and build it is similar to the E. pier, although in general better preserved. The surface is ruinous, but some of the blocks on the lip, at and near the end, may be part of the original margin. In the inner face, close to the embankment, there is a recess for a stair, with three steps in place at the bottom. At the pier-head, a stone pawl very roughly shaped to an irregular point may be seen among the debris; its length is 6 ft. 9 in., of which about 3 ft. 9 in. probably was sunk in the stonework. The entrance to the harbour is 54 ft. wide.

A document dated 1792<sup>2</sup> shows that the E. pier was then in existence and that the harbour was being deepened to 10 ft. A contract had also been given for the building of a pier 'across the head of the harbour'; this was to be 50 ft. long, 16 ft. high but only 8 ft. thick, this last dimension representing 3 ft. of facing and 5 ft. of 'packing', and it was therefore almost certainly a shore-based quay, now presumably under the railway embankment. The contractors were four masons in Aberdour (R. Melven, W. Macandrew, J. Miller, R. Dow) and two quarry labourers.

*Carron Harbour*, some 300 yds. distant on the E., seems to have been a later version of Starley

Burn. It was built before 1847,<sup>3</sup> and in 1854 was supplied from the Newbigging quarries by means of a tramway. It possesses no features of archaeological interest.

<sup>1</sup> *Stat. Acct.*, II (1792), 432; *NSA*, IX, 420.

<sup>2</sup> Preserved in H.M. General Register House (GD 150/115/3). I am indebted for this reference to Dr J. Bull.

<sup>3</sup> *Tidal Harbours*, xxiv, where the harbour is given the name Newbigging.

*Stirling, Stirlingshire*.<sup>1</sup> NS 800939

Stirling, standing as it does at the head of navigation on the Forth, must have been a port for small vessels at all periods. If the identification of Bede's *Giudi* with Stirling<sup>2</sup> is sound, the existence of a port even as early as the Dark Ages would seem likely enough, while that of an early medieval harbour is implied by documents of 1147<sup>3</sup> and 1150,<sup>4</sup> and the harbour and its business appears frequently in the Burgh records, particularly from the sixteenth century onwards.<sup>5</sup> Funds were required in 1604 'for reparatioun of their hewin and herberie, in biging of schoiris and bulwarkis, and redding the fuirdis of thair watter',<sup>6</sup> a record which suggests the building of riverside quays, and attempts to clear the bars of rock or hard clay, locally known as 'fords', which restrict the draught of vessels. Shallow draught is referred to again in 1692, with a note that goods consigned to Stirling were transhipped to lighters drawing not more than 5 ft.,<sup>7</sup> and it may have been the need for deeper water that caused James IV to put his naval station at Polerth (q.v.).<sup>8</sup>

The remains of the quay, and the area known as 'The Shore', lie E. of the medieval town, and this name, with that of 'Shore Road', suggests that the harbour was simply a riverside landing (cf. Perth). The existing quay, now derelict and inaccessible, is a narrow masonry terrace bordering the right bank of the river, here about 200 ft. wide and forming part of a loop. No structural features can be seen, apart from some steps which lead down to the water through the face of the quay, and a few of the masonry blocks, secured with cramps, that line its lip. In 1846 the 'shore or quay' was about 200 ft. long, and consisted of 'a breast-wall built in a rude manner with boulder stones', and without wooden 'defenders'.<sup>9</sup>

<sup>1</sup> cf. RCAM, *Stirlingshire*, 4, 15.

<sup>2</sup> *Antiquity*, xxxiii, 63 ff.; Bede, *Ecclesiastical History*, I, cap. xii.

<sup>3</sup> Lawrie, C., *Early Scottish Charters*, 142.

<sup>4</sup> *ibid.*, 170.

<sup>5</sup> RCAM, *op. cit.*, 4, quoting *Transactions of the*

*Stirling Natural History and Archaeological Society* 1919-20, 51 ff.

<sup>6</sup> *CRB*, II, 177.

<sup>7</sup> *Corporations*, Appendix (1835), 29.

<sup>8</sup> RCAM, *op. cit.*, 4.

<sup>9</sup> *Tidal Harbours*, 147.

*Stonehill*

See Society.

*Tayport and Tayside, Fife*. NO 4429, 4529

A law was passed in 1425, and was re-enacted in 1467, 1469 and 1474,<sup>1</sup> which enforced the use of wooden gangways ('briggis') for loading horses on to ferry-boats, and the wording used in 1467 shows that, in the area of what is now Tayport, there were two established ferry-terminals, 'portincrage and the est ferry'. Nothing to correspond with either of these can be identified today, as the old harbour-works of 'Ferry-Port-on-Craig' have been obliterated by those installed in the eighteenth century, but both were probably in the region of the existing harbour and fairly close together, and if so the 'Old Harbour' marked on the O.S. map of 1854 at Tayside, five furlongs away to the W. (448293), should not be regarded as the original Portincraig, but only as a subsidiary landing-place. It is true that a recent local author writes of it as a ferry-terminal, but he confuses the issue by making it an alternative to the Old Harbour, and not the Old Harbour itself.<sup>2</sup> In his day (1927) some stumps of an old jetty survived, but nothing is visible today. Other records make no suggestion of the kind.

Piers were built at some date before 1793 'for the convenience of passengers and the security of horses',<sup>3</sup> evidently a belated improvement on the fifteenth-century 'briggis', and in 1847, before the new works were undertaken, the harbour contained 'two piers, two ferry-piers and a loading-quay'.<sup>4</sup> Plans of the Scotsraig estate, of 1769 by John Hope and of 1839 by W. Baillie,<sup>5</sup> show the general arrangement of the harbour-works at those dates.

It is worth noting here that the 1474 version of the law cited above applied also to Leith, Kinghorn and Queensferry Passage, and primarily was intended for the convenience of the king and official travellers. This evidently implies that, in the fifteenth century, the favoured route to the north was by Tayport and

Broughty, and not, as later, by Woodhaven or Newport and Dundee. By 1776, however, Taylor and Skinner are ignoring Tayport as an approach to Arbroath and Aberdeen.<sup>6</sup>

The boulder-built 'breakwaters' E. of the modern harbour have nothing to do with the harbour in any of its phases, being connected with the salmon-fishery.<sup>7</sup>

<sup>1</sup> *APS*, II, 10, 89, 97, 107 f.

<sup>2</sup> Scott, Sir J., *History of Tayport*, 38.

<sup>3</sup> *Stat. Acct.*, VIII, 457.

<sup>4</sup> *Tidal Harbours*, xxvii.

<sup>5</sup> For access to these plans, and for valuable local

information, I am indebted to Mr A. Peter, the Burgh Surveyor.

<sup>6</sup> *Survey and Maps of the Roads of North Britain*, Pl. 33.

<sup>7</sup> *Third Statistical Account: Fife*, 790, and information from Mr Peter.

#### *Thorntonloch, East Lothian. NT 755744*

Thorntonloch was one of the places that had to be watched for disaffected persons in 1565,<sup>1</sup> and it appears, along with Skateraw and Tynninghame, in a list of 'creeks' . . . for barks in summer time' which dates from the later seventeenth or earlier eighteenth century.<sup>2</sup> The landing-place is only a sandy bay, partially protected from the N. by a tidal reef.

<sup>1</sup> *RPC*, I, 382.

<sup>2</sup> *Geogr. Coll.*, III, 111.

#### *Torry and Torryburn, Fife (fig. 9c). NT 0185, 0285*

Torry and Torryburn both stand on Torry Bay, and also seem to be connected closely in the records. It will be best therefore to discuss these harbours and some other associated remains together.

Ships were working out of Torryburn at least as early as 1531,<sup>1</sup> but the first mention of a harbour seems to be only in 1622.<sup>2</sup> In that year Patrick Wardlaw of Torry received 'portum et stationem lie heavin de Torrie cum ejus anchoragio, salinas' etc., a further passage in the charter mentioning the 'portum et stationes de Torrie, Newmilne et Torrieburn'. Similarly in 1637, Alexander Bruce of Alvech was given the foreshore of the same stretch of coast 'cum jure liberorum portuum, stationum et lituum unius vel plurium . . . cum jure reparandi lie port and harberie apud Torrie vel alios construendi',<sup>3</sup> and again in 1665 there is a record of the 'port and quay of Torrie, Newmilne and Torrieburne, lately built by the late Mr Patrick Wardlaw and his predecessors'.<sup>4</sup> It is true that a charter of 1654<sup>5</sup> alludes to the 'lands of Torrieburn, ports, harbours and havens to be biggit thereupon', as if nothing had yet been built, but the explanation probably is to be found in the use by lawyers of conventional phrases. It is thus fair to assume that some sort of harbour, known as 'the heavin', existed before the time of Patrick Wardlaw, that he enlarged or improved it, and that his successors wished to preserve their right to do further work in the future. Several other seventeenth-century records mention Torryburn as a seaport; in 1710 its harbour was suitable for small vessels,<sup>6</sup> and in 1728 was described as good,<sup>7</sup> and in 1843, like Crombie, it had a small pier which was in need of repair.<sup>8</sup> The importance of seamanship in the life of the local community is shown by the fact that navigation was being taught in the parish school in 1793.<sup>9</sup>

The following remains may be identified in the wide tidal area of Torry Bay.

(i) Torry Pier. The remains of this pier are shown on the 25-in. O.S. map surveyed in 1895 as a belt of scattered boulders, running out for about 450 yds. from the shore at the SW. corner of the playing-field in Torry village (014862), and ending at an islet (015858) which rises slightly above high-water mark, and is itself marked 'Torry Pier'. Actually, however, the belt of debris represents the ruin of a long, narrow pier, perhaps similar to the one at Crombie Point (q.v.), as the footings of the facing-walls readily may be followed seawards from a point about 160 yds. below high-water mark. There is no reason to suppose that the work did not originally start from dry land, as it is normal in such cases to find more serious dilapidation near high-water mark than further out. The footings of the E. face are preserved for longish stretches, some of the lowermost ones being of sandstone and noticeably dark in colour, while their setting is partly vertical and partly horizontal; those on the W. begin to appear only within some 80 yds. or less of the islet, and they establish the breadth of the work as some 12 ft. to 15 ft. The islet has been turned into a pier-head by facing its seaward sectors with masonry, and levelling up the top; the masonry face, of large, squared blocks rather roughly set in courses, is best preserved on the S. and SW., where it stands to a maximum of about 8 ft. On the W. the facing coalesces with the W. footings of the pier, but on the E. its topmost surviving course may be seen returning inwards, running in the form of a row of set blocks across the top of the islet and down its north-facing slope, and there joining up with the E. footings of the pier. For the most part, these blocks stand transversely to the axis of the row. The top of the islet is uniformly covered with debris; the material lying outside the blocks no doubt has been

washed off the top, and may mask some courses of the facing. The stumps of four heavy wooden posts that appear on the top are probably the remains of equipment for loading coal.

On the W. and SW. of the islet, at a distance of some 35 yds., there lies a slightly sickle-shaped feature which could not be approached on account of deep mud, but which seems to consist of boulders and large blocks. It is probably the ruin of some protective work.

What may be an older version of the pier, superseded by the work just described, perhaps is to be seen in the double row of footings, about 14 ft. apart and with a squared end, that runs for about 120 ft. along another strip of debris, W. of the pier and on a rather more westerly alignment. The two works probably diverged in the zone near high-water mark where all remains have been washed away (see above).

(ii) Boat harbour. Some 200 yds. SE. of the mouth of the Torry Burn, the sea-wall that supports the road from Torryburn to Crombie Point swings out to include a small projection by the roadside. On the foreshore immediately in front of this projection, there appear the remains of what seems to have been a tidal enclosure, perhaps intended to accommodate small boats. It measures about 200 ft. by 90 ft. and has an entrance at its W. corner. The footings of the SE. side are well preserved where they emerge from under the sea-wall, being here 8 ft. wide over all and showing well-dressed blocks on both faces. Further out, the core contains blocks set upright, and on the SW. side the blocks are set transversely to the axis of the work, as was noted at Torry pier. This is presumably the structure described by a local author as 'a pier' situated about 250 yds. from the mouth of the Torry Burn.<sup>10</sup>

(iii) The Auld Pier.<sup>11</sup> The remains of this structure are marked on the 25-in. O.S. map surveyed in 1895 as a lenticular patch of boulders, some 370 ft. long by 100 ft. wide, into which a stony rickle 400 ft. long runs from the east. It lies at 021854, about 300 yds. W. of the Laigh Craig (see below). Westwood states<sup>12</sup> that it was used until about 1750, when it was abandoned in favour of a new pier at Crombie Point (q.v.) as an outlet for the Torryburn coal. The patch of boulders still remains, covering a low mound which at a certain stage of the tide shows above the water as a low but characteristic whaleback, but the rickle is now represented by a double row of small boulders and quarried blocks set from 12 ft. to 15 ft. apart. These rows are readily traceable for 150 yds. from the direction of the Laigh Craig, fading out 30 yds. short of the boulder-strewn mound, but they reappear on the mound and there join up with the foundations of an undoubted pier-head, much of the basal course of which is still in place, and are therefore perhaps to be regarded as the footings of a pier, on the analogy of the remains at Torry, in spite of their rather slight proportions. The pier-head is shown by its foundations to have been a small squarish structure with rounded corners, its SW. (seaward) frontage being 30 ft. long; the SE. side returns 9 ft. to the supposed pier-footings and continues for at least the same distance beyond them, thus totalling a length of at least 32 ft. The NW. and NE. sides are lost in stones and shingle. The stone-work consists of well-dressed blocks, fitted neatly together and showing radial joints at the rounded corners; a specimen measured 1 ft. 6 in. by 8 in. on its face, and was tailed 2 ft. 3 in. into the work. A low ridge of rock runs seawards from immediately in front of the pier-head, and has been cut into quite heavily in places; for example, a recess measuring at least 10 ft. by 6 ft. has been formed in its SE. side, but details are obscured by seaweed.

There is nothing to show where the double row of stones originated. Followed back through square 022854, it swings slightly shorewards as it approaches the Laigh Craig, but then fades out in the sand and no further trace of it appears in the tidal area. It may or may not have been connected, in some unexplained manner, with a channel which has been cut through a belt of flattish tidal rock between the Laigh Craig and the shore. This channel is visible for some 36 yds., is up to 1 ft. 2 in. wide at the top by 10 in. deep; it is quite straight, is aligned directly on the Craig, and fades out about 30 yds. NE. of it after throwing off a short branch.

(iv) The Laigh Craig beacon. Mention has been made above of a projection in the sea-wall east of the mouth of the Torry Burn. At a point about 320 yds. south-west of this projection (024854), a rounded lump of rock rises slightly above high-water mark. Its name, the Laigh Craig, though not given on the O.S. maps is recorded by Westwood,<sup>13</sup> who also draws attention to the traces that it bears of a beacon, and his observation is fully justified by the presence on its summit of a group of cut socket-holes. Eight of these sockets, the largest of which measures 9 in. by 7 in. and is 9 in. deep, are disposed in a broad ellipse, four on each side of a cut channel at least 9 ft. long by up to 2 ft. wide and deep, which crosses the summit from NW. to SE., and debouches into a natural fissure. The sockets have evidently supported some wooden structure, and the inference that this was a beacon is natural enough in view of the proximity of the Auld Pier (see above). The purpose of the deep channel, however, is obscure. Other sockets appear close by, but these are less regularly arranged, more heavily weathered, and smaller, down to about

2½ in. square; they may perhaps indicate that, at some stage in its history, the Craig was capped by a platform (cf. Castleton), and if so this may well have extended over the top of a recess which cuts into its W. part. This recess, which is well below high-water mark, has evidently been formed from a natural fissure enlarged to 4 ft. in greatest width, 2 ft. 6 in. in length and 3 ft. 6 in. in depth. It shows traces of sockets and pick-work on its upper edges.

<sup>1</sup> *Acts of the Lords of Council in Public Affairs, 1501-54*, 359.

<sup>2</sup> *RMS*, 1620-33, No. 256.

<sup>3</sup> *ibid.*, 1634-51, No. 786.

<sup>4</sup> *ibid.*, 1660-8, No. 747. 'Lately' must cover a period of at least thirty-seven years, as Patrick Wardlaw was dead by 1628 (*ibid.*, 1620-33, No. 1281).

<sup>5</sup> *ibid.*, 1652-9, No. 328.

<sup>6</sup> *Fife*, 290.

<sup>7</sup> Loch, D., *A Tour, etc.*, 18.

<sup>8</sup> *NSA*, IX, 736.

<sup>9</sup> *Stat. Acct.*, VIII, 452.

<sup>10</sup> Westwood, *That Portion of Scotland, etc.*, 196.

<sup>11</sup> This name is recorded by Westwood, *loc. cit.*

<sup>12</sup> *ibid.*

<sup>13</sup> *loc. cit.* In 1623 it was probably called 'Craiginour' (*RPC*, XIII, 263).

#### *Tynninghame, East Lothian.*

In 1593, Lauder of the Bass received the right to build a harbour on Tynninghame estate,<sup>1</sup> but no evidence exists that he did so. Tynninghame is listed, rather later, simply among 'creeks . . . for barks in summer time'.<sup>2</sup>

<sup>1</sup> *APS*, IV, 37 a.

<sup>2</sup> *Geogr. Coll.*, III, 111.

#### *Valleyfield, Fife. NT 0086*

The record of harbour-construction in Valleyfield Bay is far from clear. In 1612, Sir John Preston of Valleyfield was given the right to build 'propugnacula, portus ac navium stationes lie portis et heavenis', and to levy haven-silver,<sup>1</sup> but the fact that a fresh charter in much the same terms, granted thirty years later,<sup>2</sup> included no 'port' in the list of the new laird's properties suggests that Sir John had not made use of his powers, and that no 'breakwaters, ports or berths for ships' had in fact been built in the meanwhile. Again, although the 'port of Valleyfield' was described in 1663 as 'convenient for ships' trading in commodities required by the local collieries and salt-pans,<sup>3</sup> the place was still an open roadstead in 1689.<sup>4</sup> Today the old shoreline has been obliterated by a railway and a road, and at the E. end by mining and the dumping of spoil, with the result that all traces of early work have disappeared. It is possible only to point to one or two rickles of boulders running out into the tidal mud, which, although perhaps themselves of no great age, may represent berths cleared for the beaching of craft, and as such may correspond in function with Preston's 'navium stationes'.

<sup>1</sup> *RMS*, 1609-20, No. 606.

<sup>2</sup> *ibid.*, 1634-51, No. 1107.

<sup>3</sup> *ibid.*, 1660-8, No. 404.

<sup>4</sup> *RPC*, 3rd ser., xiv, 392.

#### *Wardie, Edinburgh. NT 242772*

In 1832, Captain Boswell recorded<sup>1</sup> what he believed to be the remains of a Roman breakwater at Wardie. His landmarks have now disappeared as a result of the formation of Lower Granton Road and of the railway embankment, but the site was evidently just E. of the E. breakwater of Granton Harbour, also of later construction than his discovery. The remains consisted of a 'bulwark' foundation 500 ft. long, of boulders with mortar containing 'burned clay'; their position was at the lowermost edge of the foreshore, and they were only accessible at exceptionally low tides, for the occurrence of which Boswell gave dates and times. In view of this record, considerable interest attaches to the recent discovery, by Mr G. S. Maxwell, of a deposit of boulders, some of which have mortar adhering, at or about low-tide mark about 140 yds. east of the Granton breakwater. The mortar shows no evidence of antiquity, but Mr Maxwell points to a possible parallel between Boswell's 'burned clay' and the broken tile mixed into the concrete in the hypocaust at Inveresk.<sup>2</sup>

<sup>1</sup> *Arch. Scot.*, IV, 302 ff.

<sup>2</sup> *RCAM, Inventory of Midlothian*, 92. I am indebted to Mr Maxwell for information about his find.

#### *West Wemyss, Fife (fig. 9d). NT 323946*

West Wemyss is mentioned as a seaport in 1565<sup>1</sup> and again in 1602,<sup>2</sup> but neither notice alludes to any harbour-works. The date of the earliest construction was unknown to the writer in the *Statistical Account*,<sup>3</sup> although he may have equated it more or less with Methil (q.v.), which he mentions in the same

passage and dates from about 1650. The pier is said to have been one of those 'doug downe' by the great storm of 1655.<sup>4</sup> Collins, however, in his survey made between 1682 and 1689, marks a pier;<sup>5</sup> Adair, in 1703, recorded a 'convenient Harbour, within a strong Bulwark of Stone';<sup>6</sup> and Sibbald noted a harbour in 1710.<sup>7</sup> Roy's evidence is fuller, as his map of Scotland (1747-55) shows a pair of piers enclosing a harbour of segmental shape, similar to the one that he marks at Methil and having an entrance on the SW.; and with this Ainslie's map (1775) is in general agreement. This arrangement probably lasted until after 1806, as a plan of that year by J. Knox<sup>8</sup> corresponds reasonably well with Ainslie's map when allowance is made for the small scale of the latter.

It is difficult to correlate these plans with the surviving structures. These latter comprise an outer harbour, now choked with shingle, and to the E. of it an inner basin filled up deliberately while the present survey was in progress. Both are bounded to seaward (S.) by a long breakwater-pier, the outer face of which coalesces, towards the E., with a sea-wall enclosing some recently made ground, formerly a dock. This pier evidently incorporates the seaward part of the curving work shown by Roy and Ainslie, as its outer face, between its junction with the sea-wall and a slight angle about 155 ft. back from the pier-head, shows the very large, irregular blocks that are seen in early breakwaters elsewhere, although accompanied here by patches of later work, much mortar, and reinforcement along the base. In addition, a fragment of the parapet and some traces of an accompanying walk-way survive just E. of the filled-up basin, running for about 165 ft. from the SE. corner of the latter towards the village street. The parapet is built of very massive blocks, so large as to leave little space for a rubble core, a specimen measuring 4 ft. 6 in. by 2 ft. 2 in. by 1 ft. 9 in. The precise former position of the landward end of the breakwater cannot now be determined, but on the assumption that its seaward end was at the angle mentioned above its total length may have been about 430 ft. The original W. pier seems to have vanished completely; it cannot be represented by the existing quay on the W. side of the basin, as the O.S. maps show that this has been built since 1854. Nor does any trace remain of the sluicing-pond provided 'some years' before 1795<sup>9</sup> and still existing in 1847.<sup>10</sup>

Two minor points of nineteenth-century construction deserve passing mention. (i) Three shallow niches in the inner face of the parapet near the pier-head, from in front of which iron pawls have been removed. This arrangement, which allows a rope to be passed behind the pawl while keeping the pawl well back from the lip of the quay, and thus ensuring its stability, was noted in a much older context at Dunbar (q.v.). (ii) Large warping-rings, 1 ft. 10 in. in diameter, anchored in the outer face of the quay west of the basin. The ring is held by a shackle 10 in. long, itself fastened to another, smaller, ring, this second ring and the shackle being housed in an iron pipe and let into the face of the quay; the strain is thus taken well inside the structure instead of by the surface masonry, which might have been pulled apart.

Another nineteenth-century feature is a ruined concrete pier which formerly abutted the outer face of the breakwater at the angle mentioned above. It possesses some interest as being a modern counterpart of the much smaller low-tide landings at Dysart and Pettycur (q.v.).

<sup>1</sup> *RPC*, I, 381.

<sup>2</sup> *ibid.*, VI, 373.

<sup>6</sup> *Description*, 11.

<sup>7</sup> *Fife*, 323.

<sup>3</sup> Vol. XVI (1795), 522.

<sup>8</sup> H.M. General Register House (R.H.P./39).

<sup>4</sup> *The Diary of Mr John Lamont* (Maitland Club), 95.

<sup>9</sup> *Stat. Acct.*, XVI, 522.

<sup>5</sup> *Coasting Pilot*, 'Edinburgh Firth'.

<sup>10</sup> *Tidal Harbours*, xxiv.

#### *Westhaven*,<sup>1</sup> *Anstruther Wester, Fife*. NO 563030

In 1620, the bailies of Anstruther Wester informed the Privy Council that there was 'ane commodious hevin', a short distance W. of their burgh, with a 'guid and spacious grein' close by on which a shipload of goods from Königsberg, suspected of carrying the plague, could be laid out for disinfection.<sup>2</sup> They added that this 'herberie' was 'not as yet altogidder saiff', which may imply that it possessed no quay or breakwater. At some unstated later date, however, a quay is said to have been built, by a company, for the export of coal,<sup>3</sup> part of which seems to have survived at least until 1803.<sup>4</sup> Today the structure is reduced to a heavy rickle of massive boulders and blocks, running out seawards at the NE. end of a crescentic sandy beach above which a golf-course preserves the illusion of the 'grein' of 1620. The rickle itself is clear evidence of a ruined pier, and the local coastguard states that, at the lowest tides, set footings may be seen among the tumbled material. A ramp of recent construction, with a stone pawl at the top, leads down into the bay by the landward end of the rickle.

<sup>1</sup> For another site of this name, see Pittenweem, Boat Harbour.

<sup>2</sup> *RPC*, XII, 766 f.

<sup>3</sup> Wood, W., *The East Neuk of Fife*, 344.

<sup>4</sup> *Fife*, 338 n.

*Whalehaven* (Quhailhaven)

See Crombie Point.

*Woodhaven, Fife.* NO 407270

The *New Statistical Account* stated, in 1838, that ferries had run from both Woodhaven and Newport from time immemorial,<sup>1</sup> and evidence for them at the turn of the seventeenth and eighteenth centuries is given by Collins and Adair. The latter describes Woodhaven as a 'little creek for ferry boats',<sup>2</sup> and the name appears on Roy's map of Scotland (1747-55), although without any pier being marked. In the fifteenth century the route to the N. favoured by official travellers was by Tayport (q.v.), but by the later eighteenth, at any rate, Woodhaven seems to have become the terminal of the usual through route from Edinburgh by Pettycur (q.v.), Taylor and Skinner (1776) marking it as such though showing, on another plate, a branch road to Newport diverging from it a few miles to the S.<sup>3</sup> In 1803 Woodhaven was regarded as the principal ferry to Dundee,<sup>4</sup> a new turnpike having been built to it in 1790, but Newport obtained priority in 1806 with the creation of another turnpike, presumably on the line of Taylor and Skinner's branch. In 1819 an Act was passed to authorise the building of piers and regulate the working of the ferries, and in 1822 there were 'very complete harbours' at both places.<sup>5</sup>

Today the harbour consists of a small bay, protected on the W. by a pier from the outer end of which a jetty slopes down to low-water mark. The pier, which has a concave E. face, is aligned towards the NNE., and is about 140 ft. long; it varies considerably in breadth, splaying out where it meets the made-up ground on the shore and expanding by some 10 ft., to 40 ft., where its junction with the jetty forms a kind of knuckle. On the W. it stands to a maximum of 70 ft. above the beach. The masonry is of large blocks, neatly dressed and coursed, and the top seems also to be paved with blocks, although most of it is hidden by cement. The concave E. face curves round to coalesce with revetment supporting the ground behind the bay. The jetty, 28 ft. wide, is aligned due N.; its W. side is about 140 ft. long, but its E. side is extended to 175 ft. by the 'knuckle' junction with the pier. Its terminal section, about 25 ft. long, is stepped down to a lower level, and seems to have been reached by a wooden ramp, now vanished. Its masonry is largely concealed by cement and seaweed, but the junction with the pier shows, on the E. side, a section of vertical work, and also a mortared patch. The general appearance of the structures suggests a date, for building or thorough rebuilding, not earlier than the beginning of the nineteenth century, and they may well reflect action resulting from the Act of 1819.

The O.S. maps mark what seems to be a pier or jetty, about 700 ft. long, flanking the pier on the east and some 40 ft. to 60 ft. distant. Today this appears simply as a strip of concrete, flush with the beach, but it may in fact be the top of a jetty almost buried by mud and shingle.

<sup>1</sup> Vol. ix, 512.

<sup>4</sup> *Fife*, 418 n.

<sup>2</sup> *Description*, 15.

<sup>5</sup> *NSA*, loc. cit.

<sup>3</sup> *Survey and Maps of the Roads of North Britain*, Pls. 33 and 50.

## APPENDIX A

## List of Sites in Topographical Order, as in fig. 1

(Ports first recorded in the twelfth to seventeenth centuries are distinguished by bracketed figures.)

*Berwickshire*

Burnmouth (12)  
Eyemouth (12)  
Coldingham (17)  
St Abbs  
Redheugh  
Cove (17)  
Gutcher's Hole (17)

Skateraw (16)  
Dunbar (16)  
Belhaven (12)  
Tynningame (17)  
Seacliff  
Castleton (14)  
North Berwick (12)  
Aberlady (14)  
Port Seton (17)  
Cockenzie (16)  
Morison's Haven (16)

*East Lothian*

Thorntonloch (16)



*Midlothian*

Musselburgh (Inveresk) (12)  
Fisherrow (16)

*Edinburgh*

Portobello  
Leith (12)  
Newhaven (16)  
Wardie  
Muirhouse  
Cramond (14)

*West Lothian*

South Queensferry, ferry piers  
South Queensferry (12)  
Society (Stonehill)  
Kennedy's Pier  
Blackness Castle, Bay  
Blackness Castle  
Blackness (14)  
Bridgeness, with Carriden (17), Cuffabout and  
Grange (17)  
Bo'ness (16)

*Stirlingshire*

Grangemouth (Carron estuary)  
Slamannan Railway  
Carronshore  
Higginsneuk  
Polerth (16) (Newmiln)  
Airth (16)  
Dunmore  
South Alloa (17)  
Stirling (12)

*Clackmannanshire*

Devon estuary  
Cambus  
North Alloa, ferry (17)  
Alloa (17)  
Clackmannan Pow  
Ferryton  
Kennetpans

*Fife*

Kincardine, ferry  
Kincardine  
Culross (16)  
Valleyfield (17)  
Torry (17) and Torryburn (16)  
Crombie Point (Whalehaven) (17)  
Charlestown  
Limekilns (14)  
Brucehaven  
North Queensferry (14)

Inverkeithing Town (12)

*do.* West Ness (17)

*do.* East Ness

St Davids

Donibristle (Old)

*do.* (New)

Dalgety

Braefoot Bay

Aberdour (16)

Starley Burn (Carron Harbour)

Burntisland (17)

*do.* Bath House

Pettycur (16)

Kinghorn (16)

Kirkcaldy (16)

Dysart (17)

*do.*, old (15)

West Wemyss (16)

East Wemyss (16)

Methil (17)

Leven (17)

Lundin

Largo (16)

Earlsferry (12)

Elie (16)

St Monance (16)

Pittenweem, Boat Harbour (16)

Pittenweem (13)

Westhaven (17)

Anstruther Wester (13)

Anstruther Easter (16)

Cellardyke (16) (Skinfast Haven)

Crail (15)

Crail, Creeks (Cambo Sands, Fluckdub, Old Haiks,  
Putiken Water, Randerston)

Roome Bay

Fife Ness (17)

Kingsbarns

Boarhills

Kinkell Ness

St Andrews (13)

*do.* Castle

Eden estuary (Motray Water)

Tayport and Tayside

East Newport

Newport

Woodhaven

Balmerino, Kirkton

Balmerino

Birkhill

Lindores Pow

Newburgh

*Perthshire*

Ferryfield of Carpow

Elcho Castle

Perth (12)  
Inchyra  
Cairnie

Port Allen  
Powgavie  
Kingoodie

## APPENDIX B

### List of Royal Burghs in the Coastal Area

(From Pryde, G. S., *The Burghs of Scotland*)

Anstruther Easter  
Anstruther Wester  
Burntisland  
Crail  
Culross  
Cupar (Motray Water)  
Dunbar  
Dysart  
Earlsferry  
Edinburgh (Leith)  
Haddington (Aberlady)  
Inverkeithing

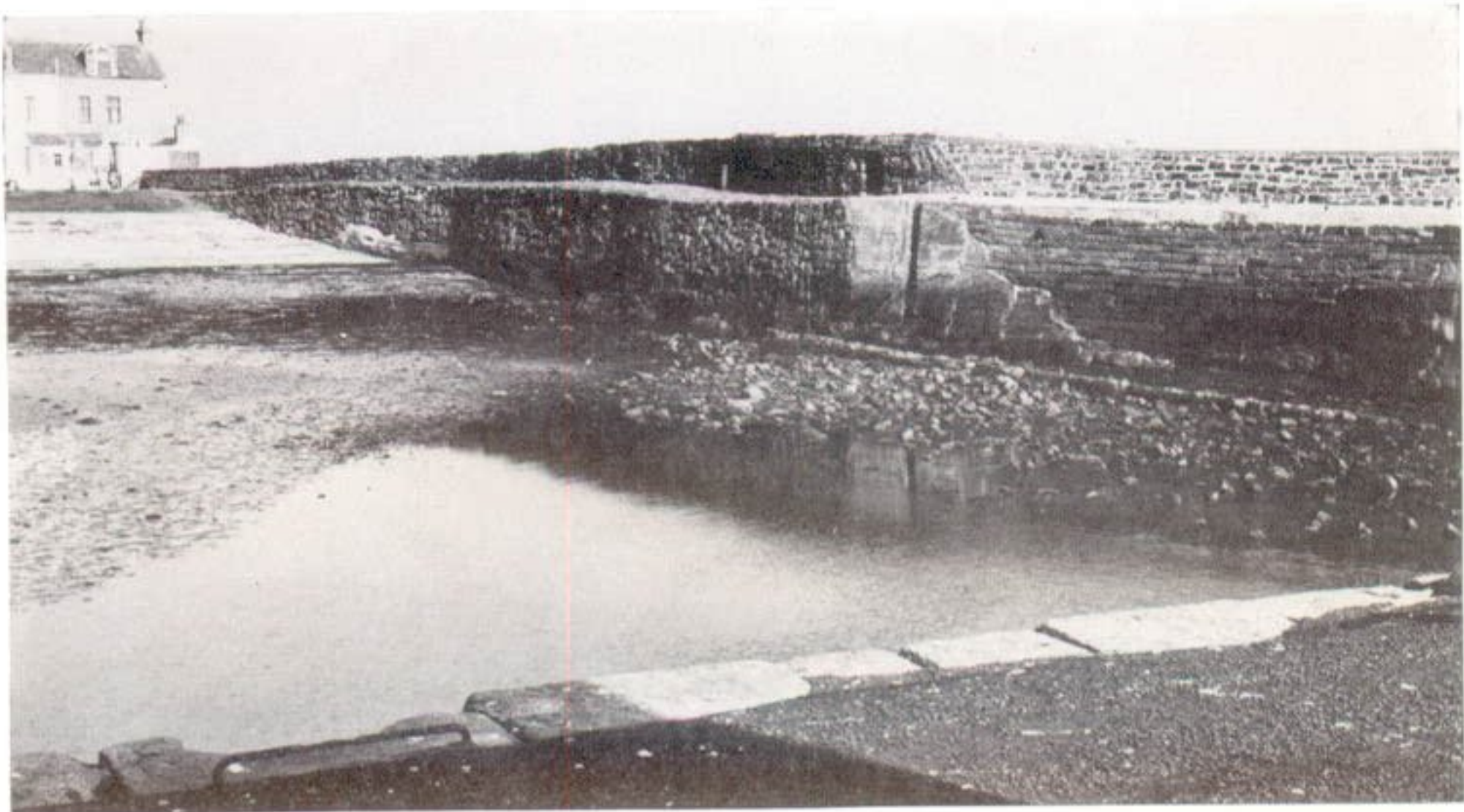
Kilrenny  
Kinghorn  
Kirkcaldy  
Linlithgow (Blackness)  
Newburgh (inactive)  
North Berwick  
Perth  
Pittenweem  
Queensferry  
St Andrews  
Stirling

## APPENDIX C

### Abbreviated Titles of some of the Sources quoted

<i>Corporations</i>	<i>Municipal Corporations (Scotland), Local Reports of the Commissioners, Pt. I (1835).</i>
<i>CRB</i>	<i>Records of the Convention of Royal Burghs.</i>
<i>Description</i>	Adair, J., <i>Description of the Sea-coast and Islands of Scotland (1703).</i>
<i>Fife</i>	Sibbald, Sir R., <i>The History . . . of the Sherifdoms of Fife and Kinross, etc. (ed. 1803).</i>
<i>Fisheries</i>	<i>Report of the Commissioners for the Herring Fishery.</i>
<i>Geogr. Coll.</i>	Macfarlane, W., <i>Geographical Collections relating to Scotland.</i>
<i>Linlithgowshire</i>	Sibbald, Sir R., <i>A Collection of Several Treatises: IV, 'The History and description of the Sherifdoms of Linlithgow and Stirling' (1739).</i>
<i>Pilot</i>	Collins, G., <i>Great Britain's Coasting Pilot (1756).</i>
<i>PSAS</i>	<i>Proceedings of the Society of Antiquaries of Scotland.</i>
<i>R.H.P.</i>	Register House plan.
<i>Tidal Harbours</i>	<i>Parliamentary Papers, Reports of Commissioners, Harbours, xxxii (1847).</i>
<i>TSNHAS</i>	<i>Transactions, Stirling Natural History and Archaeological Society.</i>





a Cellardyke: inner side of breakwater from NW.



b Pettycur: section of breakwater in ruin





a Aberdour: pier from N.



b Brucehaven: pier





a Crail: general view from W.



b Crail: N. quay, with vertical masonry and inserted 'patch'





a Charlestown: outside of inner pier from E.



b Dysart: general view from NNW.



c St Andrews: *centre*, main pier; *right*, cross-pier. From W.





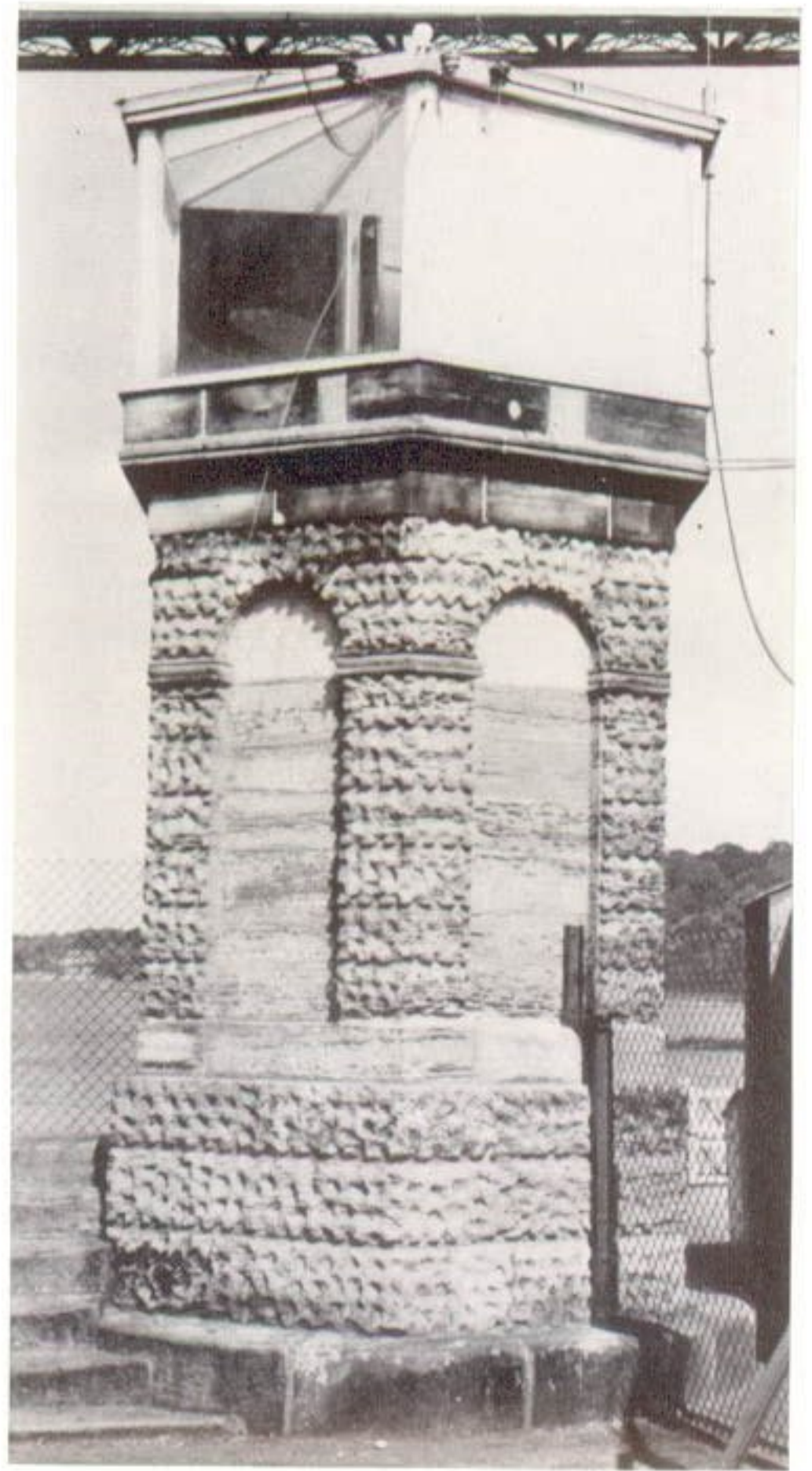
a Fisherrow: stone pawl



b Fisherrow: iron pawl



c North Queensferry: lighthouse from SW.



d South Queensferry: lighthouse from W.





a Castleton: landing-place with tide rising into channel, from cliff-top



b Culross: pier, from W.



c Culross: 'platform'





a North Berwick: view NE. along breakwater



b Slamannan: railway dock from W.