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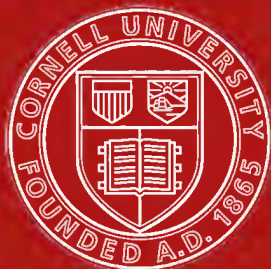
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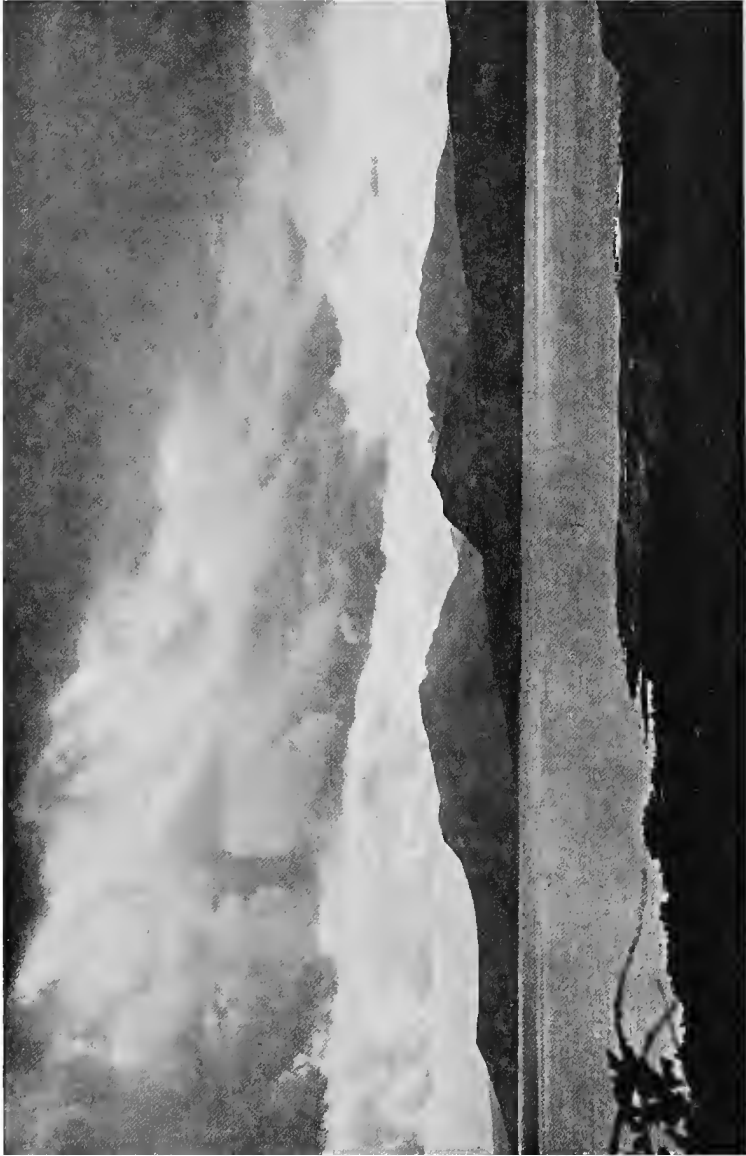
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THE BOOK OF ARRAN

Impression 550 Copies



Frontispiece.

ARRAN.

Photograph by Prof. T. H. Bryce.

THE BOOK OF ARRAN

EDITED BY

J. A. BALFOUR, F.R.HIST.S., F.S.A.Scot.

ARCHÆOLOGY



THE ARRAN SOCIETY OF GLASGOW

HUGH HOPKINS: GLASGOW

MCMX

TO
MARY LOUISE
MARCHIONESS OF GRAHAM
(NÉE DOUGLAS HAMILTON)
THIS VOLUME
IS
RESPECTFULLY DEDICATED

P R E F A C E

WHEN this volume was first projected, it was believed that the archæological record of the island would form but a portion of a book dealing with both the archæology and the history of Arran, but, as the work progressed, it was seen that much of interest would have to remain unrecorded if this plan were adhered to. The 'Book Committee' of the Arran Society, on having represented to them that a complete archæological survey of the island was desirable, willingly consented that this should be made. The result of that survey is now presented.

The volume, for convenience, has been divided into three sections: 1st, Prehistoric Period; 2nd, Protohistoric Period; 3rd, Historic Period—with various records under each heading. It should, however, be distinctly understood that the divisions are not used in any arbitrary sense: the science of archæology has demonstrated that no divisional line can with accuracy be drawn, separating the records of vast undated ages. Scientifically, reference is usually made to the Stone Age Culture, the Bronze Age Culture, and the Iron Age Culture, and the 'various memorials placed under these headings; this has bearing only on progression and not on time. For illustration, it is quite probable that the British Isles were still in the Stone Age when the great Eastern civilisations were at the zenith of their glory. The purpose of the division here adopted is

merely to present the various articles in an order as nearly chronological as possible. To the main sections are added an Introduction dealing with the geological evolution of the island, and a Miscellanea to gather in the smaller archæological notes.

With regard to the spelling of place-names, it was found that in many cases diverse forms were in use, and in some instances the names were so corrupted as to be meaningless. By the desire of the Arran Society, expert opinion has been obtained, and the rendering of names in this volume is believed to have been brought into accordance with Gaelic orthography and correct pronunciation. It was not, however, thought advisable to insist on uniformity of Gaelic spelling throughout, and a number of the more familiar place-names have been left untouched, though their form is unquestionably wrong. A list giving names as on the Ordnance map, and their amended forms, will be found at the end of the volume.

I desire to express, most cordially, my appreciation of the willing permission granted by the Marquis and Marchioness of Graham to excavate, where necessary, the various structures throughout the island; and, at the same time, to thank their factor, Mr. A. Hugh Douglas, and the various officers of the Arran estate, for their kind assistance during the progress of the work.

To Sir Archibald Geikie I am much indebted for undertaking, amid the pressure of other work, the valuable contribution that forms the Introduction to this volume; he wrote, 'My love for the island was kindled in boyhood, and it has burned warmly ever since.' I am sure every reader will feel grateful to him for the testimony to that love which

here appears. My debt to Professor Thomas H. Bryce is also large, not only for his contribution, but for the deep interest he has taken in this volume throughout, and for the great help he has given me. To Messrs. Erik Brate, F. R. Coles, F. C. Eeles, and C. E. Whitelaw, I owe sincere thanks for their contributions.

I further desire to record my appreciation of valuable counsel on various archæological points afforded to me by Dr. Joseph Anderson of the National Museum of Antiquities, and Dr. Haaken Schetelig of Bergens Museum, Bergen.

To the Council of the Society of Antiquaries of Scotland, I desire, on behalf of this Society, to tender grateful thanks for the generous loan of blocks, which have formed a large number of the illustrations in this book. These illustrations are marked thus (S. A.).

I am obliged to Messrs. Angus MacAlister and W. Brand Young for plans of various structures; to Mr. J. MacNaught Campbell of Kelvingrove Museum, Glasgow, for photographs of urns and drawing of stone axe.

The various friends on the island who arranged for workmen for the excavation of the structures in their neighbourhoods I warmly thank, and would specially mention the following members of the Society resident on the island, on whom a large burden was laid:—Messrs. Donald MacKelvie, Lamdash; A. N. MacNeil, Kildonan; and Alexander MacAlister, Millfield, Kilpatrick. In this connection I am also much obliged for the personal help rendered by a number of farmers in the various districts.

I also have to thank the Rev. J. E. Keir, South Queensferry, and other friends, for the reading of proof sheets.

In conclusion, I desire to express to the Book Committee of this Society my appreciation of their loyal support to me

as editor, and all of their number will judge it but fitting that I should specially mention the untiring interest in and work done for this volume by their late Convener, Mr. William J. MacAlister; personally I cannot thank him too warmly.

J. A. BALFOUR.

GLASGOW, *March*, 1910.

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INTRODUCTION

THE BUILDING-UP OF THE ISLAND

THE BUILDING-UP OF THE ISLAND.

By Sir ARCHIBALD GEIKIE, K.C.B., D.C.L., PRES.R.S.

RISING with Alpine dignity from the broad expanse of the Firth of Clyde, Arran has long enjoyed a special popularity among Scottish islands. It has seemed to be a characteristic piece of Highland scenery somehow set down in the midst of a southern estuary, so as to be easily accessible to the population of the Lowlands. In addition to all the charms of its landscapes, which every year draw thousands of delighted visitors to its shores, it has for three or four generations been a place of pilgrimage to geologists from all parts of the world. It has acquired the reputation of combining within its own limits an epitome of the geological history of both the Highland and Lowland regions of Scotland. Its more enthusiastic admirers have described it as a tract altogether unique in the fullness and clearness with which it illustrates the great principles of geology. As the island has been more sedulously studied in detail during recent years, its claim to some of these eulogies has been ascertained to rest on a securer base than most popular attributions. Arran has not indeed been found to present a complete epitome of Scottish geology, but it has been shown to contain a fuller and more interesting record of certain epochs of geological history than is to be met with in any space of similar extent in the country. Here are preserved relics of several great geological formations which once spread over the surrounding mainland, whence they have now entirely disappeared. Nowhere within the bounds of Scotland, so famous for its ample chronicle of

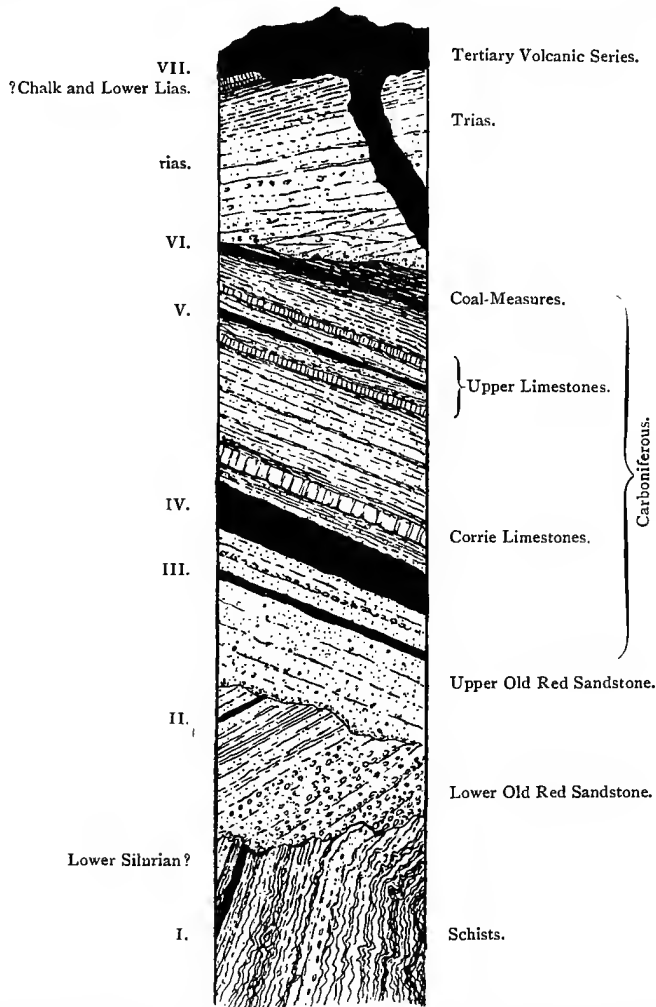
ancient volcanoes, can a corresponding area be cited with so full a record of subterranean activity as Arran possesses. No fewer than seven distinct periods of eruption, separated by long intervals of time, are here represented (see Diagram, p. 5). Moreover, the last of these periods is illustrated in so striking a manner as to give the island a special claim to the admiration of all who take interest in the ancient history of the globe. And to crown its scientific attractions, Arran provides an admirable field for the study of the various processes of sculpture whereby the surface of the land has been slowly carved into its present forms. All round the island the action of the sea can be watched in eroding the coast-line. The granite mountains supply endless materials for the study of the influence of the subaerial agents in their ceaseless work of erosion. No glaciers are now to be seen among these mountains, but many well-preserved moraines in the glens, some good ice-worn rock-surfaces, and thousands of transported boulders all over the island, furnish abundant lessons on the work of land-ice.¹

In the following pages I propose to give a sketch of the more important incidents in the long chronicle of events out of which Arran has emerged. In order that the reader may easily follow this summary, I have drawn the accompanying diagram, representing the order in which the different parts of the geological record in the island succeed each other, the oldest being at the bottom and the youngest at the top.

At the outset, it must be remembered that Arran is essentially a piece of the surrounding mainland, from which it came to be detached only at a late date in its history.

¹ The geology of Arran has been treated of by various writers, including James Hutton, Robert Jameson, John Macculloch, Andrew C. Ramsay, and James Bryce. The island has in recent years been mapped in detail by the Geological Survey, and a large amount of new and important information regarding its geology has been worked out by the late William Gunn and will be found in the *Survey Memoir on North Arran*, etc., published in 1903. The reader is referred to that volume for fuller particulars and for a bibliography of Arran geology.

TABLE OF THE GEOLOGICAL FORMATIONS IN ARRAN.



The Roman numerals indicate the various Volcanic platforms. Thus—I, The Lower Silurian? volcanic band. II, A thin volcanic zone in the Lower Old Red Sandstone. III, A zone near the top of the Upper Old Red Sandstone. IV, A thick series of lavas and tuffs towards the bottom of the Carboniferous formations. V, A thin volcanic band among the Upper Limestones. VI, Another band about the bottom of the Coal-Measures. VII, The great Tertiary Volcanic Series, comprising the granite of the northern half of the Island and the complex mass of intrusive rock in the southern half,

Hence we must consider this history in connection with that of Scotland as a whole. Certain parts of the record are not to be found at all in Arran, while, on the other hand, some portions are specially well represented there. The necessity for avoiding too local a view of the subject is experienced as soon as we begin to seek out the oldest memorials which have been preserved in Arran. We discover that at least two chapters of the most ancient geological records of Scotland appear to be absent in this island. No trace can be found here of the fundamental Gneiss and its complicated group of igneous rocks, so well displayed in the west of Sutherland and Ross-shire and in the Outer Hebrides. Nor has any representative been discovered of the most ancient unaltered sedimentary formation of the British Isles—the vast deposit of the Torridon Sandstone, which rises into such picturesque pyramids, cliffs, and corries in the north-western counties. Perhaps both of these great series of rocks lie deeply buried beneath the visible framework of Arran, no geological disturbance having yet upheaved them once more to the light of day.

The oldest rocks of Arran are certain schists, grits, and fine conglomerates, which underlie all the other formations of the district. Confined to the northern half of the island, these rocks are well exposed along the shore from the mouth of the Iorsa Water northwards to the east side of Lochranza, and also in the interior round the eastern margin of the granite mountains, from the bottom of Glen Chalmadale to Glen Rosa. They are a continuation of the similar masses of material that form the greater part of the southern Highlands. Their proper place among the series of formations in the earth's crust has not yet been definitely ascertained. They are, however, unquestionably a great succession of sedimentary deposits which have undergone considerable metamorphism. As will be remarked on a later page, there are some grounds for thinking that a portion

of them may be really altered Palæozoic strata, including representatives of at least the older part of the Lower Silurian formations.

There can, however, be little doubt as to the conditions in which these rocks were formed. They were originally alternations of fine mud, sand, and gravel which accumulated on the bottom of a sea that stretched all over the southern half, if not over the whole, of the site of Scotland. They attained a depth of probably many thousand feet. At a certain remote epoch, the geological date of which was earlier than the time of the Old Red Sandstone, these thick masses of sediment were subjected to great disturbances, whereby they were folded, cleaved, foliated, and crumpled, becoming in the end crystalline, but still in many places retaining uneffaced their original planes of deposition. So great was the pressure under which this metamorphism took place, that the hard pebbles of white quartz in the bands of conglomerate have been squeezed out of their original shapes and have been rearranged parallel with the superinduced planes of cleavage and foliation.

Thus the earliest chapter in the geological history of Arran, chronicled in this schistose series, not only brings before us an ancient sea-floor on which vast piles of sediment were accumulated, but shows, further, that the region became the theatre of great subterranean movements which profoundly changed the condition of these sediments, and eventually uplifted the sea-bottom into land. What may have been the configuration and extent of that land can only be conjectured. It not improbably included most of the British Isles and united them with Scandinavia. This wide terrestrial area, exposed for vast periods of time to ceaseless denudation, provided the sedimentary material out of which the geological formations of north-western Europe were in large measure built up. We learn from the evidence to be gleaned in Arran and along the flanks of the

Highlands, that the denudation was well advanced before the time of the Old Red Sandstone. There can be no doubt that the schists could not have acquired their present compressed and crystalline condition save under a thick overlying covering of rock. But this covering had already been in great part stripped off before the deposition of the Old Red conglomerates was completed, these masses of coarse shingle representing some of the material that was removed. No feature in the geological history of Scotland is revealed by more striking evidence than the extent to which the surface of the country has alternately been buried under deep sedimentary accumulations and upraised into land from which, by the various subaerial and marine agents of destruction, these accumulations have been gradually worn away. In Arran the reality of this majestic alternation of Nature's processes is brought home to us again and again, as we trace the succession of revolutions whereby the island has been brought to its present form. The oldest lesson of this kind here is that enforced by the schists and their relations to the later rocks. But we shall find it followed by other examples still more impressive.

Another lesson needs to be insisted on when any attempt is made to follow the succession of geological changes recorded in the rocks of a country. The broader features of the chronicle may seem to be mainly proofs of alternate submergences and re-elevations of land. And these proofs often lie so close together as to mislead us into the impression that the changes rapidly succeeded each other. Some effort of the imagination is required to realise that the oscillations, of which there is such clear evidence, do not necessarily imply great instability of the earth's crust. We have to remember that they were, in most cases, exceedingly slow, and that though the evidence for them may sometimes be comprised within a few yards of rock, these few yards may represent the lapse of a vast period of time.

The next chapter in the history of the framework of Arran is to be gleaned from a narrow strip of rocks that crosses the lower part of the valley of North Glen Sannox. Externally there is little to distinguish it from the schists on either side of it, and no one thought of separating it until the late Mr. William Gunn, in the course of the work of the Geological Survey, detected the close resemblance of its component rocks to certain bands which have been found along the border of the Highlands, and to others which have been traced over a wide extent of the Uplands of the south of Scotland. These rocks consist of black shales and cherts, associated with a thick group of volcanic and intrusive sheets which are distinguished by certain peculiar characters. In Ayrshire and elsewhere on the opposite mainland, the rocks with which these Arran examples so closely agree have yielded numerous fossils, which clearly show them to belong to the Arenig division of the Lower Silurian system. In North Glen Sannox, however, the rocks in question have shared in the metamorphism of the surrounding schists, and any fossils which they may have originally contained have been obliterated. The black shales have yielded no graptolites, while in the cherts no trace has been found of the numerous species of Radiolaria which have been obtained from the corresponding siliceous bands in the southern counties. The igneous rocks, however, have retained some of their distinctive original features, which strikingly correspond with those of the similar masses in the Arenig group on the mainland. The collocation of so many peculiar lithological characters affords a strong presumption that this group of rocks in North Glen Sannox is really a Lower Silurian band which has been folded in among the schists. The discovery of a single typical fossil would settle the question. Perhaps some enthusiastic geologist may be encouraged to persevere in the hunt for such a fossil until his labours are crowned with success.

If we provisionally assume these rocks to be of Arenig age, several interesting conclusions may be drawn from them. In the first place, they show that the subterranean movements which brought about the intense plication and metamorphism of the Highland schists had not ceased in the early part of the Silurian period. In the second place, they indicate that the remarkable outburst of volcanic activity in Arenig time in the south of Scotland reached at least as far as the north of Arran. The Silurian sea, which stretched across the whole region, was then marked by many submarine vents, from which lavas and ashes were discharged over an area which must have greatly exceeded 2000 square miles in extent. But even if we cannot with full certainty fix their precise geological age, there can be little doubt as to the volcanic nature of the 'greenstones' of North Glen Sannox. They present some of the distinctive characters of true lavas, and mark the earliest of the long succession of volcanic episodes in the history of this island. To the traveller who wanders down this lonely deserted valley, between the bridge and the sea, there is surely fit subject for meditation in the attempt to realise that the rocks beneath his feet in this peaceful solitude owe their origin to the explosions of an ancient submarine volcano.

The changes which followed the epoch of these volcanic eruptions have not been recorded in the geological chronicle of our island. They transpired during the time of terrestrial uplift and prolonged denudation to which reference has above been made. The next definite piece of evidence as to what was taking place here is supplied by the Old Red Sandstone, which is prolonged from the border of the Highlands into the northern half of Arran. This formation consists of conglomerates, red sandstone, and dark shales or mudstones, the whole having in some places a thickness of several thousand feet. These various sediments were accumulated in the lake-basins, of which the ancient marginal

beaches can here and there be traced in the Highlands. The waters in which their deposition took place appear to have been, for the most part, unfavourable to life; at least few traces of animal remains are found in the deposits, though here and there, on the mainland, remains of fishes are found to have been heaped together in such numbers as to show that the animals were killed in shoals, and were buried under sand or mud before there was time for their bodies to fall to pieces. Relics of terrestrial vegetation which grew around the lakes have been preserved in some of the sediments.

In Arran the records of this period are to be found in the massive conglomerates of the Lower Old Red Sandstone, which, stretching south-westwards from the flank of the Highlands, reappear in the two Sannox glens, followed southwards by a mass of purple and red sandstones and mudstones which, keeping along the margin of the granite mountains, sweep across the island to the shores of Machrie Bay. The oldest fossils yet found in Arran, consisting of land-plants, have been obtained from these mudstones. It is interesting to discover in Arran proofs of the volcanic activity which manifested itself so abundantly when these sedimentary materials were accumulating over the southern half of Scotland. It was then that outpourings of lavas and ashes built up the chains of the Sidlaw, Ochil, and Pentland Hills, together with the long line of heights from the south of Midlothian to the Ayrshire coast. The Arran conglomerates contain many pebbles derived from the waste of the volcanic cones and islets, but on the west side of the island an intercalated band of basic lava among the sandstones shows that at least one eruptive vent existed here. This band marks the second of the volcanic episodes in the history of Arran.

The Upper Old Red Sandstone is represented in our island by false-bedded red sandstone and brecciated conglomerates, which are well exposed for some three miles of

the coast between Corrie and the Fallen Rocks. These deposits, as is usual with red strata, are singularly barren of organic remains, a few doubtful fragments of plants being all that they have yet yielded. They include, however, the third volcanic platform in Arran. This consists of a zone of intercalated basic lavas about one hundred feet thick. It may mark eruptions coeval with those of the older part of the great volcanic development beneath the Carboniferous Limestone on the opposite mainland of Ayrshire.

From the top of the Upper Old Red Sandstone the chronicle continues with no visible gap through the several divisions of the Carboniferous system up to the Coal-Measures. The strata which comprise this record are confined to a narrow strip on the east side of the island much broken up by faults. Their total thickness is probably not far short of three thousand feet. They are well seen along the shore for two-thirds of a mile to the north of Corrie, and again for more than three miles from the Fallen Rocks northward to near the Cock. In one important respect they differ from all the other sedimentary rocks of Arran, in that they are full of the remains of plants and animals. The plants include ferns, horse-tail reeds, lycopods, and some gymnosperms. Among the animal organisms are various corals, urchins, encrinites, trilobites, polyzoa, brachiopods, lamellibranchs, gasteropods, cephalopods, and fishes. Some of these fossils occur in great numbers in the bands of limestone. Every visitor to Corrie is familiar with the picturesque group of caverns which have been quarried out of the thick limestone on the steep slope behind the village, and where the valves of the *Productus giganteus* are crowded together on the under surfaces of the sheets of stone that form the roof. All the characteristic aspects of the Scottish Carboniferous rocks are here to be seen, packed into small space, and many of them admirably dissected by the waves along the beach. The alternation of lagoon conditions of

deposit, shown by the shales and sandstones, with the intervals of clearer and deeper water, indicated by the bands of limestone, when the corals and other marine organisms flourished in such numbers, can be studied to every advantage on these sequestered shores.

In considering the geographical changes represented by the Carboniferous strata, we realise that the wide stretch of shallow sea that then covered at least the southern half of Scotland spread across the site of Arran. It was a time of slow subsidence, when the sea-floor sank under an accumulation of thousands of feet of sediment. How far the Highlands were then submerged remains unknown. Not improbably the Carboniferous deposits covered much of these high grounds, as they certainly did the older rocks of the north of Ireland.

Of one of the interesting features of the Scottish development of these deposits Arran affords some excellent examples. It contains no fewer than three of the volcanic platforms by which the Carboniferous formations of the mainland are distinguished. The oldest of these consists of a group of lavas and intercalated tuffs between three hundred and four hundred feet thick, representing a succession of eruptions, with intervals of quiescence during which the ordinary mechanical sediments of the sea-bottom were laid down. These manifestations of volcanic energy took place before the thick limestone of Corrie was accumulated, as may be seen on the beach to the north of the village. They were contemporaneous with the great outflows which preceded the deposition of the Hurlet Limestone from the coast of north Ayrshire eastward to Midlothian, and of which conspicuous outliers are to be seen in the Greater and Lesser Cumbrae and on the south end of Bute.

The second platform, seen among the streams in the woods to the north of Brodick Castle in the form of a sheet of lava about twenty-five to thirty feet thick, lies probably

on the same horizon as the volcanic bands which occur in the upper part of the Carboniferous Limestone series of Ayrshire. The third platform is exposed at Slidderie Waterhead, where some lavas and tuffs probably represent part of the youngest Carboniferous eruptions of Ayrshire, at the top of the Limestone and base of the Coal-Measures.

In Arran, as on the mainland opposite, it appears that volcanic energy was vigorous about the beginning of the Carboniferous period and died out before its close. The materials erupted were here much less abundant than elsewhere, as if the district lay towards the outer limits of the volcanic region. But the oldest and most important eruptions are so admirably illustrated in the series of clear sections on the coast, that they offer to the geologist one of the most interesting of the many attractions of the island. With the highest of the three platforms the record of Palæozoic volcanic action in Arran comes to an end. We see that at least six successive epochs can be detected during which volcanoes were active over the site of this island, that the eruptions were all subaqueous, and that after the latest of them the whole region was submerged under the waters in which the Coal-Measures were deposited.

At this part of our review of the past we encounter another of the great gaps in the Geological Record where the chronicles are missing of a vast interval of time, doubtless replete with many geographical changes. During this protracted period the Carboniferous formations of Britain, several thousand feet in thickness, were greatly disturbed by subterranean movements. Plicated, fractured, and broken up into many separate basins, they were exposed, as a land-surface, to such long continued denudation as to be completely stripped off from the higher grounds, leaving there exposed the older rocks which had been buried beneath them. From the stupendous amount of this waste, some

indication may be derived of the enormous lapse of time that was required for its accomplishment.

In Arran the proofs of the reality of this huge gap in the chronicle are singularly clear. When we pass from the highest visible Carboniferous rocks to the next pages of the record which have here been preserved—those of the so-called New Red Sandstone—we can appreciate the extent of the dislocations by which the country had been affected in the long interval, and also the stupendous character of the waste which was then effected. So far as is known, the Carboniferous formations followed each other here as elsewhere, with no serious break, insomuch that although in some places their total thickness is greater than in others, they present a fairly continuous sequence of strata. There is no reason to doubt, for instance, that the lower limestones of Corrie and Lagan were buried under, at least, some fifteen hundred or two thousand feet of sediments deposited above them as the sea-floor continued to subside. During the period of disturbance this thick series of Carboniferous strata was broken up into vast blocks which adjusted themselves at different levels. In this ruptured condition they underwent so large an amount of denudation, that from the higher blocks the whole of the Carboniferous series was worn away. Hence when the ground once more subsided under water, the New Red Sandstone sediments, which were next laid down, came to lie on different Carboniferous horizons, and even passed across them all so as to repose directly upon the Old Red Sandstone. So thoroughly had the older rocks been dislocated, that fragments of the limestones, full of characteristic Lower Carboniferous fossils, are enclosed among the younger red sediments. The length of this post-Carboniferous lacuna in the geological record of the country is thus nowhere more impressively demonstrated than in Arran, alike by the extent of the dislocation and of the subsequent denudation of the strata.

The New Red Sandstone or Trias of Arran, though concealed under large bodies of igneous rocks in much of the interior of the southern half of the island, is well exposed along the coast and in some of the valleys. It consists of bright brick-red sandstones and breccias, surmounted by a series of red shales or marls, the whole having, perhaps, a thickness of as much as two thousand or three thousand feet. These deposits probably accumulated in an inland sea or lake, the waters of which were saline and impregnated with ferruginous solutions. In England and the north of Ireland the corresponding formation includes deposits of rock-salt and gypsum, but these minerals have not been observed in Arran.

From the thickness of these red sediments, it is tolerably certain that they must have spread over the whole of the island, burying everything of older date in one continuous sheet, which, not improbably, stretched into Antrim on the one hand and into the lowlands of Scotland on the other. That they have been stripped off much of the area originally covered by them, and that their removal was accompanied by the destruction and disappearance of other geological formations which covered them, has been revealed by one of the most remarkable and important discoveries made for many years in the geology of the British Isles. To the officers of the Geological Survey, and more particularly to the late Mr. William Gunn and the fossil collector, Mr. Alexander Macconochie, we are indebted for this interesting observation, which at last sets at rest the question of the age of the red sandstones and marls of Arran, and opens out an astonishing vista in the later denudation of the country.

It had long been surmised that the granite of Arran is not one of the ancient eruptive masses of the Highlands, but, like that of Skye, forms part of the volcanic protrusions of Tertiary time. Macculloch had noticed that no pebbles of it are to be found in any of the conglomerates or sand-

stones around it. As this could hardly have been the case had the granite been there when these sediments were in course of accumulation, the inference was drawn that this igneous mass must be of later date. The only other post-Carboniferous granite known in Scotland was that of the Inner Hebrides, with which, therefore, the Arran rock was tentatively classed. Microscopic examination afterwards brought out some close resemblances in minute structure between the granites of Arran, Skye, and Mull.

If the granite of the northern half of Arran was protruded at so late a date as older Tertiary time, then it almost certainly followed that the intricate mass of intrusions which have broken through the red sandstones in the southern half of the island must belong to the same comparatively recent outbreak of igneous action. Between these southern rocks also and those of the Inner Hebrides numerous lithological resemblances could be traced. Hence geologists were generally persuaded that the granite and other igneous masses which have been thrust through the structure of Arran are not only the youngest rocks in the island, but date back to no more remote a period than that in which the sands and clays of Middlesex and Hampshire were accumulated.

When the detailed mapping of Arran by the Geological Survey was in progress, Mr. Gunn found among the high grounds on the south side of the String Road leading from Brodick to Shisken, an oval-shaped area between three and four miles long and from two to three miles broad, wherein is heaped together the most complex assemblage of rocks in the island. Round the border of this area a ring of acid intrusive materials can be traced, inside of which lies a core of coarse volcanic agglomerate and conglomerate, traversed in all directions by masses of acid and basic igneous rocks. There can be little doubt that this tumultuous mass of volcanic material marks the position of one or more openings from

which discharges of vapours and fragmentary materials escaped. The careful examination of it brought to light some altogether unexpected facts in the geological history of Scotland. Besides the abundant fragments of igneous material in this vent, there were found also many pieces of sedimentary rocks, some of great size. The largest of them, covering an area of as much as several acres, consists of red and grey marls and black shales with limestones. That this is a huge displaced block of Triassic strata was proved by the discovery that the dark shales contain a number of fossil shells, including some of the species characteristic of the Rhaetic group of strata at the top of the Trias. This important observation, made by Mr. Macconochie, may be regarded as having finally settled the geological age of the red sandstones and marls of the southern half of Arran, for it showed that before the outburst of the subterranean activity that poured forth such prodigious heaps of igneous material, the red sandstones and marls were crowned with the Rhaetic group.

Further examination led to the recognition of another disrupted mass of brown shale and limestone, probably a hundred yards long and nearly fifty yards broad, from which a considerable collection of the characteristic fossils of the Lower Lias was gathered. Other large masses of fine white sandstones, probably Jurassic, were also found. It was evident that in Arran, as in Antrim, the Rhaetic group was succeeded by the lower portion of the Liassic series, possibly even by higher parts of the Jurassic system. But the parallel between the south-west of Scotland and the north-east of Ireland was brought out yet more closely by still another striking discovery. The Lower Lias in Antrim, as has long been known, is there followed unconformably by the hard white limestone or chalk which forms so picturesque a feature under the Tertiary basalt plateau. The further investigation of this same Arran volcanic centre

revealed the important fact that certain blocks of hard white limestone, with irregular lumps of chert or flint, which occur among the other débris that fills the vent, and which are large enough to have been quarried for lime, are full of characteristic fossils of the Chalk.

Let us try to realise what these seemingly dry facts mean in the interpretation of the geological history of Arran. They prove that long before the appearance of the granite mountains in the north and the rugged heights in the south of the island, this part of Scotland was overspread by the bitter waters of the Trias, in which a thick mass of red sediment was laid down ; that these waters eventually made way for the sea in which the Lower Lias was deposited, and which probably stretched over most of Britain, from the north-west Highlands southward to beyond the coast of Devonshire, and thence across into France and Germany. The fact that the Lias in Antrim, and probably also in Arran, is followed, not by the rest of the Jurassic formations, as it is farther south, but by the Chalk, points to another huge gap in the geological record of this northern district, representing a long lapse of time during which denudation made great progress. When the deeply eroded surface of the land was again submerged, it received a covering of Chalk which spread across the remnants left of the Lias to the older rocks, even to the Highlands schists. We can dimly perceive that long afterwards the land that had sunk below the floor of the Cretaceous sea was once more upheaved, some portions to a height of fifteen hundred feet or more above the present sea-level, as in the west of Argyllshire, and that it has ever since been undergoing continuous degradation.

So long as a submerged land-surface remains below the sea it is protected from the operation of the various destructive agents by which it is attacked as soon as it reappears above the waves. If, during the time of submergence, a thick mass of sedimentary material has been

deposited, this covering may long continue to protect the buried land when the ground re-emerges and is again exposed to denudation. It is perhaps only by realising how, in this two-fold way, the waste of an ancient terrestrial surface has been from time to time arrested, that the geologist can explain to himself how so much of the geological record has survived up to the present time. Thus, in the case of Scotland, if the Lowlands were covered with a thick mantle of Trias, Lias, and Chalk, the older formations underneath would be screened from erosion until, on re-elevation into land, that mantle was worn through. When the rains fell and streams began to flow on the newly uplifted land, the drainage would follow the slopes and irregularities of the overlying cover of younger formations. Valleys would thus be traced out without reference to the earlier land-surface that had been buried beneath these formations, and these valleys would retain their directions when they had been cut down into the older rocks underneath. It is only by some such explanation that we can account for the complete disregard so commonly shown by the rivers to the structure of the rocks in which their channels now run. There is thus high probability in the belief that the present drainage-system of much, if not the whole, of Scotland did not begin to be traced out until after the time of the Chalk.

It was on this land-surface of upraised Secondary formations that the seventh volcanic episode in the building of Arran took place. This was the last, and perhaps the grandest, of all the volcanic scenes in the history of the British Isles. From the basin of the Clyde and the south of Antrim northward through the chain of the Inner Hebrides to the Faroe Islands, the phenomena of eruption were displayed on a scale of great magnificence. The region over thousands of square miles was convulsed and fissured. In the vast number of rents thus formed dark basic lava rose up to form dykes, and from many places welled forth at the

surface in streams of molten rock. Of these superficial outflows the terraced hills of Antrim, Mull, Morven, and Skye have survived as noble fragments. Here and there the volcanic energy was concentrated in the protrusion of huge masses of igneous rocks which now form lofty and picturesque groups of mountains such as those of the Cuillin and Red Hills of Skye, and those of the islands of Mull and Rum. It is as part of this great volcanic manifestation that the heights of Arran have to be considered.

Let us begin the examination of this part of the history of the island by returning to the large eruptive centre at which the broken masses of Rhaetic, Liassic, and Cretaceous strata were discovered. If this area represents a single volcanic vent, the volcano must have had a funnel greatly more capacious than that of Vesuvius, and the pile of material ejected from it may have rivalled even such a cone as that of Etna. Possibly, however, the occurrence of the large cakes of Triassic and Liassic strata may rather indicate the existence of a number of closely adjoining vents, mingling their ejections, and, perhaps, not all active at the same time. But whether it was one gigantic crater or a group of smaller craters, we see that the mantle of Secondary strata was broken through, and that enormous cakes of these strata were tossed around, some of them eventually tumbling into the chasm beneath them. That the eruptive period at this place lasted for a considerable time, and was marked by great volcanic energy, is testified by the complex mass of acid and basic intrusions which surround the core of fragmentary materials and traverse it in all directions. Whether, or to what extent, any lava was here poured out over the surrounding country will probably never be ascertainable, so enormous has been the subsequent denudation of the ground. It is hardly credible that when such a colossal amount of fragmentary stuff was hurled up the volcanic chimney there should have been no wide dispersion of ashes

and stones over the surface around, and equally unlikely that when such an abundance of acid and basic lavas was injected into the Triassic strata and into the eruptive orifice, none of this molten rock should have flowed out above ground. But all traces of any such superficial ejections have long since been effaced. The ground has been so greatly worn down that only the subterranean structure of the volcano can now be seen.

While these events were transpiring in the southern part of the island, a different and still more colossal display of volcanic energy manifested itself in the northern half. It was then that the huge mass of granite was protruded which covers some forty square miles of the present surface, and out of which the picturesque mountain group of Arran has been carved. The gigantic force with which this protrusion was effected may be judged from the way in which the schists and Old Red Sandstone have been driven aside to make way for so great a wedge of intrusive rock. That this rock emerged from the depths in a not wholly consolidated condition is shown by the numerous veins which it has forced into cracks of the surrounding schists. Its great heat is indicated by the metamorphism superinduced by it on the rocks through which it has risen. It was not all protruded at the same time. The coarse-grained variety, which occupies most of the ground to the east of the Iorsa, appears to have risen first, followed, perhaps at no long interval, by the fine-grained kind seen to the west of Glen Iorsa. But the uprise of this huge body of granite did not end the ascent of molten materials from the volcanic masses underneath, for dykes of pitchstone, felsite, quartz-porphry, and basalt continued from time to time to be ejected into both the coarser and finer portions of the granite.

In no part of the granite area, nor around it, has any indication been found that the protrusion of this rock was attended with superficial discharges of volcanic materials.

Possibly there were no such accompaniments, but the rock may have been pushed up in a dome-shaped mass like the trachytic Puys of Auvergne. If so, we may speculate as to whether it carried upward with it some part of the covering of sedimentary rocks which then stretched across the site of Arran. We know that it broke through and drove aside the schists, the Old Red Sandstone and the Carboniferous series. But it may have borne upward a huge blister-like envelope of Triassic strata, like one of Mr. Gilbert's laccolites in the Henry Mountains, and may never have actually appeared at the surface until in long subsequent ages it was laid bare by the gradual removal of the overlying mantle of sandstone and marls. On the other hand, the way in which the large ring of granite and other rocks is associated with the agglomerate among the heights to the south of the String Road has suggested the idea that possibly the granite mountains of Arran may mark the site of a still larger volcano, of which they represent merely the stump or core. Which of these two views represents what actually took place will perhaps never be satisfactorily decided.

Allusion must be here made to one of the most conspicuous features of the Tertiary volcanic series of Arran—the basic dykes so extraordinarily abundant and conspicuous, especially in the southern part of the island. They represent molten basalt which rose up and filled fissures in the rocks. They vary in width from a few inches to eight or ten feet, but a few attain greater dimensions, sometimes even as much as fifty feet. Like those of the western Highlands and Islands, they generally trend towards the north-west, such being the prevalent direction taken by the rents made in the earth's crust during the subterranean commotions of the Tertiary volcanic period in Britain. It cannot but fill the mind with astonishment to witness the proof of the extent of the reservoir of lava under ground, from which the molten rock was supplied, and to trace these many hundreds of dykes

not only at sea-level, but far up among the crests of the mountains, not in Arran alone, but over much of the West of Scotland. The uprising of these dykes did not occur only in a single section of the volcanic period. Some of them are older than the Arran granite, while most of them are probably younger than that rock. They mark, perhaps, the latest phase in the volcanic history of this island, and the closing feature in the last volcanic period in the British Isles.

The end of that period was followed by another prolonged interval, which is unrepresented in Arran by any sedimentary record. Of its great duration we have evidence in the enormous amount of denudation which the volcanic rocks have undergone. This evidence is brought home to the mind with great force by the dykes which traverse all the other rocks. It is obvious that these ribs of once molten lava could not have been arrested where they now crop out at the surface, for the fluid material would at once have flowed out on all sides and covered the ground. How much has been worn away from what is now to be seen of them cannot be determined, but here and there a minimum can be indicated in the amount of material removed. Take, for instance, one of the most conspicuous and interesting dykes in the island—that which has risen in the fissure of Ceum na Caillich, or Carline's Step, on the granite crest east of Caisteal Abhail, and which can be traced southward across Glen Sannox, and for some way down Glen Rosa. It is quite clear that if the surface of the ground, at the time of the uprising of this dyke, had been anything like what it is now, the basalt would never have risen up to the tops of the ridges, but would have escaped and flowed out along the bottoms of the glens. These valleys, therefore, have certainly been excavated since the dykes were formed. But this amount of denudation may represent only a small fraction of that by which the whole surrounding ground has

been lowered. There may have been as great a thickness of granite worn away from above the ridge of Caisteal Abhail and Ceum na Caillich as has been cleared out of the valley below.

By gathering together, from all parts of the country, examples like that above cited from the Arran glens, where a minimum amount of degradation can be ascertained, we obtain some conception of the extent to which the general surface of the country must have been denuded since the last volcanic period. But at the same time, to use the impressive words of John Playfair, 'we become sensible how much farther reason may sometimes go than imagination can venture to follow.' It is difficult to persuade ourselves that, within a time so recent in a geological sense, such stupendous changes in the landscapes of the country can have been effected, and still more, that the work could have been done by the daily operation of the subaerial agents with which we are familiar. Yet nowhere can the truth be more vividly impressed upon the mind than among the granite mountains of Arran. The geologist who climbs their scarped sides and makes his way along their splintered crests beholds at every turn the character and efficacy of the means employed by Nature in her gigantic task of landscape sculpture. He sees how the solid rock is split open along its joints by the rains and frosts, and how block after block is wedged off and rolls down the steep slopes below. He can mark at the foot of each crag and boulder the crumbled sand which sun and shower have loosened from the bare surface of the stone. The whole process, in all its successive stages, seems to be in progress before his eyes, and he descends once more to the low ground with a deepened conviction of the potent results which are achieved in the course of ages by the seemingly insignificant agencies of climate and weather.

Passing over the vast interval of time during which,

after the cessation of the last volcanic eruptions, the surface of Arran, like that of the rest of Scotland, was being slowly carved into its present forms, we come to the next part of the history which is recorded in sedimentary deposits, and find ourselves in the midst of the chronicles of the Ice Age. When that interesting period began, the general configuration of the country appears to have become in the main what it is now, though not improbably the level of the land was higher, and many of the hollows which are now firths and sea-lochs were then glens and straths. Arran, Bute, and the Cumbraes would then form part of the mainland. At the time of the greatest glaciation, the mountainous northern part of Arran rose like a great rock in the path of the ice-sheet from the north which swept round either side, leaving its track legibly engraven on the rocks. The ice then passed south-westward across the island to join the masses which were moving down the hollows of Kilbrannan Sound and the Firth of Clyde. Eventually the mountain group became an independent ice-field, and sent its glaciers down into the low country around. It was these ice-streams which transported and dropped the numerous blocks of granite that form such prominent features on the low ground and the coast. As the ice retreated towards its central snow-field it broke up into local or valley glaciers, which have left their moraines in crescentic mounds up to the heads of the glens. One of the most perfect groups of such moraines may be seen at the head of Glen Cloy, where they once ponded back the drainage and formed a lake, which, by the cutting through of the barrier of débris, has been emptied and is now represented by the level alluvium of its floor.

At what particular time in late geological history a general subsidence of the west coast of Scotland took place has not been determined. It certainly occurred after the topography of the country had nearly assumed its present form. Before it began Scotland covered a considerably larger

surface than it does now, for its numerous sea-lochs were then valleys, and the western seaboard of the country probably lay along the Atlantic front of the Hebrides. This higher elevation of the whole region may have existed at the beginning of the Ice Age. In the end, however, the whole of north-western Europe, from the south-west of Ireland to the North Cape, began to be submerged. As the sea gradually advanced up the valleys these were turned into fjords or sea-lochs, while the higher parts of the submerged tracts became islands. In this way arose the indented coast-line which is so characteristic of the west of Scotland and the west of Norway. It was at this time that Arran became an island along with the other islets that diversify the surface of the Firth of Clyde.

Since the time of the deepest submergence there has been a re-elevation of the land to the extent of at least a hundred feet, and probably more. The uprising did not take place all at once or continuously, but by stages, with long pauses between them, when there was little or no change of level. These pauses are marked by lines of raised beach which run along the coast parallel with the present general trend of the sea-margin. A raised beach may either consist of a platform cut by the waves out of the rocks or of a terrace of sand and gravel laid down between tide-marks. The same line of raised beach may be a rock-shelf at one point of its course and a strip of sandy ground at another. The twenty-five feet raised beach is one of the most conspicuous features all round the coast of Arran, as it is along that of the other islands and on both sides of the Firth of Clyde. Nowhere is it more strikingly exhibited than on the shore between Brodick and Glen Sannox, where it forms a long level strip of meadows, which are bounded on the inner side by a line of sandstone cliffs, pierced by many ancient sea-worn caves half concealed beneath luxuriant overhanging vegetation. From its exceedingly well-defined character,

this beach may be regarded as the memorial of a long stay of the land at that level during the re-elevation. Other beaches are found at greater heights, especially one at forty or fifty feet, and one at about a hundred feet, which can be traced in the valleys on both sides of the island. But as these are of greater age they have been longer exposed to waste, and are in consequence less easily recognisable.

The latest geological memorials in Arran lead us into the period of the advent of man. At the time when the earliest settlers established themselves here, the island possessed the same general configuration as it still displays, but with some minor differences of surface, due in large measure to changes in the character of the vegetation. There can be little doubt that in those remote times there was much more peat-covered ground throughout Scotland than there is to-day. Instead of being confined for the most part to the uplands, as at present, the peaty mantle then spread over much of the low grounds, whence it has nearly all disappeared. The natural woods that remain in Arran are an interesting relic of what was, no doubt, once the aspect of most of the island, save the higher and barer hills, and especially the naked slopes and crags of granite. From such existing remains of the old forest we can see that copses of birch, alder, hazel, mountain-ash, and oak flourished thickly in the glens and along the shores, and formed retreats for the animals that were hunted by man. The lakes of the island were then much more numerous than now. In Arran, as elsewhere, on the retirement of the ice of the Glacial Period, the surface of the ground was left strewn with irregular heaps of drifted clay, sand, and boulders, in the hollows of which rain and melted snow collected, so that the general surface of the ground was abundantly dotted over with pools and lakes. The larger sheets of fresh water, with their fish and wildfowl, would offer to the early in-

inhabitants favourable sites for the construction of lake-dwellings.

Since these far-off times many minor changes have taken place, some by the interference of man, others by the processes of Nature. In the progress of agriculture during the last few centuries, the ancient peaty covering of the lower ground has been for the most part ploughed up and replaced by cornfields and meadows. The woodlands have been to a great degree felled, though happily not a few charming portions of them still survive. The wild animals have been much reduced in number, and in some cases wholly extirpated. The red deer, which is the largest representative of the old fauna, can hardly now be looked upon as really wild, for it would have disappeared long ago had it not been carefully preserved. Flocks of sheep and herds of cattle now browse over hills and plains where the aboriginal natives hunted the wild ox, the deer, the wolf, and other animals that have long been extinct here.

The hand of Nature has been even more uninterruptedly busy than that of man in slowly altering the details of the landscape. Many of the lakes have been gradually silted up, owing to sediment washed into them from the slopes above, others, encroached upon by lacustrine vegetation, have been converted into peat-bogs. As has already been stated, impressive evidence of ceaseless decay is furnished by the jagged crests and craggy declivities of granite and by the vast sheets of débris strewn down the slopes below them. The same lesson is pressed upon the attention in every other part of the island. Each shower of rain can be seen to contribute its share of the task by washing the crumbled substance of the rocks into the water-courses, whence it is swept down to the sea. Nor does the decay cease at the margin of the island. All along the coast-line the waves and tidal currents are at work gnawing the shore and slowly encroaching on the land. Though it may not be possible

to appreciate the rate of this demolition, the reality of the operation may be witnessed not only on every rocky headland, but even among the sheltered bays.

Nevertheless it may perhaps seem to the casual observer, as it did to most geologists a hundred years ago, that even when the combined results of all the various processes of erosion, subaerial and marine, are assessed at their utmost value, so comparatively little has been achieved by them within the centuries of human experience, that these familiar processes must surely be too feeble to have effected the stupendous denudations and depositions of which such striking examples are revealed in geological history. But the apparent contradiction between the colossal nature of the effect and the supposed inadequacy of the cause, disappears when an adequate conception is formed of the multiplying power of time, and of the length of the succession of ages during which the work was carried on. It is from a contemplation of the very slowness of the rate at which this work advances that we gain the most vivid impression of the length of geological time. And among the precious and enduring lessons which the island of Arran is fitted to convey to the geologist, there is none which is presented to him more insistently and cogently than that which teaches the vastness of the antiquity of our globe.

PREHISTORIC PERIOD
THE SEPULCHRAL REMAINS
CUP AND RING-MARKED ROCKS

THE SEPULCHRAL REMAINS.

By Professor THOMAS H. BRYCE, M.A., M.D.

THE island of Arran is peculiarly rich in memorials of a remote past. Just as to the geologist it provides in itself a kind of epitome of the story of the rocks, so to the archæologist it furnishes, within its own limited area, a fairly complete summary of the Prehistory of Scotland.

The prehistoric era embraces two periods: an earlier, which may be termed the period of the Monuments; and a later, which intervenes between the period of the monuments and the dawn of history. The earlier period can be reconstructed in nearly every detail, seeing that at one time or another all the surviving monuments have been thoroughly excavated. The second period is little known. It must have been a time of stress and struggle, during which the knowledge of iron, as applied to domestic and military uses, began to spread northwards. More or less vague hints are to be gathered, from the excavation of domestic and fortified sites in Arran and Argyll, of a gradual advance in culture during an unknown number of centuries leading up to Viking and early Christian times; but, as far as sepulchral remains are concerned, we have nothing to throw light on the civilisation of the islanders during a period which must have been a lengthy one. The Iron Age is represented only by two Viking burials, one at Lamdash, the other at Kings Cross Point, and the latter brings us down to the ninth century after Christ.

The island of Arran consists of two sections of very differ-

ent physical characters. In the northern part the mountains come steeply down to the sea, and it is only on the platform of the old sea-beach, and on the flat ground at the mouths of the larger streams, that the inhabitants find a limited foothold. The southern part is of much lower elevation. On south and west there extends a broad and more or less cultivated plain, while on south and east there are stretches of level ground, and some wider pastoral valleys, which have tempted a scanty population from the belt by the sea. The same conditions must have prevailed in olden times, though no doubt forests still further limited the area of occupation. Accordingly we find the monuments of the early inhabitants scattered over the southern section of the island, more especially on the western plain and by the seashore, but also up the more considerable glens, whereas at the north end there remain only isolated examples at the mouths of the greater streams and on the old sea-beach.

The earliest inhabitants of Arran of whom we have traces were clearly an immigrant race and comparatively late comers. They were the builders of the Chambered Cairns. No remains have yet been found of a still earlier people who must certainly at one time have occupied the mainland and islands. These were not the hunters of Palæolithic times—there is no definite evidence that Scotland was inhabited in the earlier Stone Age—but corresponded to the early Neolithic people of the Danish Kitchen Middens. Here and there vestiges of their occupation are to be seen by the seashore in the form of mounds of shells, among which implements of stone, of bone, and of deer-horn have been recovered. It is possible that a large kitchen midden of this sort at Glecknabae, on the western shore of Bute, placed on the old sea-beach and underlying a Chambered Cairn, may be a relic of those earlier islanders.¹ No im-

¹ *Proc. Soc. Antiquaries Scot.*, vol. xxxviii. p. 37.

plements were found among the shell débris, but the situation of the midden under a cairn of this class is evidence of great antiquity. It is clear that the deposit must have been already grown over before the builders of the cairn selected the elevation it formed as the site of their sepulchre.

The difficulty of defining the earlier occupation is that we have no graves which can be referred to it, and this not only in Arran but in any part of Scotland. The Chambered Cairns, presently to be described, belong to a later phase of the Neolithic culture. Granted the presence of Neolithic man in Scotland before the era of the cairns, the conditions become the same as those in Scandinavia, and we must postulate the existence of a race distributed all over the north-western parts of Europe as the primitive substratum of the historic populations. It is probable that they came from the south as the glacial climate moderated, but they cannot be represented by the people of the Chambered Cairns.

The author, in another place,¹ has suggested that this early race survives in the type of so-called Celt, who represents the Caledonians of Tacitus, and is characterised by tall stature, red hair, a long narrow head, and prominent cheek bones. He is sharply distinguished from the short dark Celts, and also from the tall blond Scandinavian type dating from the Viking incursions. We are not, however, here concerned with this problem. It will suffice for our purpose, if it has been made clear that we postulate for the Clyde estuary, as elsewhere, the existence of a more primitive people than the race of chamber builders who have left so many vestiges in Arran, and whose culture we have now to analyse.

In Arran we see the meeting and blending of two wholly different types of custom and culture, and these represent two peoples of quite different physical characters, and wholly

¹ *Scottish Historical Review*, April 1905.

different origin. The drama is enacted during a phase of transition from a distinct Neolithic to the Bronze Age type of culture. The two types we shall name the *Chambered Cairn culture* and the *Short Cist culture*; and as the former is undoubtedly the earlier, we shall develop our subject by first dealing with the Chambered Cairns; we shall then describe the characters of the Short Cist culture, and thereafter proceed to the discussion of the evidences we have for a meeting and blending of the two.

THE CHAMBERED CAIRNS.

The Chambered Cairns of Arran are chiefly distributed over the southern half of the island. It is probable that many examples of this class of monument have disappeared owing to the extension of cultivation. Since the date of Pennant's tour (1772) a number of great cairns which he describes have wholly vanished. This has been due to the quarrying of the cairns for the building of houses and dykes, and for the same reason such cairns as still remain are all more or less imperfect. When these remnants, however, are compared with one another it can be ascertained that a feature wanting in one is present in another, so that it is possible to reconstruct the monument in every detail. Seventeen examples in all exist. Of these, fourteen, which have been excavated, will be fully described; the remaining three will be more briefly noticed in the Inventory of the Monuments at the end of the chapter.

THE CÀRN BÀN.

This great cairn of stones stands about six miles from the sea, at the very head of the Kilmorie Water, high up above the stream, close to the nine-hundred-foot contour



Fig. 1. S. A.)



Fig. 2. (S. A.)

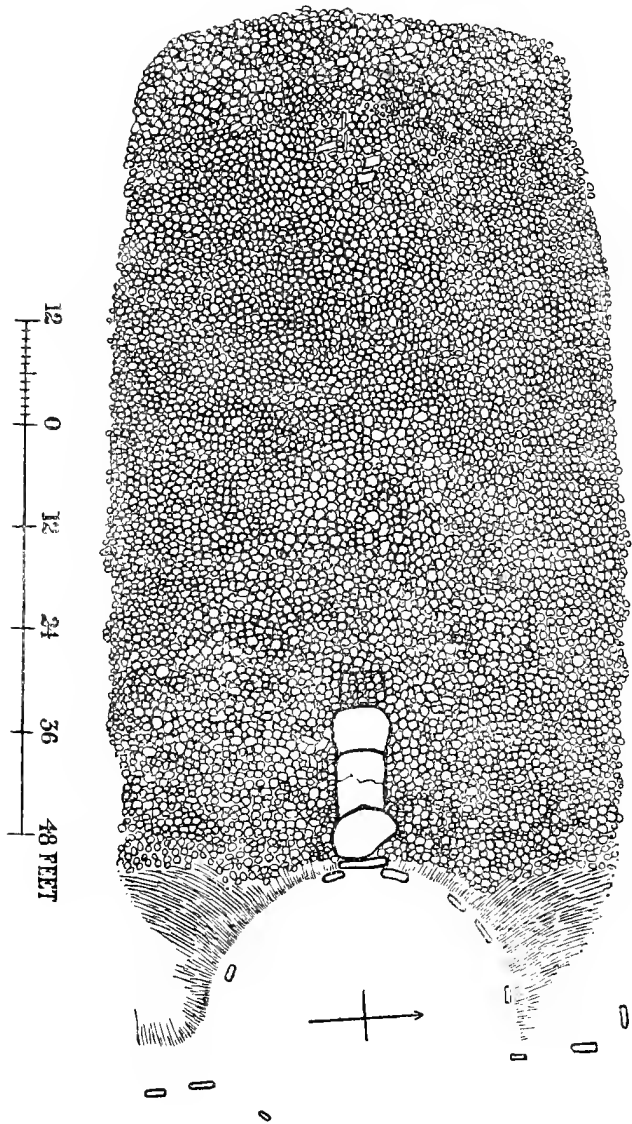
FIG. 1.--View of Càrn Bàn, Kilmorie Water, looking South.

FIG. 2.--View of Portal of Càrn Bàn Chamber, after excavation.

line. It lies far beyond the limits of cultivation in the heart of the hills, and has been little disturbed, so that it retains much of its original character.

The cairn stands on the steeply sloping side of the glen (Plate I. Fig. 1) below the brow of the hill. At its lower end it rises 15 or 17 feet above the slope, but runs out to the ground-level at its upper end. In shape it is roughly rectangular, the sides being straight; the total length is 100 feet and the average breadth 60 feet. The long axis is directed approximately W.N.W. and E.S.E. At the east or upper end, between the top of the cairn and the steeper slope of the hillside, is a nearly flat area of about thirty feet in diameter, of semicircular shape, partially marked off by a series of upright stones (Text-fig. 1). These rise a few inches to two feet above the present ground-level. Other stones extending north and south form two lateral arms, and the cairn reaches up towards them on either side. The outermost stone of the northern arm is placed with its axis in a line with the long axis of the cairn, and it seems likely that it may have been one of a series of stones mapping out the outline of the cairn. To return to the semicircular setting at the upper end of the cairn: the largest stones of the series, which are 2 feet 2 inches and 3 feet 4 inches broad, and 1 foot 8 inches and 1 foot 4 inches thick, respectively, stand in the axial line of the cairn, and the space between them, 3 feet 5 inches across, forms, as will be explained later, a portal into a chamber which was found to occupy the upper end of the cairn.

Immediately behind this pair of stones is a somewhat conical stone on edge, which forms a kind of lintel to the portal. It is 5 feet 9 inches long, 1 foot 10 inches thick, and 2 feet 2 inches deep. Resting against this on its horizontal face, there was, before the cairn was excavated, an irregular block of schist, 5 feet 9 inches long by 5 feet 8 inches broad and 1 foot 2 inches thick. It overlapped a second large flag



TEXT-FIG. 1.—Plan of Carn Bàn, Kilmorie Water.

of soft sandstone, 7 feet 2 inches long by 5 feet 2 inches broad and 8 inches to 1 foot thick, and this in turn overlapped by 2 feet 6 inches a large irregular slab of granite, which measured 6 feet long by 6 feet broad and 1 foot 4 inches thick. These three slabs, thus overlapping one another, were exposed on the surface of the cairn, but from the fact that the cairn is higher below, it is probable that they were at one time covered over, though it is certain that they cannot have been buried to any great depth.

When the small stones were cleared away beyond the granite flag to a depth of 2 feet, a fifth slab of sandstone was laid bare. The roof of the chamber was formed by these various flags, and as this is the only chamber in Arran in which the roof was still *in situ*, the measurements of the stones and their relation to one another have been given in detail. The slabs are of large size, the granite block especially being of great weight. It will further be observed that the flags overlapped each other from the portal inwards. The only way to gain access to the chamber, which was quite filled with earth and stones, was to remove the roof, so that the visitor to the cairn will now find the flags displaced.

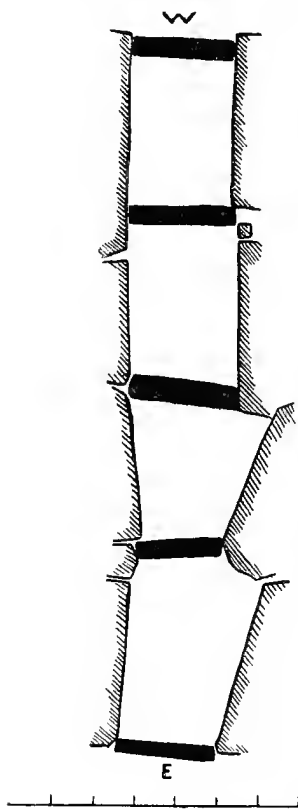
When the chamber was cleared of its contents it was found to measure, from portal to end stone, 18 feet 8 inches; the height from roof to floor was 9 feet, while the breadth was on the average 2 feet 10 inches to 3 feet.

The side walls are built in two sections; the upper section, to the depth of 3 to 4 feet, is constructed with flags and blocks of sandstone of varying size, after the manner of a dry-stone dyke; the lower section is formed of very large irregular flags or blocks of schist set on edge, and placed in pairs opposite one another. At or about the points where these flags abut against one another, transverse slabs are set right across the floor, dividing the trench-like space

into four compartments (Text-fig. 2). The end stone of the chamber is a tall flag set on end, reaching nearly to the roof, but the dividing slabs hardly reach the upper edges of the great flags forming the basal megalithic part of the chamber.

The sectional plans (Text-figs. 3 and 4) show that between the transverse stones and the roof there was clear headroom of 4 feet at the lowest, to 6 feet at the highest point. The highest tier of small flags, laid horizontally, which form the upper built section of the walls, overlapped the lower tiers inwards (Text-fig. 4), and the space left between their mesial edges was only 18 inches.

Fig. 2, Plate 1., represents the portal of entrance after the roof had been removed. The space between the portal stones is 3 feet 5 inches, but owing to the broadening of their bases, the interval is much reduced below the ground-level, and access could only be obtained through the upper part. The entrance is considerably higher than the floor of the chamber, and the first compartment is completed below the level of the portal by a slab set on edge.

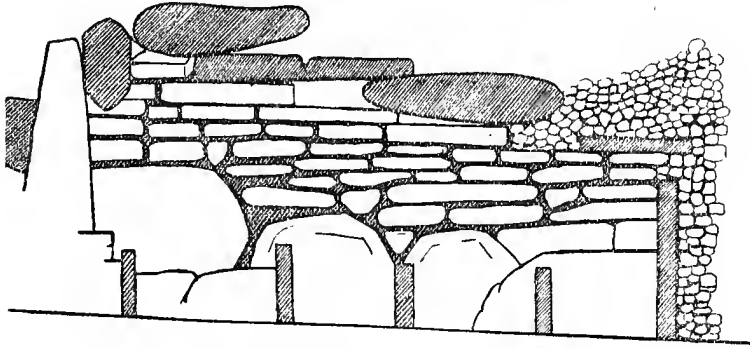


TEXT-FIG. 2.—Ground Plan of Chamber, Càrn Bàn.

The only relics recovered, were one flake of flint and another of Corriegills pitchstone. All traces of interments had disappeared. The drainage from the hill ran through the floor of the chamber, so that the soil was very wet, and any bones must have been long ago dissolved away.

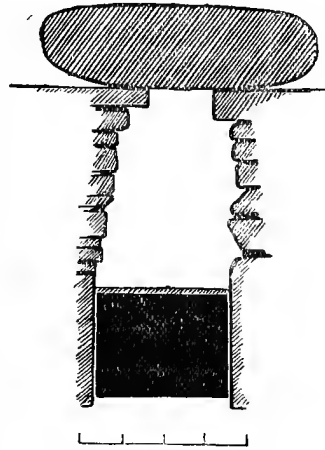
The structural features of the chamber and cairn clearly demonstrate what the stages in their construction must have

been. First, to form the trench-like vault a series of great blocks or flags of stone were placed on edge, roughly parallel



TEXT-FIG. 3.—Sectional Plan of Chamber, Càrn Bàn (longitudinal axis).

with one another. As these were set, transverse slabs were fixed between their ends to serve as struts to resist the inward pressure of the covering cairn; they served also to divide the trench into compartments. The blocks of schist were not, however, high enough to give headroom in the chamber; moreover, they were of very unequal height. Accordingly a superstructure of small flags, laid horizontally, was erected on their upper edges, and the wall was carried up until there was sufficient headroom, and a level surface was obtained for the roofing flags to rest upon. For the better support of these flags, the upper tier of horizontal slabs was made to overlap the lower tiers, and the space to be covered was reduced to a narrow gap.



TEXT-FIG. 4.—Sectional Plan of Chamber, Càrn Bàn, in its transverse axis.

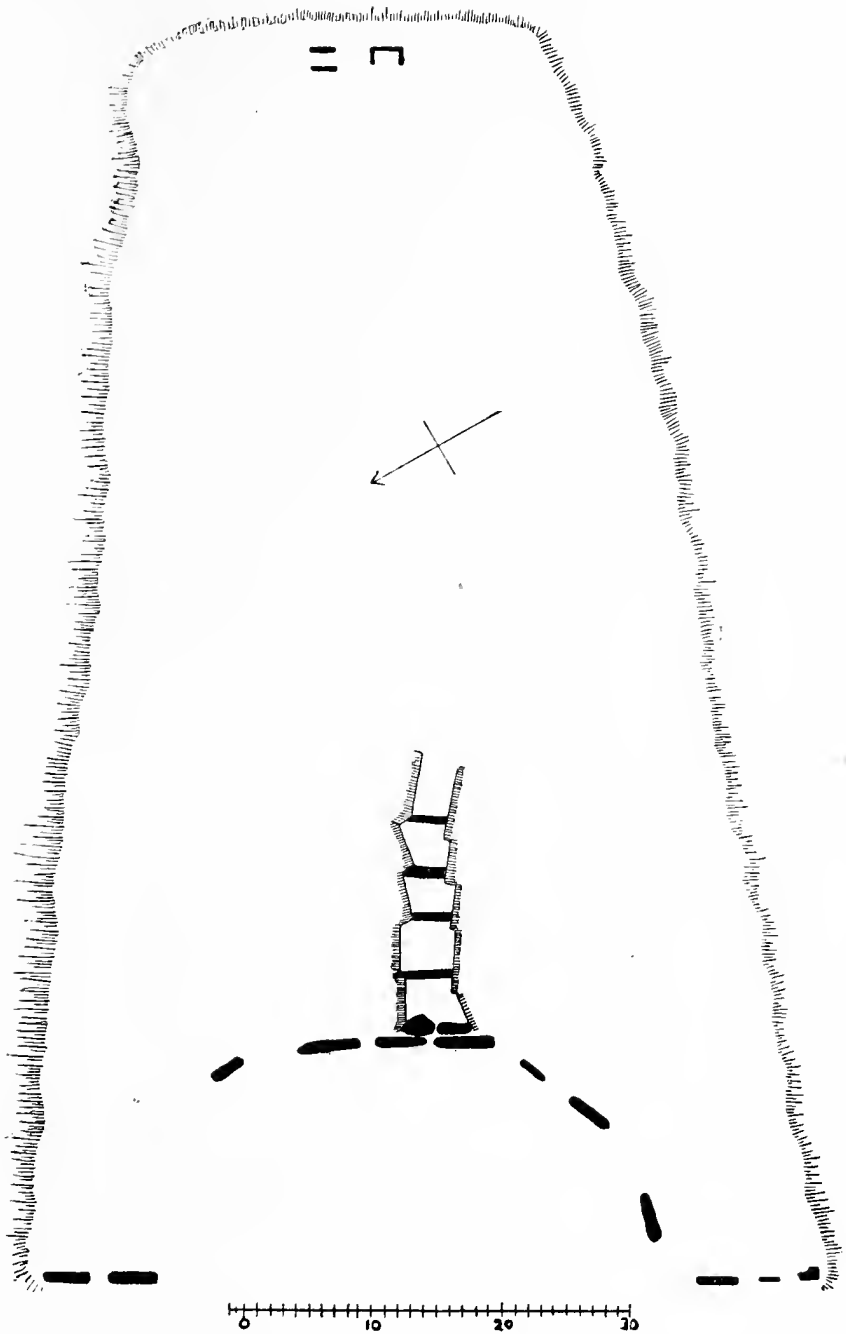
The outer ends of the small slabs were in all probability

supported, as the wall was raised by loose stones heaped up round the chamber. The roofing stones were then placed from within outwards, overlapping one another; portal stones were erected, and a semicircular area in front of the portal was defined by slabs set erect in the ground. The outline of the cairn was marked off by a similar but rectangular setting of flags, and within the setting hundreds of tons of stones were gathered, until the chamber was hidden in the mass of the cairn.

The whole structure has a definite plan, common to a great class of monuments which extend from the Mediterranean to the Orkney Islands. The structural plan is expressive of certain fixed ideas, and though we have no clue to what these ideas were, we cannot but respect the intelligence of the builders, when we consider how limited the means at their disposal must have been, and admire the devotion which raised such elaborate monuments to the memory of their dead.

CAIRN AT EAST BENNAN.

This cairn occupies an elevated ridge which lies across the valley of the Struithe on the farm of East Bennan, about one-eighth of a mile from the sea. The ridge lies W.N.W. and E.S.E., and rises about twenty feet above the burn. It runs out to the level at its western end, but at its eastern end it falls sheer in a rocky face down to the stream. The cairn crowns the ridge. The south side has been extensively quarried, but the north side is less disturbed, and coincides with the edge of the natural eminence. The cairn along this side has the appearance of having been built up, large blocks of stone laid horizontally being seen along nearly the whole length. A few vertical slabs occur on this outer edge, some still standing, others displaced outwards, and it is probable that these represent what was

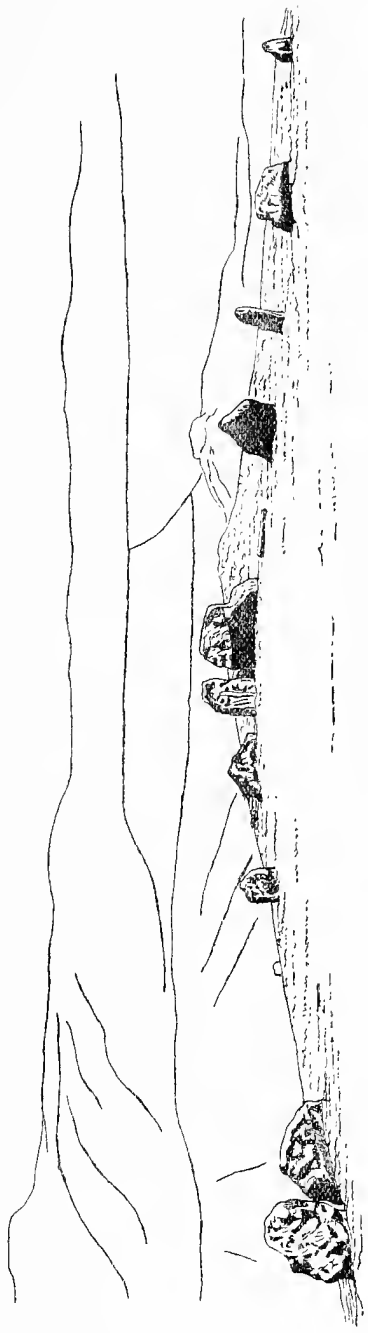


TEXT-FIG. 5.--Plan of East Bannan Cairn.

at one time a continuous series. The loose stones of the cairn have been almost entirely removed, and it is the base only which survives. Numerous large stones which project from the surface suggest that the foundation was formed of larger blocks.

The total length of the cairn is about 100 feet, and the breadth at the western end is 63 feet (Text-fig. 5). As already explained, the natural ridge runs out to the general ground-level at its western end, and here there is a semicircular area marked off by a number of standing stones. The semicircle is 38 feet in diameter, and from its horns a setting of flags is carried out in a straight line on each side to the upper angles of the cairn (Text-figs. 5 and 6). The central stones of the semicircular series form the portal stones of the chamber. The general arrangement is thus exactly similar to that at Càrn Bàn, but here the vertical slabs of the semicircle stand higher above the present surface. The individual slabs are, further, heavier than at Càrn Bàn.

The chamber (Fig. 3, Plate II.) has lost its roof and the upper built section of its walls, the tops of the basal megalithic section being exposed. It is easy to picture to oneself how this fall of the roof and wall must have occurred during the quarrying operations on the cairn. Fig. 3, Plate II., shows the remains of the chamber and the portal stones; now take away roof and building of small flags from the figure representing the longitudinal section of Càrn Bàn chamber (Text-fig. 3, p. 41), and we have exactly the structure seen at the Bennan Cairn. As the cairn was removed by the despoilers of the monument, the upper, loosely built section of the walls, losing the support given by the surrounding stones, would inevitably collapse under the weight of the great roofing slabs and bring them down at the same time. In this cairn all the roofing flags have been removed, but in other instances to be described, they are still seen



TEXT-FIG. 6.—Frontal Semicircle, East Bennan Cairn.

lying in the positions into which they slipped when the supporting building fell in.

The portal of the chamber is a very narrow aperture, of at most 10 inches between the edges of the portal stones. Behind these, and helping to support them, there are two heavy blocks which complete the first compartment of the vault. The end stone has been removed. The length of the chamber, from the portal to the now open end, is 22 feet, and it is divided by four septal slabs into five compartments. The side walls are formed of five pairs of very massive flags of schist, the upper edges of which are very much on the same level. The compartments vary in depth from 3 to 4 feet below the upper edges of the side stones; the first measures in the long axis of the structure 4 feet, the second 4 feet, the third 3 feet, the fourth 3 feet 6 inches, and the fifth 4 feet.

The compartments were filled with earth and stones. On the floor of each was a layer of black earth, with numerous fragments of wood charcoal. A previous tenant of the adjoining farm dug out the chamber many years ago, so that the record is defective. The only relics found, when the vault was cleared out again in April 1909, were a flake of Corriegills pitchstone, and a portion of a round-bottomed, bowl-like vessel of black ware.

CAIRN AT WHITING BAY—THE GIANTS' GRAVES.

The megalithic structure, known popularly as the *Giants' Graves*, is the largest of the denuded structures of this class in Arran. It stands on a ridge 400 feet above the sea, overlooking the bay on the south, in a commanding and romantic situation (Plate II. Fig. 4).

The cairn in which the structure must at one time have been embedded is now in great part removed, the base alone remaining. It rises about two feet above the general level of the flat terrace on which it rests, and is 98 feet in



Fig. 3. (S. A.)



Fig. 4. (S. A.)

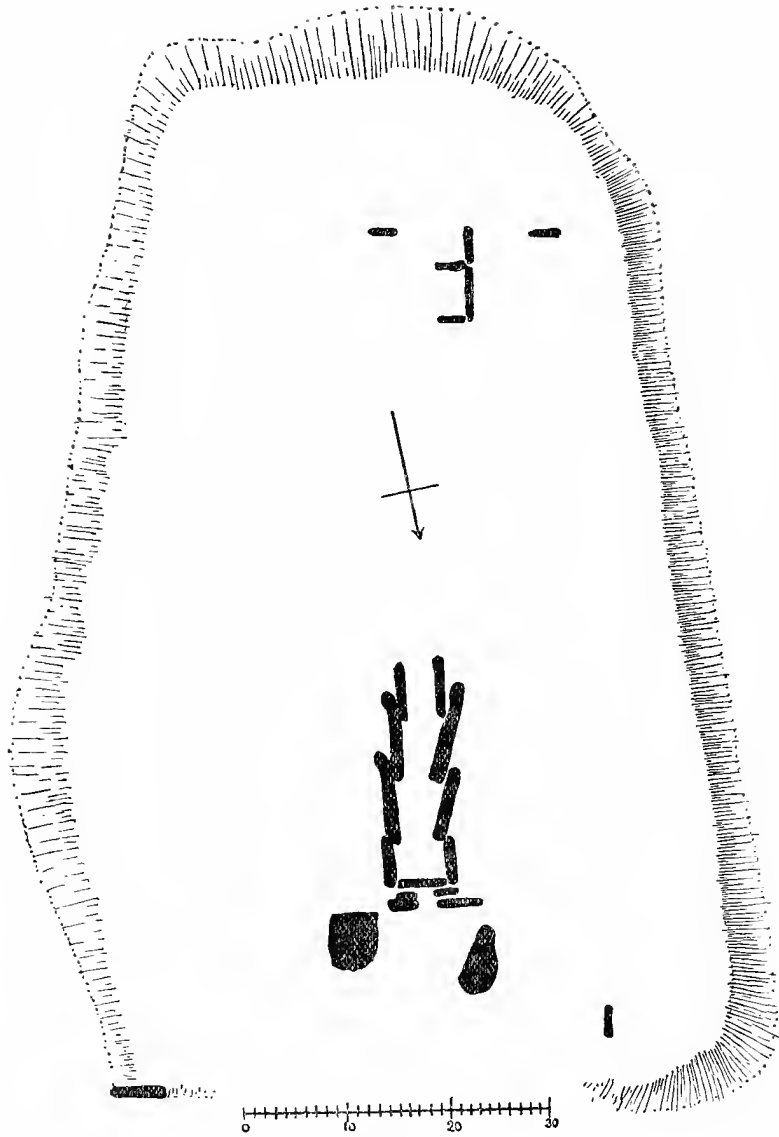
FIG. 3.—Portal Stones and Remains of Chamber, East Bennan Cairn.

FIG. 4.—View of Giants' Graves, Whiting Bay, from the South.

length by 60 feet in breadth. The megalithic structure is at the northern end, in the long axis of the cairn which runs N.N.E. and S.S.W. Close to the northern corners of the cairn there are two standing stones (Text-fig. 7). The eastern stone is 5 feet broad and 1 foot 3 inches thick ; it stands 4 feet above the ground, with its long axis east and west. The western is smaller, 3 feet 6 inches broad by 6 inches thick, and 3 feet above the ground, with its long axis directed north and south. On each side of the north end of the megalithic structure there is a recumbent stone, the one measuring 5 feet by 4 feet 7 inches, and the other 5 feet 7 inches by 3 feet 7 inches. These stones are evidently the survivors of a frontal semicircle, such as seen at Càrn Bàn and the East Bennan Cairn ; they have the same relation to the portal of the megalithic chamber.

The megalithic chamber is 24 feet over all. At the north end it is bounded by two stones which form a narrow portal ; the eastern stone is 6 feet high, 2 feet 6 inches broad, and 1 foot thick ; the western is 4 feet 4 inches broad, and stands 4 feet 9 inches above the ground. The interval between their mesial edges is 18 inches, affording a very narrow entrance to the chamber. Between these stones and the end of the chamber proper two smaller stones are wedged. The portal is 16 feet from a line joining the two stones at the corners of the cairn. This measurement is practically the same as the corresponding measurements at Càrn Bàn and East Bennan Cairn, so that the semicircular bay must have had the same dimensions in all three cairns.

The chamber is open at the south end, and there is now no roof ; but leaning against the western wall is a huge flag of irregular shape, measuring 7 feet in both diameters. There seems little doubt that this must have formed a roofing stone, and it is easy to see how, when the cairn was demolished and the support of the built section of the chamber was thereby removed, the weight of the large roofing flags



TEXT-FIG. 7.—Ground Plan of Cairn known as 'Giants' Graves,' Whiting Bay.

would cause a collapse of the walling, and this stone would naturally slide into the position which it now occupies.

The lateral walls of the chamber are formed of four pairs of very large and irregular blocks of schist set on edge. The great irregularity in the height of the stones is again to be noted (Plate II. Fig. 4); the roofing slabs could have been supported in position only by a building of smaller flags, set horizontally on their upper edges.

The measurements of the several blocks may be given in detail to show the massive character of the stones forming the chamber, which perhaps deserves the term megalithic more than any other of the Arran structures of this class. Beginning at the south end, the first pair lie nearly parallel; the east stone is 6 feet 6 inches broad, 6 inches thick, and 4 feet 2 inches deep; the west is 6 feet 7 inches long, 7 inches thick, and 4 feet 7 inches deep. The space between them is 3 feet 6 inches, narrowing to 3 feet 4 inches. The second pair overlaps the first on their outer sides; the west block is the largest of the series, measuring 9 feet long, 2 feet thick at its base and 10 inches at its apex, and it stands 5 feet 4 inches above the floor; the east member is 7 feet 8 inches long, 9 inches thick, and is 4 feet deep. The ends of these stones are 2 feet 7 inches apart at the north ends, and diverge much from one another. In like manner, the third pair overlaps the second: they measure—the east 9 feet long and 6 feet 2 inches deep, the west 6 feet by 3 feet 4 inches deep. The fourth pair are narrower stones—the east 3 feet 4 inches broad, 1 foot 3 inches thick, and 6 feet 2 inches high; the west is 5 feet broad, 2 feet thick, and 6 feet 3 inches in height.

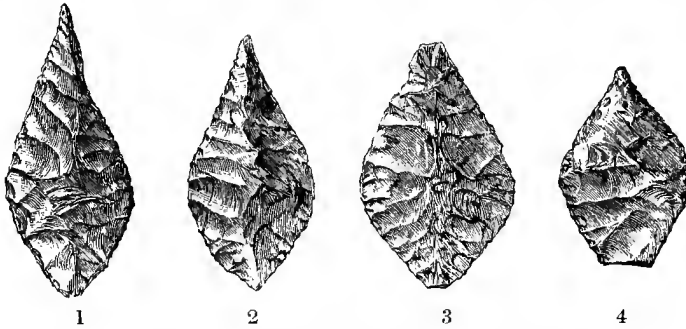
Whether the trench between the lateral stones was ever subdivided into compartments it is now impossible to say. In digging it out only one transverse stone was met with. It was lying inclined into the space between the second pair from the portal, and when levered up it fitted the interval between the ends of the third pair.

The breadth of the chamber varies from 5 feet at its broadest to 2 feet 7 inches at its narrowest part. At the north end it is completed by a slab 4 feet broad,

standing 2 feet 2 inches above the floor, and about 4 feet, therefore, below the tops of the side stones.

The floor of the chamber was covered, when excavated in 1902, by a layer of black earth containing charcoal, and at the south end large deposits of burnt bone were met with. The bones were broken into very small fragments, but they had all the characters of human bones burnt by cremation. In the riddlings of the soil four arrowheads and three large flint knives or scrapers were recovered, as well as fragments of pottery.

The arrowheads are represented in Text-fig. 8. No. 1 is of light brown flint, is leaf-shaped, is $1\frac{9}{16}$ inch long, has a



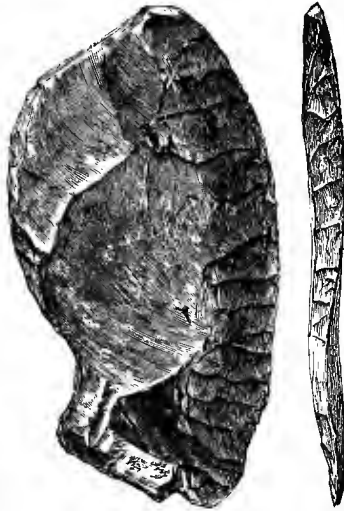
TEXT-FIG. 8.—Group of leaf-shaped Arrowheads from chamber, 'Giants' Graves.' (S. A.)

very long tapering point, and is finely worked and thin. No. 2, of the same colour and general character, is $1\frac{5}{16}$ inch long. No. 3 is more lozenge-shaped, but is also thin and finely worked, and of the same light brown flint. No. 4 is of whitish clear flint; it is a broadish leaf-shape, is $1\frac{1}{16}$ inch long, and is less finely worked. The flint knife represented in Text-fig. 9 is $3\frac{7}{8}$ inches long by $1\frac{3}{8}$ inch broad, is made of light brown flint, and is slightly concave, being worked all over the convex surface. That represented in Text-fig. 10, of the same coloured flint, is $4\frac{1}{16}$ inches long and $2\frac{3}{16}$ inches broad; it is finely curved along both edges, is flat, and with

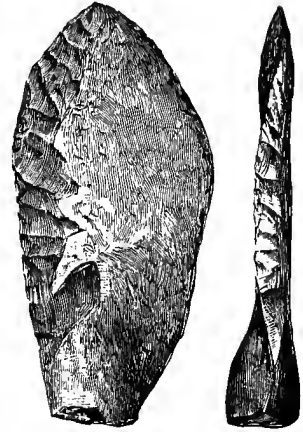
the longer edge more completely worked. The third specimen (Text-fig. 11) is also of light brown flint, is $3\frac{3}{8}$ inches long



TEXT-FIG. 9.—Flint Knife $3\frac{7}{8}$ inches long, from chamber, 'Giants' Graves.' (S. A.)



TEXT-FIG. 10.—Flint Knife $4\frac{1}{8}$ inches long, from chamber, 'Giants' Graves.' (S. A.)



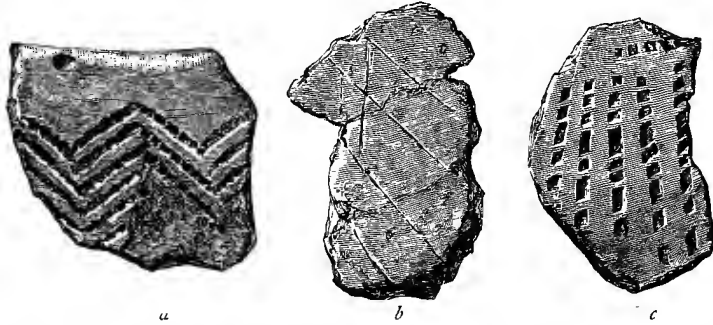
TEXT-FIG. 11.—Flint Knife $3\frac{3}{8}$ inches long, from chamber, 'Giants' Graves.' (S. A.)

by $1\frac{1}{8}$ inch broad, and shaped to a fine curve along one edge, but the greater part of the surface has the natural 'skin' left untouched.

It is unfortunate that the fragments of the pottery are so small in size and few in number. One fragment, without decorative pattern, and made of dark-coloured ware, shows the flat rim characteristic of some Stone Age pottery, such as figured on Plates XII. and XIII. A second fragment of the rim of a vessel shows a chevrony pattern of impressed lines (Text-fig. 12, *a*). Another portion of the side of a vessel has a pattern of parallel lines drawn diagonally across each other over the surface (Text-fig. 12, *b*), while a fourth fragment shows a design of lines of squarish impressions placed parallel to one another, as if made by the teeth of a comb-

like instrument (Text-fig. 12, *c*). It is impossible to say what the shape of these vessels may have been. No part of a rounded under surface was recovered, and one fragment was undoubtedly a portion of a vessel with a flat bottom.

Thirty-three feet from the south end of the megalithic structure, and 23 feet from the south end of the cairn, there is a cist (Text-fig. 7) lying open and rifled of its contents. It measures 5 feet long by 3 feet broad, the long axis lying



TEXT-FIG. 12 (*a*, actual size; *b*, scale $\frac{2}{3}$; *c*, actual size).—Fragments of Pottery from chamber, 'Giants' Graves.' (S. A.)

north and south; the east stone is absent, and the north stone has this peculiarity that it stands 2 feet 6 inches higher than its companions, like the end stone of a chamber. The depth of the cist, which contained only loose earth, is 2 feet 6 inches. Beyond this cist, and in a line with its west wall, is a stone 2 feet $4\frac{1}{2}$ inches long, and standing 1 foot 9 inches high. A few feet east of this stone there is a small slab on edge, and there is another to the west, both set with their long axes east and west. Another large flag lies on its face to the south of the cist. This cist has not the characters of a short cist, and it is probably to be regarded as the remains of a secondary chamber, such as will be described at Dùnan Beag Cairn, near Lamlash. The upright stones to east and west of the cist may be the remnants of a frontal setting.

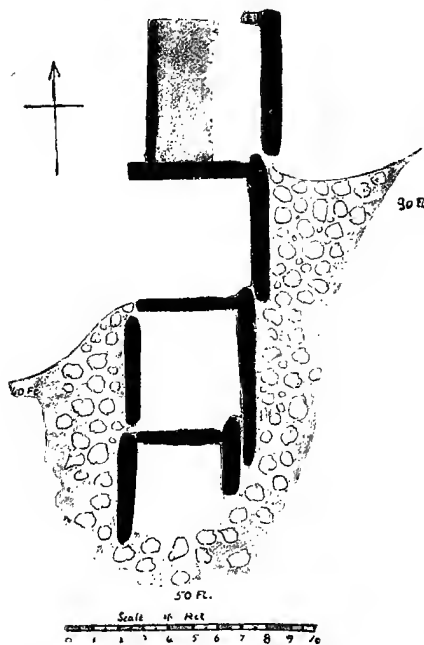
There is a smaller cairn 60 feet south of the large one. It measures 40 feet by 32, and contains a small ruined and rifled cist or chamber, formed of several small flags placed serially. It is 8 feet long by 2 broad, the long axis running east and west. At the western end there is an upright stone, standing 4 feet above the ground. The east end is open. The narrow trench is not subdivided by septal stones, and contained only soil and stones, with no signs of charcoal or bones; no relics were observed.

TORLIN CAIRN.

This cairn is situated at the mouth of the Kilmorie Water below Lag, in a field adjoining the shore on the east bank of the stream. In its present state (Plate III. Fig. 5) it is elevated about five feet above the general level of the field, but shows only a fraction of its former extent. It ends on the north in a steepish bank of irregular contour, which is evidently the limit of a former excavation. The work had apparently been brought to a close, by the laying bare of one compartment of a chamber, which now, in a ruined state, stands out free of the excavated mound. From the line of quarrying the mound stretches 70 feet to the south, 30 feet to the east, and 40 feet to the west. To what distance on the north the mound extended it is impossible now to say; but from the appearance of the ground it may possibly have reached even so far as 60 feet. In any event, it was probably oblong in shape, its length considerably exceeding its breadth.

The cairn was excavated in July 1900. The chamber was roofless, and at that date the side stones were in great part below the surface. They were left exposed after the excavation, so as to show the structure of the monument. The vault is 22 feet in length, and is divided into four compart-

ments by three transverse stones (Text-fig. 13). It is built of rough unhewn slabs of soft sandstone, such as could be obtained from the rocks on the adjoining shore. Each compartment



TEXT-FIG. 13.—Plan of Chamber in Torlin Cairn. (S. A.)

is approximately 5 feet square, and the side stones exceed the septal slabs in height by 1 to 2 feet (Plate III. Fig. 6). The long axis of the chamber lies due N. and S. (magnetic). There is now no sign of a frontal semicircle or of a portal, and the end stone of the chamber is absent. Plate III. Fig. 6 shows the manner in which the basal megalithic portion of these chambers was constructed on the principle of mutual support. The lateral stones, set in pairs, are supported against lateral pressure by the transverse stones wedged between them. The first compartment to be formed was probably, as

already explained, the innermost one, and the end stone served to hold up the first pair at one end, while the first septal stone supported them at the other end. The side stones of the second compartment overlapped the first pair on their outer sides, and were thus kept in position, while the second septal flag supported their outer ends. The third pair overlapped the second pair and had also its transverse stone, and so on until the number of compartments was complete. In this instance the west stone of the third compartment (Plate III. Fig. 6) falls short, and, inclining



Fig. 5. (S. A.)



Fig. 6. (S. A.)

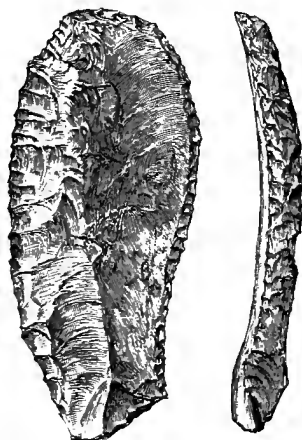
FIG. 5.—View of Torlin Cairn from the N.W.

FIG. 6.—View of Torlin Chamber from the South, after excavation.

inwards, demonstrates the meaning of the structural plan.

Various accounts are extant of bones having been found in this chamber. All the compartments save the innermost had been rifled at one time or another. In this, however, the bones of at least six persons were recovered. They lay scattered in great confusion, but mainly in the corners and along the sides. They were embedded in a black soil, compressed into almost stony hardness. The bones represented, as just stated, six adults, but there were bones also of a child and an infant.

Besides the human bones there were some animal bones. The special feature about them was the large proportion in



TEXT-FIG. 14.—Flint Scraper with knife-like edges, from chamber, Torlin Cairn. (Scale, $\frac{3}{8}$.) (S. A.)



TEXT-FIG. 15.—Portion of Urn from chamber, Torlin. (Scale, $\frac{1}{3}$.) (S. A.)

all stages of immaturity. The few adult bones were those of the ox, the pig, the fox, the dog, and the otter. The immature bones were all ungulate, probably those of pig, and lamb or kid.

On the floor of the chamber a flint implement (Text-fig. 14) was found. It is an elongated scraper with knife-like

edges, measuring $3\frac{3}{8}$ inches long by $1\frac{9}{16}$ inch broad. It is carefully worked all round except at the narrow end, which shows the bulb of percussion. There was also picked up a fragment of pottery of dark-coloured paste, coarse and rough in make. It had belonged to a round-bottomed vessel, and is without decoration by any impressed pattern, but has two projections or ears placed on the neck (Text-fig. 15). Among the earth, a very small amount of wood charcoal was recovered.

CAIRN AT CLACHAIG—LIMEKILN CAIRN.

This cairn has been raised on the old sea-beach terrace, about half a mile west of Kilmorie Water, on the farm of Clachaig, close to a disused limekiln.

The cairn (Plate iv. Fig. 7) is from 8 feet to 10 feet high, and of oval shape. Its long axis lies N.N.W. and S.S.E. The top of the mound is approximately flat, but it is highest at the south corner. The south end has evidently been quarried, as it ends in a steepish bank of crescentic contour (Text-figs. 16 and 17). From the north end to the quarried edge the measurement is 39 feet, but if the tape be carried down the steep bank and the gently sloping base, the length of the mound over all extends to approximately 60 feet. The breadth of the broad top is 26 feet; the western slope measures 23 feet to the base; the eastern measures 11 feet, and is very much steeper, having been interfered with here to make room for a cart track.

The cairn was excavated in July 1900 by making a trench through the long axis of the mound. At the north end a small chamber of two compartments was exposed, and at the south end a short cist was laid bare.

The short cist is, of course, a secondary interment, belonging, as we shall see, to a later epoch than the chambered



Fig. 7. (S. A.)



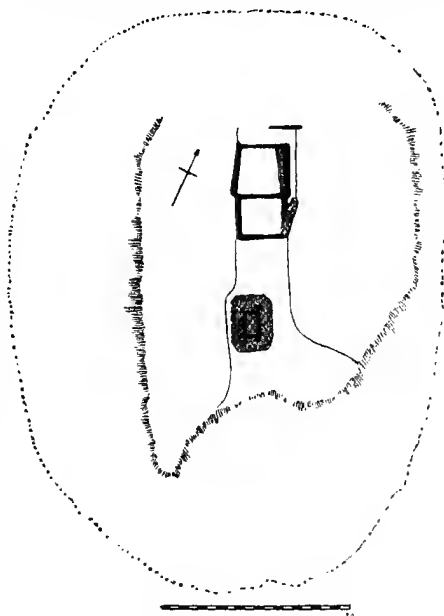
Fig. 8. (S. A.)

FIG. 7.—View of Clachaig (Limekiln) Cairn from the South.

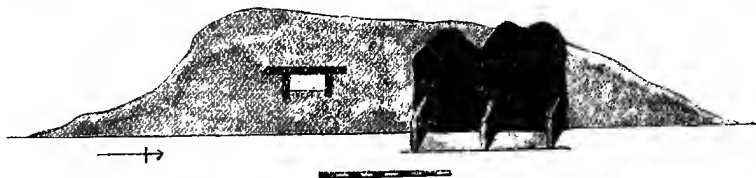
FIG. 8.—View of Slidderie Chamber from the South, after excavation.

cairns, and we shall defer the description of it in detail to a subsequent section.

The primary megalithic chamber is probably only a portion of what was at first a larger structure. There are now no traces of a frontal semicircle or of a portal, and the roof has been removed. It is possible, however, that the vault represents a late phase of chamber building, and that these accessory structures may never have been present, for we shall see in the sequel how the original plan of the complete monument was departed from at the close of the Chambered Cairn Period in Arran. The construction of the chamber further differs from that of the chambers already described, in respect that the walls are formed of sandstone slabs which, on one side, extend the whole height of the wall (Text-fig. 17). These occupy the west wall, and stand



TEXT-FIG. 16.—Plan of Clachaig (Limekiln) Cairn. (S. A.)



TEXT-FIG. 17.—Section, Clachaig (Limekiln) Cairn. (S. A.)

8 feet above the gravelly subsoil in which they are embedded. The first is 6 feet broad, and overlaps the second on its

outer side; this is a similar block, 5 feet broad, but not quite so high as the first. On the east the wall is constructed of two pairs of stones, each 4 feet deep, placed opposite the two west slabs. The upper slab of each pair is set vertically on the upper edge of the lower slab. There are three transverse stones which divide the deeper part of the trench into two compartments; the first compartment measures 5 feet by 4 feet 6 inches, the second 4 feet 4 inches by 4 feet 6 inches. Both are 4 feet deep from the upper edges of the transverse stones to the gravelly subsoil on which these rested.

In the trench to the south of the chamber were a number of slabs of sandstone irregularly placed, and having no structural arrangement, while several feet farther on, at a depth of 4 feet, the capstone of the short cist already mentioned was laid bare. The impression conveyed by the disposal of the slabs between the chamber and the cist was that possibly a part of the megalithic structure had been broken down by those who placed the cist in the cairn.

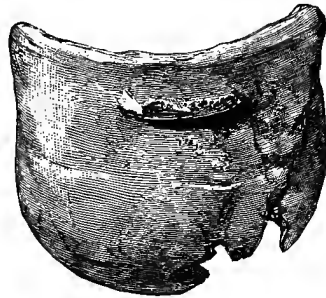
The chamber was filled with soil, in which were numerous flags of sandstone. These occurred near the surface, but were met with even close to the bottom of the compartments. The soil in the deeper part of the vault was remarkably dry; it was black in colour, due partly to admixture of particles of charcoal, and was compressed into a firm mould. Nothing was discovered above the level of the transverse stones, but in the compartments themselves no fewer than fourteen skeletons were uncovered. These were placed in the corners at different levels, and, owing to the dryness of the soil, the bones, though many had been broken by the falling in of the roof, were very well preserved. The skulls lay invariably in the corners, and the bones of the extremities along the walls of the cists, but beyond this no arrangement could be made out;¹ in no instance could all the bones of the

¹ It may perhaps be here noted that, in digging out these chambers, the best method of procedure was found to be to clear first a trench-like space in the centre of the

skeleton be accounted for. In the north compartment, two skulls in fragments were found in each corner at different levels, along with other bones of the skeleton; in the south compartment, two interments were found placed one above the other in two of the corners, and a single one in each of the other corners. Thus altogether there were the remains of fourteen individuals interred in the two compartments and all the bones were unburnt. Some of the skeletons were those of men, others of women; two were those of young children.

Among the human bones there were also a number of animal bones, chiefly of the ox, sheep, and pig. These included many specimens from young animals.

In the north compartment were found the fragments of a rough black clay vessel (Text-fig. 18) without decoration, and with a projection or ear on the neck. The lip is irregular and slightly everted.

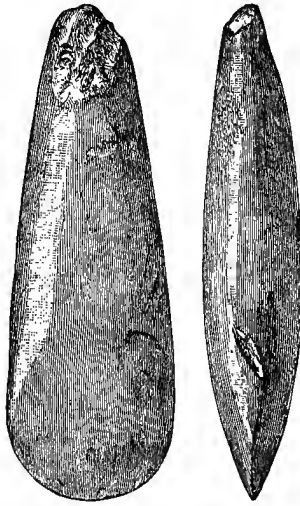


TEXT-FIG. 18.—Urn from N. compartment, Clachaig (Limekiln) Cairn. (Scale, $\frac{1}{3}$.) (S. A.)

In the east corner the polished stone axe represented in Text-fig. 19 was found. It is made of greenstone, and is rather roughly polished—the grain running in several directions. It measures $8\frac{1}{8}$ inches in length by $2\frac{1}{16}$ inches in breadth at its cutting edge, which is semicircular in shape. The butt end is rather sharply tapered, and a chip has been broken off here. The body of the weapon is also chipped in several places.

In the south compartment, close to the north-east corner, compartments for a certain depth, then to attack the soil in the corners and along the sides very carefully with a trowel until a uniform level was reached, and thereafter to repeat the process. The soil should be eased rather than dug into, and when a fragile object is met with, for instance a skull or an urn, the soil should be removed all round it with a brush if loose and dry, or with a pointed instrument if too firm to be brushed, before any attempt is made to lift it from its bed.

lay the vessel of pottery figured in Text-fig. 20. It was placed mouth downwards, and filled with the dry black



TEXT-FIG. 19.—Stone Axe from N. compartment, Clachaig (Limekiln) Cairn. (S. A.)

mould in which it was embedded. By good fortune no stone had fallen here, and it was recovered entire. It is a globular vessel made of dark-coloured paste, with a slightly reddish tinge, thin-walled and delicately fashioned. It stands $3\frac{1}{2}$ inches high, is $3\frac{7}{8}$ inches in diameter at the mouth, which is bounded by a shallow vertical rim. The upper surface slopes gently to join at a sharp angle the rounded under aspect. The sloping upper surface is ornamented by groups of vertical and horizontal lines alternating with one another, impressed in the soft clay by a fine toothed instrument. A double row of dots runs round the

shoulder, and the inner aspect of the vertical rim is ornamented in a similar fashion. The upper part of the rounded bottom is decorated by three rows of dashes horizontally arranged, and interrupted by groups of short vertical lines like those on the upper aspect.

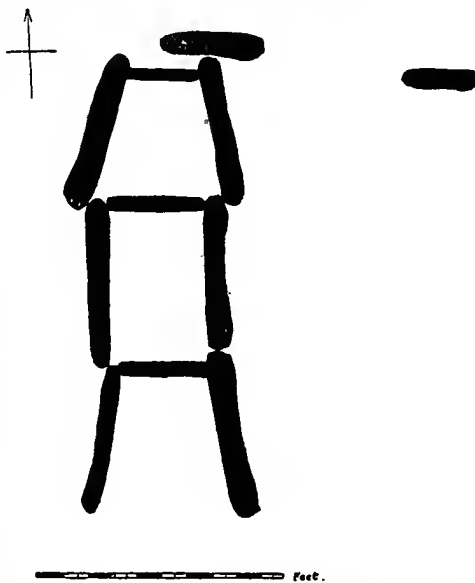


The anatomical characters of the skeletons will be described in a succeeding section.

TEXT-FIG. 20.—Urn from S. compartment, Clachaig (Limekiln) Cairn. (Scale, $\frac{1}{3}$.) (S.A.)

SLIDDERIE CHAMBER.

This structure stands on the right bank of the Slidderie Water, three-quarters of a mile above the bridge carrying the coast road over the stream. It is placed high up on the steep ground, which slopes to the bed of the river. There is no cairn covering the chamber, but at the south end is a heap of stones 16 feet across, which may be the remains of a cairn. The chamber was examined and excavated in July 1901. Before excavation, all that could be seen were three pairs of irregular slabs of a hard sandstone, bounding a trench or chamber 19 feet over all, and running due magnetic N. and S. A large block at the north end, 4 feet broad and 13 inches thick, stands 3 feet 3 inches above the ground. Eight feet to the east is another stone on end, 3 feet broad, and 3 feet above the surface. The first has clearly been one of the portal stones; the second is probably a survivor of the frontal semicircular setting.



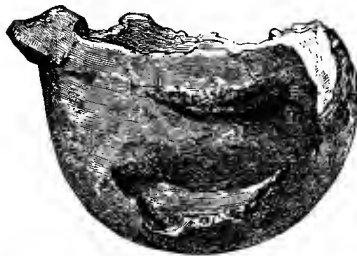
TEXT-FIG. 21.—Plan of Slidderie Chamber. (S. A.)

The chamber is divided by two septal slabs into three compartments (Plate iv. Fig. 8); a cross slab closes the first compartment at the portal end, but the south compartment is open, owing to the removal of the end stone. The cross

stones are 2 feet 6 inches below the tops of the side stones. These are very heavy slabs, the first pair measuring 5 feet 10 inches and 5 feet 8 inches, the second pair 6 feet and 7 feet, the third pair 5 feet and 6 feet 3 inches, respectively. The compartments were filled with stones, small flags and black earth, and were 2 feet 6 inches to 3 feet deep to the level of the red-clay bottom.

The earth was very damp, and only a fragment of an unburnt thigh-bone was found, about half-way down in the north chamber. Near the bottom of all the compartments there was a layer of black matter mixed with a considerable amount of charcoal. One small piece of slag was recovered, but no stone was observed which had certainly been exposed to fire. Nor did the clay bottom appear baked. A stone was preserved with the black matter adhering to it, and when dried and examined under the microscope, this proved to be a mixture of earthy particles and minute fragments of charcoal.

In the north compartment, near the centre, a very rude thick-walled, undecorated urn of black paste was found.



TEXT-FIG. 22.—Urn from N. compartment, Slidderie Chamber. (Scale, $\frac{3}{8}$.)
(S. A.)

The soil round it was damp and adherent, and unfortunately the neck was broken by the spade; but the rounded bottom and a section of the neck were saved. When the fragments were put together (Text-fig. 22) the urn was found to stand 4 inches in height; the mouth is 5 inches in diameter. Round the upper part of the vessel there is a slight shoulder, which is raised at intervals into wide projections or handles. The neck above the shoulder falls inwards a little to the brim. In the soil, close to the urn, a small leaf-shaped arrowhead, $1\frac{1}{4}$ inch in length by $\frac{3}{4}$ inch in

breadth, was picked up (Text-fig. 23). Nothing was found in the middle compartment, but in the south division the knife-like implement of flint shown in Text-fig. 24 was found in the black layer at the bottom of the chamber. It measures



TEXT-FIG. 23.—Arrow-head from Slidderie Chamber. (S. A.)



TEXT-FIG. 24.—Knife or Side-scraper of flint from S. compartment, Slidderie Chamber. (Scale, $\frac{3}{8}$.) (S. A.)

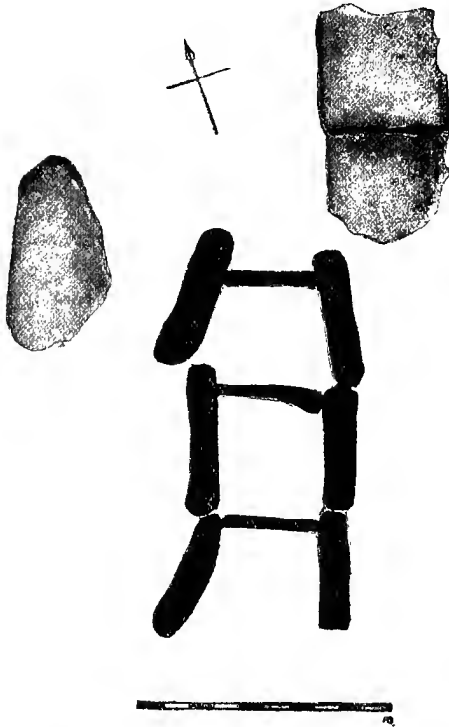
$3\frac{3}{8}$ inches long by $1\frac{5}{8}$ inch broad, is flat on one side, convex on the other. It is worked only on the convex side, to a curved edge which is fairly sharp and slightly serrated. Not a fragment of burnt bone could be found, and no animal bones were seen.

TORMORE CHAMBER, No. 1—SHISKEN.

This megalithic structure stands at the south end of Machrie Moor, on the farm of Tormore, close to a wire fence separating that farm from Torbeg. It rises, a prominent object, out of the heather of the moor, close to the road leading to the peat-moss, and some hundreds of yards below the road from Shisken to Machrie.

There is no trace whatever of any mound or cairn. The structure stands denuded (Plate v. Figs. 9 and 10). The long axis of the chamber bears N.E. and S.W., and is subdivided by three transverse slabs into three compartments, the south being open, as at Torlin and Slidderie.

The side walls are formed of three blocks on each side, of very varying proportions, being massive slabs of a hard freestone. The north compartment measures 3 feet 7 inches by 4 feet 2 inches; the middle, 5 feet by 3 feet 8 inches; the south, 4 feet 8 inches by 3 feet 8 inches, narrowing to 2 feet 6 inches.



TEXT-FIG. 25.—Plan, Tormore Cists. (S. A.)

The northern compartment is bounded on its west side by a pointed stone, to the left in Fig. 9, Plate v., 4 feet 9 inches broad and 2 feet thick, standing 5 feet 6 inches above the ground; but allowing 3 feet for the depth of the chamber, it rises 8 feet 6 inches from its bed in the subsoil. The east stone is a foot lower, is 5 feet 4 inches broad, and 1 foot 4 inches thick. These figures will indicate the massive character of the blocks forming this, the exposed basal megalithic portion of a typical chamber. The other stones are of corresponding weight, and Fig. 9, Plate v.,

shows the great inequality of the upper edge of the megalithic section of the chamber wall. Adjoining the structure, there lie prone on the ground three large flat slabs of the same stone. One, apart on the west side, measures 7 feet 3 inches by 3 feet 9 inches; its upper surface is flat, but its under aspect is bevelled away into a broad ridge on which the slab rests. I mention this detail to show that if this



Fig. 9. (S. A.)

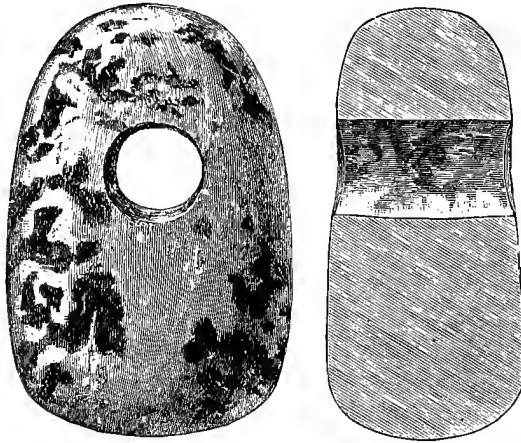


Fig. 10. (S. A.)

Views of Tormore Chamber (Fig. 9) from the West and (Fig. 10) from the North.

stone was a roofing flag, it now lies on what must have been its upper aspect. It now lies much in the position it would naturally assume when the roof of the chamber fell in, and the upper-built section of the walls collapsed. Two large blocks lie close together to the north end of the structure. These may represent another roof-flag broken and displaced, or possibly a fallen portal stone.

The compartments, when cleared out, measured in depth about 3 feet down to the subsoil in which the stones were embedded. They were filled with dark-



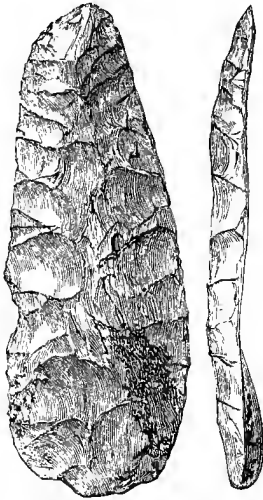
TEXT-FIG. 26.—Stone Hammer from N. compartment, Tormore. (Scale, $\frac{3}{8}$.) (S. A.)

coloured earth, containing many stones, some of considerable size. On riddling the soil, a few minute fragments of bone were recovered, which, I believe, had not been burnt; but no other bone, burnt or unburnt, was found, and there were no animal remains. The bottom of each compartment, as at the other sites, was covered by a layer of black soil, containing many pieces of wood charcoal.

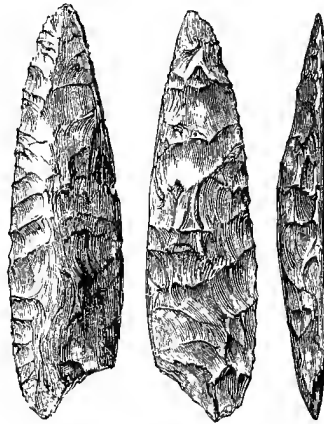
Relics.—A polished and perforated stone hammer of hornblendic gabbro¹ (Text-fig. 26) was found in the north

¹ This rock is to be found on the Ayrshire coast, opposite Arran.

compartment. It measures $3\frac{3}{8}$ inches long by $2\frac{1}{4}$ inches at its broad end, and is $1\frac{3}{8}$ inch thick. The perforation is $\frac{1}{16}$ inch in diameter, and is somewhat uneven, as if the hole had been drilled from both sides, and it differs from the usual type of perforation in being of nearly the same diameter throughout—indeed, it widens rather than narrows to the centre. In the same compartment three flint implements were recovered. The first (Text-fig. 27) is an elongated knife-like implement of brown flint, measuring $2\frac{5}{8}$ inches by $\frac{1}{16}$ inch.



TEXT-FIG. 27.—Knife of brown Flint from N. compartment, Tormore. (Scale, $\frac{1}{4}$.) (S. A.)



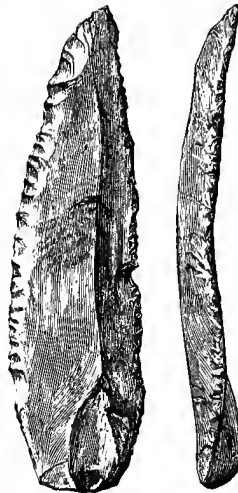
TEXT-FIG. 28.—Knife-like implement of blackish Flint from N. compartment, Tormore. Front, back, and edge views. (Scale, $\frac{1}{4}$.) (S. A.)

Its edge is worked on both sides, and the convex surface is chipped all over. The second (Text-fig. 28) is also an elongated knife-like tool, worked all round to a good edge, and tapering to a sharp point. It differs from the last in being worked on the flat surface as well as the convex. It is $2\frac{3}{16}$ inches long and $\frac{9}{16}$ inch broad. The third is a flake, triangular in shape and quite flat. Its base is unworked;

and of its two edges, one is nearly straight, the other convex and chipped to the level of a projection, which stands out from one side of the base, and is not worked. Besides the three implements, six flakes or portions of implements, showing some working of the edges, were recovered in the sieve, and two flakes of pitchstone, such as is found at Corriegills.

In the south compartment the only relic found was a knife of grey opaque cherty flint, with both edges chipped but with no working on the surfaces (Text-fig. 29).

Fragments of pottery were recovered from the north compartment. They were of the same dark-coloured ware as the urns found at Clachaig, Torlin, and Slidderie cairns. On one fragment only was there any ornament, in the form of some straight lines and dots scratched on the clay.



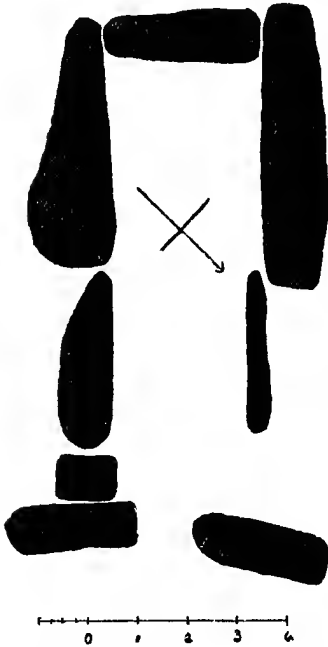
TEXT-FIG. 29.— Knife of grey cherty Flint from S. compartment, Tormore. (Scale, $\frac{1}{2}$.) (S. A.)

TORMORE CHAMBER, No. 2.

At the distance of about three-quarters of a mile almost straight north of the last described chamber there is another but smaller one, on Machrie Moor. It is situated a few hundred yards south-west of the Moss Farm and the great group of circles. There is now no trace of the cairn associated with the chamber, nor of any semicircular setting of vertical slabs opposite the portal. The roof has been removed, and the side stones are embedded in the layer of peat which now covers the subsoil. The chamber has not been noted on the Ordnance maps, and was not observed

until April 1909. It had been cleared out completely by some previous unauthorised diggers.

The chamber provides an example of a short unsegmented vault with a distinct portal of entrance, which is guarded by two stones placed erect (Plate vi. Fig. 12). The left measures



TEXT-FIG. 30.—Plan of Tormore Chamber, No. 2. (S. A.)

1 foot 8 inches broad, 10 inches thick, and stands 3 feet 6 inches after the floor of the chamber; the right is 2 feet 4 inches broad, 10 inches thick, and 3 feet high. The space between the mesial edges of the two stones is 1 foot 3 inches; the portal, unlike that in the cairns previously described, is on the same level as the floor of the chamber.

The vault itself (Text-fig. 30) measures 9 feet 10 inches in its long axis; it lies in a line from N.E. to S.W., the portal being to the north-east. The side walls are constructed of rather lighter slabs than at the other sites. Thus the north wall is formed of two stones, one measuring 5 feet 5 inches long, 1 foot thick, and 3 feet 7 inches deep; the other, 3 feet long, 6 inches thick, and 2 feet 9 inches deep. The south wall is formed of three stones: the first measures 4 feet 6 inches long, 1 foot 3 inches thick, and 3 feet 4 inches deep; the second, in the middle, measures 3 feet 11 inches long, 1 foot thick at its maximum, and 3 feet 6 inches deep; the third, next the portal, is a cubical block of 10 inches diameter, with a depth of 3 feet. The gap in the north wall was probably filled by a similar stone, or by a building of small flags. The end stone stands 3 feet 6 inches above the floor



Fig. 11. (S. A.)



Fig. 12. (S. A.)

FIG. 11.—View of Moinechoill Cairn from the South.

FIG. 12.—View of Tormore Chamber No. 2, after excavation.

of the chamber, is 3 feet broad and 1 foot thick. There are no septal slabs dividing the chamber into compartments, but it is more than possible that there was originally one across the middle of the trench.

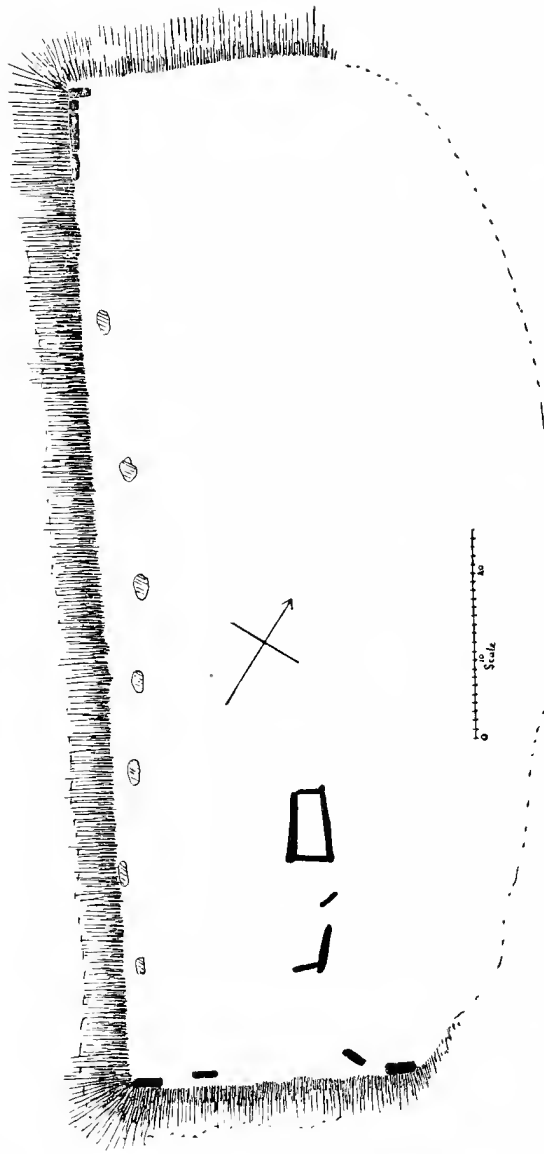
The dimensions given above indicate that we have here to do with a much smaller structure than seen at the Càrn Bàn, East Bennan Cairn, or the Giants' Graves, but it is none the less a complete chamber, being closed by an end stone on the same level as the side stones, and provided with an open and guarded portal. Unfortunately no relics were discovered which could throw light on the difference between this chamber and that of a typical monument. It may possibly represent a phase of degeneration, other examples of which we shall cite in the sequel.

MOINECHOILL CAIRN.

This cairn stands at the mouth of Gleann an t-Suidhe, near Moinechoill Farm. It has been largely removed in the reclaiming of the land round it, and now only one side remains (Plate VI. Fig. 11). It measures 100 feet over all, with its long axis placed roughly east and west. The southern edge is straight, and stands about three feet above the general level of the field; the north edge has been encroached on, and runs out in irregular fashion on to the ground-level. The broadest part is now about 43 feet. The cairn was examined and excavated in July 1901.

The special feature of the cairn which attracts attention is the arrangement at the N.E. and N.W. corners of a setting of stones as if to mark out the boundaries of the cairn (Text-fig. 31). The corner stones are slab-like blocks, set rectangularly. The eastern limit of the cairn is marked by a line of similar slabs, but no such line now marks the western end.

There is no doubt that the smaller flags, shown in solid black in the plan, represent the remains of a setting of flags



TEXT-FIG. 31.—Sketch Ground Plan of Cairn and Cists, Moinechoill. (S. A.)

marking the outline of the cairn, while the obliquely placed stone at the eastern end may possibly be part of a frontal semicircle.

Eighty-seven feet to the north of the cairn is a large standing stone, 8 feet high, 3 feet 5 inches broad, and 1 foot 8 inches thick. If we suppose that the cairn was originally 60 feet broad, that is, of the same size as the Càrn Bàn in Kilmorie Water or the cairn at Whiting Bay, the original distance of this stone from the cairn would have been somewhere about 60 feet. Now 50 feet to the west of the cairn is another large stone of much the same shape, lying on its face. It measures 9 feet by 4 feet 6 inches. It seems probable that this is a fallen stone, possibly a second of a larger series, of which the single upright pillar is the only survivor, but it is more than doubtful if the stones, or a larger group of which they formed a part, have anything more than a casual relation to the cairn. It is not possible to interpret them as survivors of a frontal semicircle; they are probably the remains of a circle of later date.

Near the west end there are a number of large flags, arranged without order or symmetry, which, I believe, are stones thrown down here when the northern part of the cairn was demolished. At the east end there are the remains of a ruined chamber, only one compartment of which is now entire. It is 5 feet 5 inches long by 2 feet to 2 feet 5 inches broad. The lateral stones are 5 feet long; the end stones are 2 feet and 2 feet 5 inches. The west stands 4 feet high from the bottom of the cist, the east only 2 feet 8 inches. The lateral stones are also unequal in height, the south being 4 feet 3 inches from its lower edge, the north only 3 feet. The unequal heights of the stones distinguish this from a single short cist, and to the east there are some displaced slabs which are the remains of other compartments in that direction. No relics of any sort were recovered.

The cairn, beyond the fact that it revealed the presence

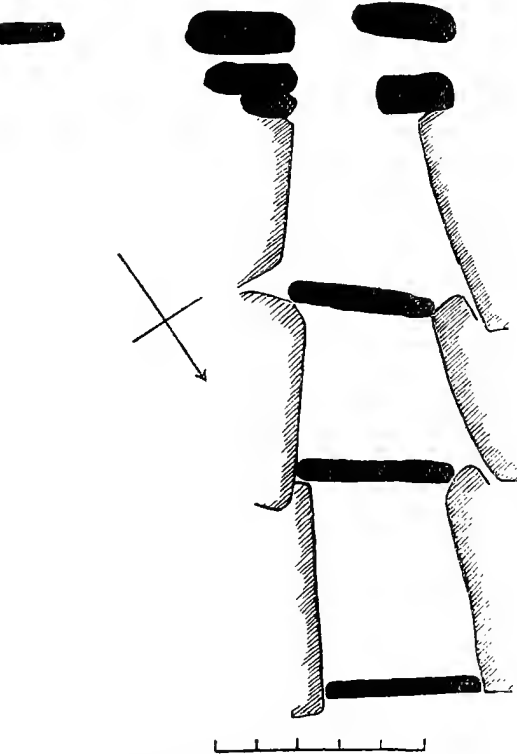
of a setting of flags marking the outline, yielded little information. The chamber, though much ruined, is to be taken as an example of the segmented structure described at the other sites, but none of the component slabs are massive like those of the 'Giants' Graves' at Whiting Bay or of the structure at Tormore.

MONAMÓR CHAMBER.

This structure stands on the high moor, about a mile to the south of the Monamór Burn. The ridge, on the edge of which it is placed, is 400 feet above the sea, and forms the southern lip of the deep glen in which a small tributary of the Monamór Burn runs.

The chamber was examined and excavated by the present author in July 1901.

It had been much disturbed by some previous excavations, and merits only a brief description, though it is important in respect of the evidence it shows of a portal leading into the chamber (Text-fig. 32). The limits of the



TEXT-FIG. 32.—Ground Plan of Chamber, Monamór Glen, Lamlash. (S. A.)

cairn are now unrecognisable. The megalithic structure is

14 feet in length, and its axis lies N.E. and S.W. It is formed of three pairs of lateral stones, and it is divided by septal slabs into three compartments. At the south end of the structure three upright stones remain as the survivors of a frontal semicircle. Two of them form the side posts of a portal. The east stone stands 4 feet 4 inches above the level of the top of the side walls of the chamber; it is 2 feet broad and 10 inches thick. The west stone is 2 feet 6 inches broad and 6 inches thick, and is lower than its neighbour, being only 2 feet 8 inches higher than the chamber. Three feet to the east is a third stone, 2 feet 6 inches broad, with its long axis standing in line with the two portal stones.

The height at which these stones stand above the chamber itself, the fact that the structure is placed on the edge of a ridge, with a flat surface in front of the portal, indicate that in all probability the chamber was originally such a one as that explored in the Càrn Bàn. All the superstructure has, however, been removed, and only the deeper megalithic portion of the chamber left.

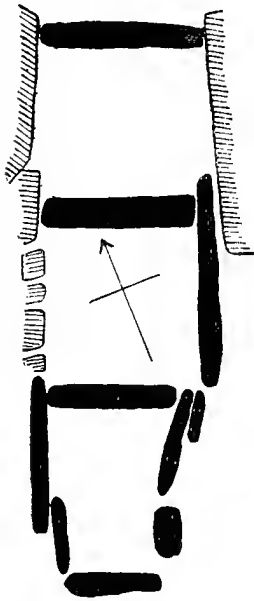
The soil thrown out was carefully riddled, but only a few fragments of pottery, and some chips of Corriegills pitchstone, were recovered in the way of relics. The fragments of pottery are composed of dark ware, and show no decorative design. They are too small to permit of an opinion as to what may have been the shape of the vessel.

SANNOX CHAMBER.

This structure occupies the site of a cairn marked on the Ordnance map on the high ridge above the old sea-cliff near Sannox, and in line with the great boulder on the shore known as the 'Rocking Stone.' There is only a fragment of the cairn left, measuring 50 feet long by 31 feet broad. There are no stones to be seen which could represent the

remains of a frontal semicircle, or of a setting of slabs round the margin.

The chamber (Text-fig. 33) lies E.S.E. and W.N.W., and measures 12 feet 10 inches in length by 4 feet wide, narrowing to 2 feet 4 inches at the south end, which is closed by a



TEXT-FIG. 33. —Plan of Sannox Chamber. (S. A.)

tapering granite slab of that width, and rising $5\frac{1}{2}$ feet above the chamber floor. There are three compartments (Fig. 33), measuring in the long axis of the chamber 3 feet 8 inches, 3 feet 9 inches, and 4 feet 1 inch respectively from N. to S. All the stones forming the chamber are sandstone flags with the exception of the third transverse stone, which is of conglomerate. The slabs are of unequal size, and the construction is therefore more irregular than usual (see plan), while the middle compartment is peculiar in having its west wall formed entirely of small flags and small rounded granite blocks, piled upon one another. The east wall is completed above in a similar fashion, but is formed below of a thin sandstone flag, the upper edge of which is 15 to 18 inches below the level of the

tops of the transverse stones.

Nothing was discovered, when the chamber was opened in May 1909, except a deposit of burnt human bones in the south-west corner of the middle compartment. The other compartments had been rifled by previous diggers, the north compartment being quite empty. Thirteen feet to the south, and in line with the chamber, is a rifled short cist, 2 feet 6 inches square.



FIG. 13.—View of North Chamber, Dinan Beag Cairn. (S. A.)

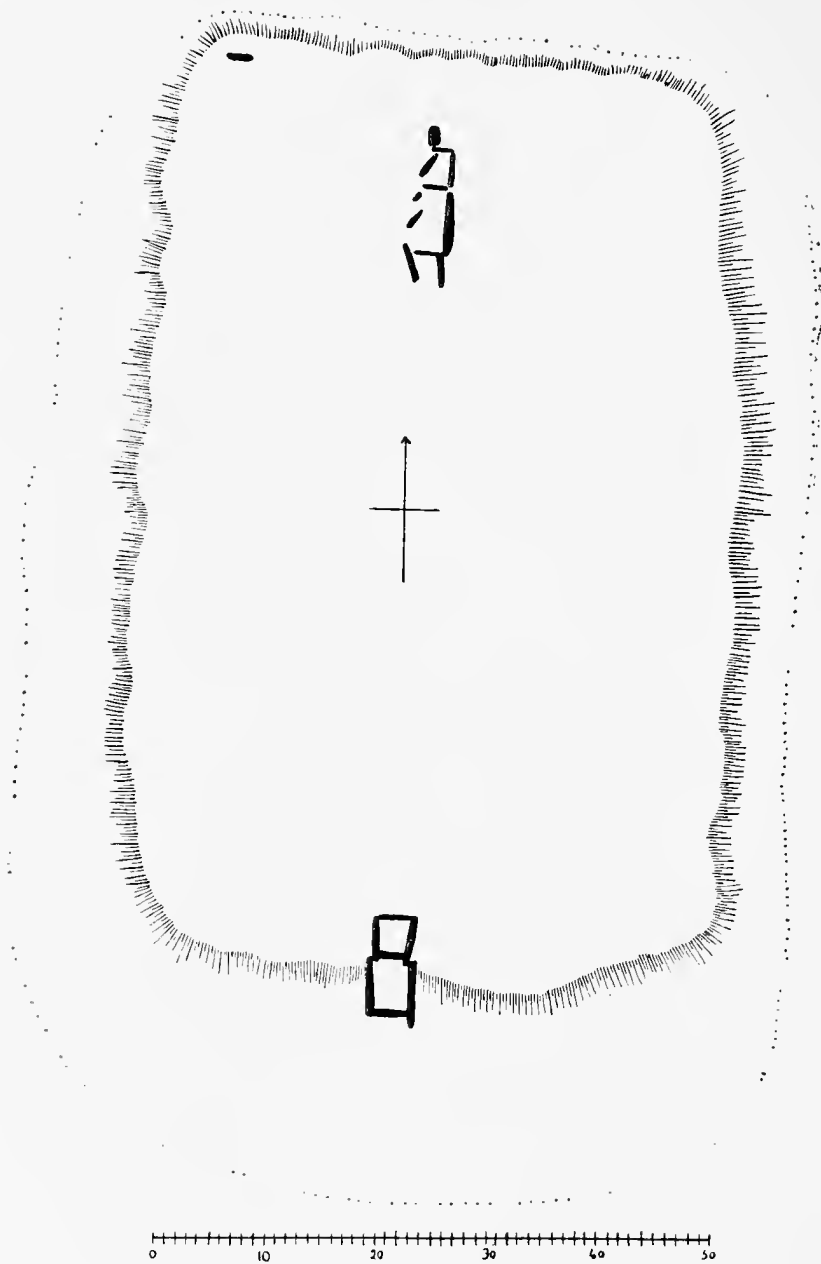
CAIRNS AT BLAIRMORE, LAMLASH.

On the eastern slope of the valley through which the road from Brodick to Lamlash runs, about three-quarters of a mile above Lamlash, there are two heather-covered cairns, which we name Dùnan Beag and Dùnan Mór. Dùnan Beag is a large rectangular cairn, placed at a level of 400 feet above the sea; a tall pillar stone stands close to its eastern edge. Dùnan Mór is nearly circular in shape, and is placed on the edge of the hill 100 feet higher. It is close to an old road, and it is interesting to note that this may have been the cairn which Pennant describes in 1772.

‘In the course of my ride,’ he writes, ‘on the other side of the hill of Dunfion facing the bay of Lamlash, I saw on the roadside a cairn of a different kind from what I had seen before; it was large, of an oblong form, and composed like the others of round stones; but along the top was a series of cells, some entire, but many fallen in; each was covered with a huge flat stone of great size resting on others upright, that served as supports; but I could not count them by reason of the lapse of the lesser stones.’

DÙNAN BEAG CAIRN.

The Cairn measures 121 feet long by 65 feet broad. Its long axis runs N. and S., and near its eastern edge is a standing stone. The south end of the cairn is not well defined, as it slopes gradually into the brow of the hill on which the cairn is placed. At the north end the western horn of the cairn is marked by a small standing stone (Text-fig. 34), while 16 feet from the present edge there is another stone which, on excavation, proved to be one of the portal stones of a chamber occupying this end of the cairn. The relation of these two stones suggests that they are the survivors of a



TEXT-FIG. 34.—Plan of Dùnan Beag Cairn, Lamlash. (S. A.)

frontal semicircular setting. There are no traces now remaining of any setting of flags to mark off the outline of the cairn. The chamber is much dilapidated. It is divided into three compartments, but the end stone is now absent. It lies with its long axis directed approximately N. and S. (magnetic). The portal stone is a block of schist, 2 feet 6 inches broad, and it stands 3 feet 6 inches above the transverse slab which completes the chamber at the portal end, and forms, as it were, the sill of the portal (Plate VII. Fig. 13). The first compartment of the chamber is almost filled by a large block of schist, which is in all probability the second portal stone fallen into the chamber. The east wall is formed of three large blocks of schist set on edge—but the west wall is much broken down, and such stones as are present are displaced. The compartments, which are from 3 feet 6 inches to 4 feet deep, were filled, when dug out in April 1909, with stones and earth. They had certainly been rifled on some former occasion, and the only trace of an interment was a small piece of burnt bone. A small piece of pottery, composed of dark ware, and without ornamentation, a flake of flint showing some working, and some flakes of Corriegills pitchstone, were the only relics recovered.

At the south end of the cairn is a second chamber of two compartments. One of them was exposed on the edge of the cairn, the other was buried below it. It is constructed of two pairs of large blocks or flags of schist, enclosing a space of 10 feet by 3 feet (Plate VIII. Fig. 14). The chamber is closed to the north by a slab 5 feet 9 inches deep, rising as high as the side stones. There are two cross stones—the first 2 feet, the second 3 feet—below the tops of the lateral blocks. The first compartment measures 5 feet long by 3 feet 3 inches broad, the second 3 feet long by 2 feet 10 inches broad. The lateral stones bounding the first compartment measure 5 feet 1 inch and 6 feet 6 inches respectively, the pair forming the second compartment 4 feet 6 inches and

4 feet 10 inches. It will be gathered from the dimensions of these stones that the chamber does not differ in any way from that of a typical cairn. The tall flag closing the upper end of the vault is clearly the original end stone, but the absence of portal stones, and the fact that the cairn has been quarried inwards from the margin, suggests the possibility that these two compartments are the remnant only of a larger structure.

Each compartment was completely filled with soil and stones. There were numerous sandstone flags of varying dimensions, probably representing an upper built section of the chamber wall. The floor of each compartment was covered by a layer of black earth, and numerous fragments of charcoal were found in the deeper strata of the soil.

In the first compartment two unburnt interments were found, one along the west, one along the east wall. The bodies lay in the doubled-up position. The bones were those of adult persons, but were so much decayed and softened that they could not be taken out entire.

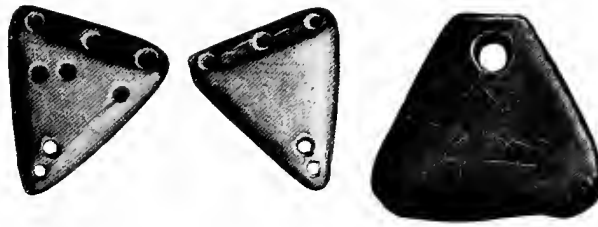
In the second compartment another unburnt interment was laid bare in the south-west corner.

A number of animal bones were present, chiefly of the ox; teeth both of ox and pig also occurred. The relics recovered were a flint flake, some fragments of Corriegills pitchstone, and two distinctly flaked portions of this mineral; also a minute fragment of dark-coloured pottery, portions of an ornamented vessel of a red ware, and parts of a jet necklace.

The fragments of the urn (Plate ix. Fig. 16) recovered are all very small, and do not piece together so as to show the height of the vessel from base to lip. But it has been evidently a small vessel of the beaker type, with an approximately semi-globular lower part and a low everted rim. The lip is bevelled from both sides so as to present a triangular section, the inner bevel being slightly larger than the outer. Both are ornamented with short parallel lines



FIG. 14.—View of South Chamber, Dùnan Beag Cairn. (S. A.)



(S. A.)

Fig. 15.

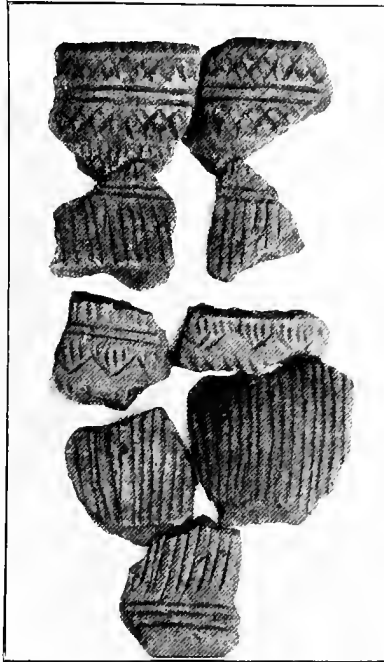


Fig. 16. (S. A.)



Fig. 17.

FIG. 15.—Terminal Plate and Pendant of a Jet Necklace, South Chamber, Dùnan Beag Cairn.

FIG. 16.—Fragments of an Urn of the Beaker Class, South Chamber, Dùnan Beag Cairn.

FIG. 17.—Portion of Jet Necklace, Chamber at Tormore Farm House.

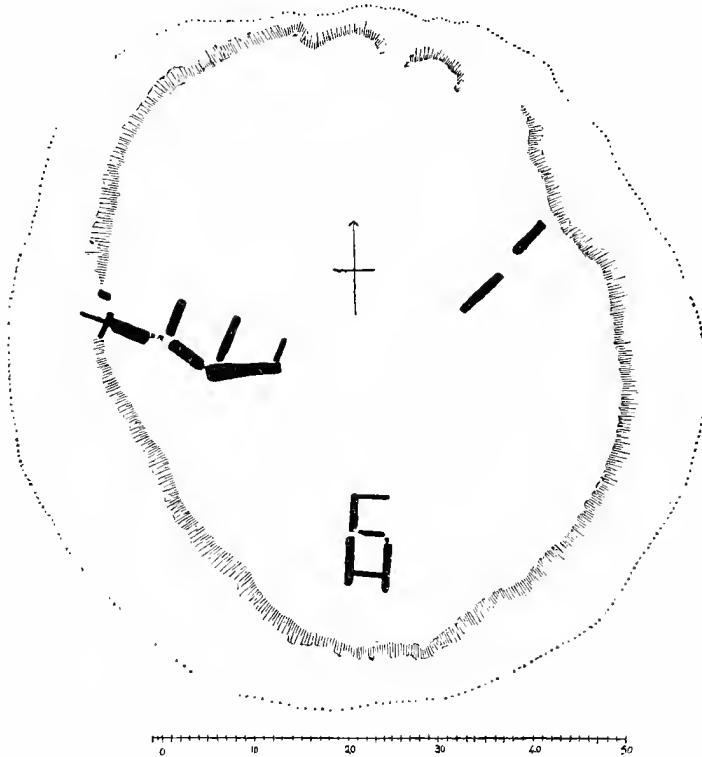
drawn obliquely across, and a band of similar ornament runs round the top of the inside face of the lip. Below the bevel on the outer surface of the everted lip is a double band of criss-cross lines, separated by a band of two horizontal lines running round the vessel a little more than an eighth of an inch apart. The decoration on the neck seems to have been in straight parallel lines arranged vertically and set closely together, bordered above and below by bands of two horizontal lines running round the vessel. The shoulder seems to have had a band of zigzag lines set horizontally, with three or four short lines placed vertically in the upper angles. Below this, on the bulge of the lower part, is a zone of parallel lines placed vertically and close together, bordered at the lower part by a band of three parallel horizontal lines just above the bottom.

The necklace is represented by one terminal piece and a pendant (Plate ix. Fig. 15). The terminal piece is triangular in shape, but its sides are not quite equal, measuring 21, 25.5, and 23 millimetres respectively. It is pierced by two openings at the apex and three at the base. It shows no trace of ornament. The pendant is also triangular, and is likewise undecorated. It measures 28 mm. from base to apex and 31 mm. at the base. There is a large perforation at the apex, which is truncated.

The *standing stone* to the east of the cairn measures 7 feet high and 3 feet 10 inches broad at the base. Its longer axis lies E. and W. The distance between it and the cairn is 11 feet. The ground at the base of the stone was opened by Mr. J. A. Balfour in November 1908. Three feet 6 inches from its north side, a trench was found scooped out of the hard subsoil. It was 4 inches in depth, and covered by a flag of stone measuring 19 inches long, 11 inches broad, and $1\frac{1}{4}$ inch thick, which had split into three portions. In the trench there was a small quantity of charcoal, mixed with minute fragments of calcined bone.

DÙNAN MÓR CAIRN.

This cairn has, in its present condition, an almost circular outline (Text-fig. 35). Its diameter measures 78 feet. It has



TEXT-FIG. 35.—Plan of Dùnan Mór Cairn, Lamlash. (S. A.)

served as a quarry, out of which, probably, a dyke running over the hill has been built. The cairn was examined, and certain megalithic structures enclosed within it were excavated in April 1909.

The remarkable feature of the cairn is the presence of three chambers, which are disposed in a radial fashion.

As each of these must have cut into the margin somewhere, it is clear that it cannot originally have been a long rectangular cairn like that of the typical monument.

All the chambers are greatly dilapidated. That at the north-east corner (see plan) is now represented only by two flags of schist placed in line with one another. The second chamber, on the west side, is rather more complete, but has lost its north wall. Its long axis runs from the portal inwards in a direction 70° south of east (magnetic). It is 22 feet in length, and is divided by two transverse slabs into three compartments. There is a distinct portal guarded by two stones, and the trench is completed at the inner end by a tall flag set on end. The stones forming the intact wall are specially heavy, as are also the dividing slabs. There is an interval between the first and second side blocks, which is filled by a building of small flags piled horizontally. The compartments are specially roomy, the first measuring 5 feet 4 inches in its long axis, the second 5 feet, the third 4 feet 9 inches. Owing to the absence of the north wall, the breadth of the compartments could not be determined, but they have a nearly uniform depth of 3 feet 2 inches from the upper edges of the transverse slabs.

This chamber must have been completely rifled by some earlier diggers, as no relics of any kind were found, and there was no trace of any interments.

The chamber at the south end is more perfect than the other two, but it is possible that even it represents only a portion of a larger chamber. It now consists of two compartments, and there are three cross stones; of these last the third or inner is clearly the original end stone of the chamber. It stands above the level of the other two, and is 4 feet 6 inches high, rising to the level of the side stones (Plate x. Fig. 18). The lateral blocks are massive stones; those bounding the first compartment measure—the east

stone 6 feet 1 inch by 1 foot 8 inches by 5 feet, and the west stone 5 feet 10 inches by 1 foot 7 inches thick and the same height. The second compartment has lost its east member, the west is 3 feet 11 inches broad, 1 foot thick, and 5 feet deep. The depth of the compartment from the top of the cross stones is 2 feet 6 inches. The axis of the chamber lies nearly N. and S., with a slight inclination to the E. The compartments measure 3 feet 6 inches by 2 feet 11 inches, and 3 feet 5 inches by 3 feet, respectively.

These dimensions indicate that the structure, except in consisting of two divisions only, does not differ from a typical chamber. The absence of a portal makes it possible that it is only a remnant of a longer chamber, but, on the other hand, it agrees exactly with the chamber at the south end of Dùnan Beag Cairn. The evidence of the relics, as we shall see later, from both these chambers points to the conclusion that they belong to a transitional phase of chamber building, and to the category of degenerate structures—so that the present condition may quite well represent the original plan. This problem will be discussed in detail later on.

The compartments were filled with soil and stones, including many small flags, as at other sites. The floor of each was covered by a layer of black earth, with a few pieces of charcoal and some fragments of burnt bone intermingled with it. Portions of a large rude vessel of red pottery, a flint knife or scraper, three flint flakes, and fragments of Corriegills pitchstone, formed the yield of relics.

The flint knife (Plate x. Fig. 19) is 8 inches long by 3·2 broad. It is made of an opaque flint, and is worked along both margins from the ridged back. The urn has evidently been a large and coarsely made vessel of the food-vessel class. A portion of the flat bottom was recovered. Parts of the rim show a rude pattern of chevron markings scratched on the surface.



Fig. 18. (S. A.)

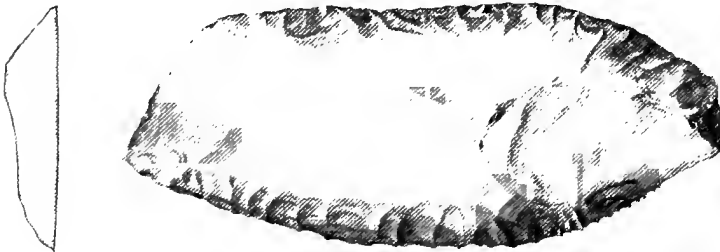


Fig. 19. (S. A.)

FIG. 18.—View of South Chamber, Dùnan Mór Cairn, after excavation.

FIG. 19.—Flint Knife from South Chamber, Dùnan Mór Cairn.

REMAINS OF CHAMBER AT TORMORE FARM.

The older books on Arran mention a white cairn at Tormore. It has now disappeared, but the old farm buildings have obviously been largely built of the stones which formed it, and there is still to be seen a remnant of the chamber incorporated in the wall of one of the outhouses.

Two stones stand parallel to one another, 2 feet 6 inches apart and projecting about 2 feet 8 inches from the wall which has been built round them. They are heavy slabs, the one 3 feet 6½ inches, the other 3 feet 6 inches high. Parallel with the inner side of the wall, and coinciding with it, is a transverse slab 29 inches high.

There exists a tradition that an urn was laid bare in digging the foundations of the wall about fifty years ago, and in 1909 Mr. Alexander MacAlister and Mr. Peter M'Kenzie made some excavations, both within and without the wall, to determine if there were any other slabs which might have belonged to the chamber. No evidence was forthcoming, however, that the chamber had been part of a larger structure.

The axis of the cist runs N.W. and S.E. In the soil between the stones, flakes of flint, pieces of Corriegills pitchstone, and fragments of charcoal were noticed; a small portion of an urn was recovered; and at the north-east corner the terminal piece and twenty oval beads of a necklace were found.

The fragment of pottery represents the portion of a thick-walled vessel of reddish ware. It is slightly curved, but it is impossible to say what may have been the shape of the urn.

The necklace (Plate ix. Fig. 17) when complete must have closely resembled that found in a short cist at Mountstuart in Bute, and figured on page 104. The terminal is a bugle-shaped piece of lignite, 48 mm. in length, 27 mm. broad at the base, and 8 mm. thick. The face is ornamented

with five small triangles outlined by, and filled in with, minute shallow stippled markings. The base shows four thread holes which open on the back near the base. Near the apex on the same aspect there is a single hole opening at the apex of the plate. The necklace must therefore have consisted of four rows of beads, which are of the oval variety. They vary in length from 30 mm. to 11 mm., and also in thickness. The longer ones have a distinct central ridge, from which they are tapered to both extremities.

The association of a necklace of this kind with a chambered structure has its parallel at Dùnan Beag Cairn. The significance of the association will be discussed later; meantime it may be remarked that it proves that this chamber belonged to the Transitional Period, when the Chamber Culture was being replaced by the Short Cist Culture, and it is quite possible that the structure consisted from the first of only a single compartment like the chambers at Glecknabae in the island of Bute, afterwards to be described.

SUMMARY AND ANALYSIS OF THE CHAMBERED CAIRN CULTURE.

We have now described in detail the chief monuments of the Chambered Cairn class in Arran. All have certain common characters with only minor differences, except the cairns near Lamlash named Dùnan Beag and Dùnan Mór. The Dùnan Mór Cairn is in a category by itself, but with it must be associated the south chamber in Dùnan Beag. To some extent in structural features, and absolutely in the character of the relics recovered, the south chambers in these two cairns differ from the chambers of the typical monument. We shall leave them out of account meantime, as the argument concerning them can only be developed after we have studied the Short Cist Culture.

The remaining cairns form a complete descending series

through all stages of denudation and demolition, from the nearly perfect example at Càrn Bàn, through the East Bennan Cairn and Giants' Graves, to the fragment in Baile Meadhonach Glen (see Inventory, p. 144). At the different sites a feature has been lost here but preserved there, and by gathering all the data together the typical monument can be completely reconstructed.

It may be defined shortly as follows :—

It is a large rectangular cairn, with a definite ground-plan marked off by a setting of flagstones. At one end this setting is disposed in a semicircle, and bounds a space leading to the portal of a chamber which occupies one end of the cairn. The chamber is formed of two sections—a deeper, built of large stones set on edge, bounding a trench-like space divided into compartments by septal slabs set right across the floor; and an upper, built of small flags placed horizontally upon the upper edges of the stones forming the basal portion. The object of this upper section is twofold; to afford head-room within the chamber, and to provide a level surface for the roofing flags to rest upon. There is no passage of approach, but merely a portal of entrance placed some distance above the floor. The compartments contain the remains of several successive interments, the bones being in some cases unburnt, in others burnt. Associated with the interments are found implements of stone only, and vessels of pottery made of a dark paste and with rounded bottom. This type of cairn is not confined to Arran on the west coast of Scotland. It occurs in Kirkcudbrightshire; several examples have been excavated by the present writer in Bute and in Islay; a fine specimen of a denuded chamber is to be seen near Ballimore, on the east shore of Loch Fyne; another, near Beachara in Kintyre, was excavated some years ago by the Campbeltown Naturalists' Club; while two others in the Crinan district have been described by Canon Greenwell and Dean Mapleton.

We shall now analyse the data somewhat more exhaustively, taking—I. Structural Features; II. The Relics; III. The Mode of Burial; and IV. The Physical Characters of the Builders.

I. STRUCTURAL FEATURES.

(a) *The Cairn* is invariably, in the typical monument, rectangular, and horned at one end only. The length is nearly twice the breadth. The only point on which a remnant of doubt remains regarding the Arran cairns is the setting of flags round the sides and end. This feature would inevitably be the first to disappear in the quarrying of the cairns, and the East Bennan and Moinechoill Cairns, as well as Càrn Bàn, supply evidence that this feature was in all probability a constant one.

The axis of the chamber corresponds with the axis of the cairn. We may therefore take it that the orientation of the chamber, in cases in which the cairn is fragmentary, gives the orientation of the cairn. The following is a list of the cairns, showing the orientation of each :—

Càrn Bàn, . . .	W.N.W. by E.S.E.	Portal	East and South.
East Beunan, . . .	W.N.W. ,, E.S.E.	,,	West and North.
Giants' Graves, . . .	N.N.E. ,, S.S.W.	,,	North and East.
Clachaig, . . .	N.N.W. ,, S.S.E.	,,	North and West.
Torlin, . . .	N. ,, S.	,,	North.
Slidderie, . . .	N. ,, S.	,,	North.
Tormore No. 1, . . .	N.E. ,, S.W.	,,	North and East
Tormore No. 2, . . .	N.E. ,, S.W.	,,	North and East.
Moinechoill, . . .	E. ,, W.	,,	East.
Monamór, . . .	N.E. ,, S.W.	,,	South and West.
Baile Meadhonach, . . .			
Sannox, . . .	W.N.W. ,, E.S.E.	,,	West and North.
Glenrickard, . . .	N. ,, S.	,,	South.
Dippen, . . .	N. ,, S.	,,	North.
Dùnan Beag, . . .	N. ,, S.	,,	North.
Dùnan Mór, . . .	Circular.		
Tormore, . . .	Axis of Cist ; North-west and South-east.		

From these data it will appear that there is no fixed compass orientation in the case of these monuments. Even if the readings of the bearings be to some extent inaccurate, it is not possible to bring them into line by any amount of 'margin of error.' The three critical instances are the Càrn Bàn, East Bennan, and Monamór Chambers. In the first the portal is directed east by south, in the second south-west, and in the third west by north, while the greater number of the others have the portal at the north end, either north and east or north and west. Now, at Càrn Bàn, East Bennan, and Monamór Cairns, advantage is taken of the character of the ground to set off a flat area for the portal bay. The compass bearings are certainly determined by the nature of the site, and by that only, in these three cases; and as they vary so greatly from one another, the idea that compass bearings reveal some astronomical cult among the prehistoric races must be definitely rejected in the case of the Chambered Cairns of Arran.

(b) *The Chamber*.—The portal is an essential feature of the monument, the chamber being a vault, not the grave of a single individual. Even though it is absent in particular instances, it must have been originally present in all. Every chamber must originally have had a roof supported on the lateral walls. The open trench seen at so many sites is certainly merely the denuded basal megalithic portion of the chamber wall. Between floor and roof head-room was required, and we have seen the manner in which this was obtained at Càrn Bàn, the only monument where the roof was still *in situ*. Here, also, we were able to make out a second purpose of the building, viz., to provide a level surface for the support of the roofing flags.

In every case where, by choice or necessity, blocks of schist were used for the basal section of the wall, this building of smaller flags, laid horizontally, was almost certainly adopted, though it is right to say that another device for

supporting the roof has been adopted at Kilhocan, on the Poltalloch estate, in the Crinan district (Plate XI. Fig. 20). Here the roofing flags, which are still *in situ*, rest on struts placed outside the stones forming the chamber wall. There is no evidence that this method was employed in Arran. In the cases—such as Clachaig and Torlin chambers—where sandstone flags were used, the depth of the chamber was obtained in another way. Thus at Clachaig one wall is formed of two tall slabs such as could be got from the adjoining shore, 8 feet high, and rising 4 feet above the cross stones; the opposite wall is formed of four smaller slabs, two to each compartment, not laid horizontally, but placed vertically, the upper slabs resting on the edges of the lower. In this case there is no need of a built section such as seen at Càrn Bàn, and roofing flags of sandstone may have been laid directly on the upper edges of the slabs forming the walls. As we should expect, the builders adapted their method of construction to the nature of their building material. At Largie, near Kilmartin, there is still existing a chamber of the segmented type (Plate XI. Fig. 21)—described long ago by Canon Greenwell¹—where both methods were employed. Certain of the sandstone flags are tall enough to reach the roof, others are lower, and the height is obtained by a building of small flags horizontally placed.

II. THE RELICS FOUND IN THE CHAMBERS.

(a) *Implements and Weapons*.—All the implements recovered have been of stone. They are knives and side scrapers of flint; arrowheads of flint of the early leaf-shaped variety; a polished stone axe; a polished and perforated stone hammer. Fragments and flakes of Corriegills pitchstone

¹ *Proc. Soc. Antiq. Scot.*, vol. vi. p. 341.



Fig. 20. (S. A.)

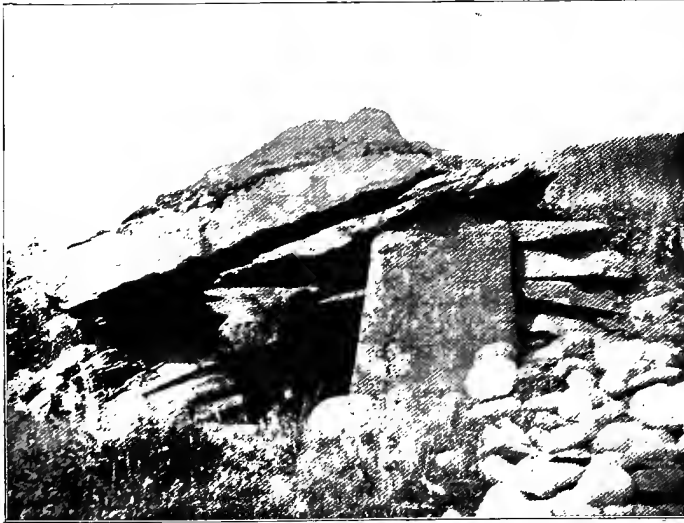


Fig. 21. (S. A.)

FIG. 20.—View of Megalithic Structure at Kilchoan, near Kilmartin, Argyllshire.
FIG. 21.—View of Chamber at Largie Farm, Kilmartin, Argyllshire, from the South.

have invariably been found along with flint flakes or implements. This material is a greenish glassy mineral, which occurs in seams in different parts of the island, but more especially at Corriegills. It is very hard, flakes easily, and has a very sharp fractured edge. It was used in Arran and Bute as a substitute for the rarer flint. Actual implements in the pitchstone are very rare, but three arrow-points have been found, and serve to prove the thesis. The rarity may well be due to the dark colour of the mineral not striking the eye as a piece of flint does.

The archæological horizon indicated by these various objects is late Neolithic. The number of chambers is too small for conclusions to be drawn from the locality itself. If we add the sites explored in Bute, Islay, and Argyll, the number is brought up to twenty-five, and at none of these has any object of metal yet been found. Further, in all the cairns of the northern series the horizon is definitely Neolithic.

We conclude, therefore, that the builders of the typical monuments in Arran were still in the phase of Stone Culture—though it is certain that their occupation lasted into the so-called Bronze Age of more southern latitudes; and we shall see in a later section how their culture gave way before that of the intrusive Short Cist, or Bronze Age Culture.

(b) *Ornaments*.—No object of personal adornment has been found in any chamber in Arran, save in the chambers of the Dùnan Beag and Tormore Cairns. The jet plates and beads there recovered belong to a type of necklace which is commonly found in short cists associated with unburnt bodies. They are characteristic of the early Bronze Age. The chambers in which they were found are probably transitional, and the conclusions to be drawn from their occurrence will be discussed in a later section.

(c) *Pottery*.—Very particular interest centres in the vessels of clay which have been yielded by the chambered cairns of Arran, Bute, and Argyll. At Achnacree Chamber, near Oban, Dr. Smith recovered, in 1871, two broken bowl-like vessels, with rounded bottom made of a dark ware.¹ They were not ornamented, but had a shoulder and a recurved rim (Plate XII. Fig. 22). At Largie Chamber,² in 1864, Canon Greenwell found a vessel of very similar shape, marked all over the surface by vertical flutings (Plate XII. Fig. 23). The excavations in Arran, Bute, and Kintyre have added a considerable number of urns of this class to the small group previously known. They form a very distinctive series. In one respect all the vessels agree; they are bowl-shaped, and have rounded instead of flat bottoms. The vessels found in the chambers of Dùnan Beag and Dùnan Mór Cairns are quite exceptional, and belong to types characteristic of the pottery of the short cists. The significance of their appearance in chambers will be considered later when the evidence is discussed on which is based the conclusion that these chambers are transitional.

The rim of the bowl may be recurved and flat, but in the ruder sort this feature is absent. Below the rim, in some examples, there are small projecting handles or ears—but the most distinctive of the class have a receding upper portion or brim sloping inwards to the mouth from a shoulder below which the vessel is uniformly rounded. This upper portion or brim often forms itself the contracted mouth of the bowl, but in two beautiful samples the mouth is bounded by a small upstanding lip or rim.

The decoration of these vessels is as distinctive as the shape. They are either marked by shallow vertical flutings, more or less regular, or by straight lines and dots impressed on the clay by some pointed instrument. The lines are

¹ *Proc. Soc. Antiq. Scot.*, vol. ix. p. 409.

² *Loc. cit.*



Fig. 22.

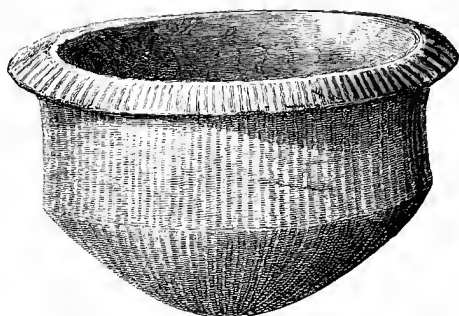


Fig. 23. (S. A.)

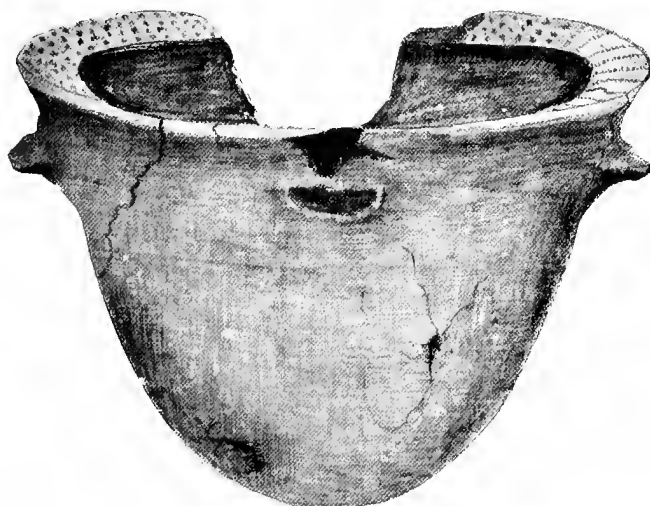


Fig. 24. (S. A.)

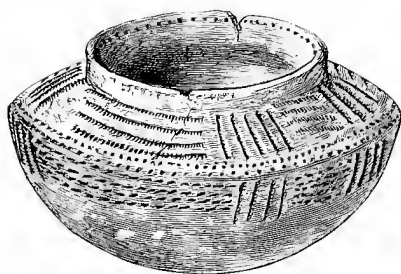


Fig. 25. (S. A.)

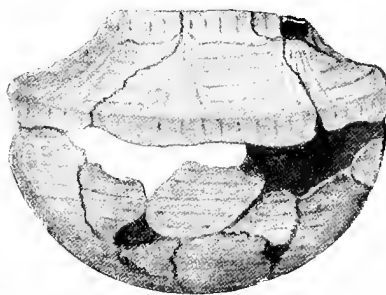


Fig. 26. (S. A.)

FIG. 22.—Urn from Achnacree, 4 inches high.

FIG. 24.—Urn from Beachara, 7 inches high.

FIG. 23.—Urn from Largie, 6½ inches high.

Fig. 25.—Urn from Clachaig, 3½ inches high.

FIG. 26.—Urn from Beachara, 4½ inches high.

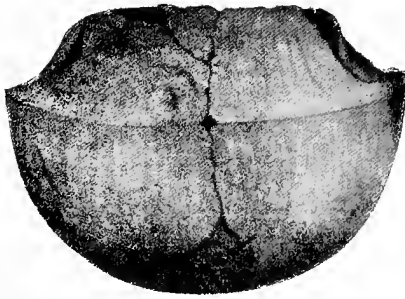


Fig. 27. (S. A.)



Fig. 28. (S. A.)

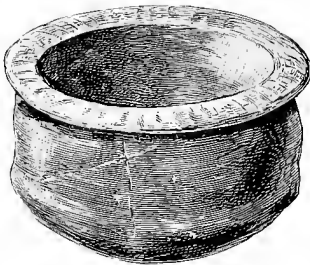


Fig. 29. (S. A.)



Fig. 30. (S. A.)



Fig. 32. (S. A.)

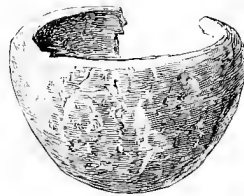


Fig. 31. (S. A.)

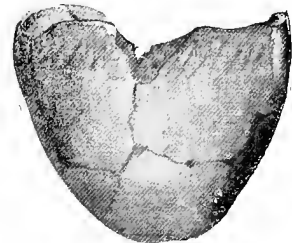


Fig. 33. (S. A.)

FIG. 27.—Urn from Beachara, $4\frac{1}{2}$ inches high.

FIG. 29.—Urn from Glecknabae, Bute, $3\frac{1}{2}$ inches high.

FIG. 31.—Urn from Bicker's Houses, Bute, $2\frac{3}{4}$ inches high.

FIG. 28.—Urn from Beachara, $3\frac{1}{2}$ inches high.

FIG. 30.—Urn from Bicker's Houses, Bute, $3\frac{3}{4}$ inches high.

FIG. 32.—Urn from Beachara, $4\frac{1}{2}$ inches high.

FIG. 33.—Urn from Beachara, $3\frac{1}{2}$ inches high.

arranged sometimes in alternate groups of horizontal and vertical markings, but in one very curious example the brim of the bowl is marked by semi-ellipses one within the other. In no case does any angular motive occur, and there is never any zonular arrangement of the decoration. The chevron pattern is never seen, and the zigzag ornament produced by alternate triangular markings never occurs. In the chambers of the northern group of cairns a round-bottomed ceramic is found, but the vessels are much larger, more basin than bowl-like, and have a vertical upper part or brim. The chevron ornament is seen on the brim in some cases.

The affinities of this bowl-like pottery are so clear that it provides a strong argument as to the proximate origin of its makers—but we shall deal with this matter in a later section.

The presence of a beaker urn in the chamber at Dùnan Beag Cairn is an exceptional occurrence, the significance of which will be discussed when we come to consider the evidence for a merging of the Chambered Cairn with the Short Cist Culture.

III. THE MODE OF BURIAL.

The structural characters of the chamber make it sufficiently clear that it was designed to be a vault for successive interments. This custom is one of the essential features of the cult of the builders.

In some of the chambers the bones which were recovered were unburnt, so that the mode of burial must have been inhumation; but in certain cases incinerated bones were found.

At Torlin and Clachaig the presence of numerous skeletons determined, of course, the mode of burial; but at the Giants'

Graves only burnt bones were found, and in such numbers that there seemed no room for doubt that in this instance the bodies were cremated. At Tormore, Slidderie, and Monamór the absence of bones left the matter uncertain. The floor of each compartment of the chambers was covered by a thick layer of earth mixed with minute particles of wood charcoal. While this suggested cremation, on the other hand the absence of burnt bones, which are nearly indestructible, not decaying as unburnt bones do, and the fact that when tested the ash was found to be largely, if not wholly, wood, not bone ash, went against such a conclusion. The point is one of importance, because, in terms of the opinion that prevails on the subject, the practice of cremation would indicate a later date for the structures where it had been followed. In no other respect is there any difference between the cairns in which the bodies were burnt and those in which they were unburnt. In the earlier cists of the immediately succeeding culture the bones found are unburnt, so that the usual order regarding burial customs is reversed in the case of the chambers in which there is evidence of cremation. It follows, therefore, either that the Chambered Cairn Culture persisted unaltered in all other respects in remote localities, long after the beginning of the Short Cist Culture, or that the practice of burning the bodies was adopted independently, owing to influences directed along its own line of extension. Canon Greenwell, from facts which came under his notice in the Crinan district, inferred that cremation preceded inhumation in the West of Scotland, but the excavations in Arran have shown that this is only partly true; the fact seems to be that both practices were adopted before the period of Short Cist intrusion.

There is another point which must be noted in passing, viz., that animal bones, mostly of the domestic ungulates—ox, sheep, and pig—were found at all the

sites of chambered cairns. It is possible—though it is idle to speculate on such slight data—that these represented the remains of funeral feasts, and that the charcoal in the chambers came from the fires for the preparation of the food.

At Torlin and Clachaig there was abundant evidence that the chambers were used for successive interments. The bodies had evidently been placed in the contracted position in the corners of the several compartments. The skulls were found in the corners, and the long bones lay along the sides of the cist. Sometimes the disposition of the bones suggested that the bodies had been placed upright in the contracted posture in the corners, but owing to the practice of multiple burial the remains were always in great disarray, and this contrasts with the more orderly arrangement of the bones in short cists, in which a single body was placed on its side in the bent-up position.

IV. PHYSICAL CHARACTERS OF THE CHAMBER BUILDERS.

The skeletons found at Clachaig and Torlin provide us with some very definite information regarding the physical characters of the chamber builders.

1. *Bones of Trunk and Extremities.*—The bones of the trunk and limbs were in great part broken, but enough data could be collected to show that the stature of these early people was low. It cannot have exceeded 5 feet 6 inches for the male, and considerably less for the female. The extreme slenderness and shortness of some of the fully adult female bones was remarkable. Several specimens of certain bones of the extremities exhibited characters which are to be regarded as primitive, and have been described as occurring in the skeletons of the Stone Age elsewhere. Thus a perforation of the humerus above

the lower extremity (intercondylar foramen) was present in one specimen. The head of the tibia (shin bone) was tilted back in some cases, and in nearly all of the tibiae there was a lateral flattening of the shaft (platycnemia). The average platycnemic index (*i.e.* the proportion between the antero-posterior and transverse diameters of the shaft at the upper end) was 59·8 in six male bones and 66 in three female. The lowest figure, 52·6, represents a marked degree of lateral flattening.

Some examples of the femur (thigh bone) showed a certain degree of antero-posterior flattening in the upper third below the trochanters. This condition, known as ^oplatymery, was, however, not so marked as in the bones discovered in the caves at Oban and described by Sir William Turner. The average platymeric index (*i.e.* the proportion between the transverse and antero-posterior diameter of the shaft below the trochanters) was 69·8 for eight male bones, and 78·9 for three female bones. The contrast between male and female bones is noteworthy in connection with the theory that this flattening is due to special development of the muscular fibres attached to this part of the bone.

2. *Skull*.—The greater number of the skulls were hopelessly broken, but four were recovered entire (Plates xiv. and xv.), and indicate very clearly what the head- and face-form of the chamber builders was. The annexed Table gives the measurements in detail.

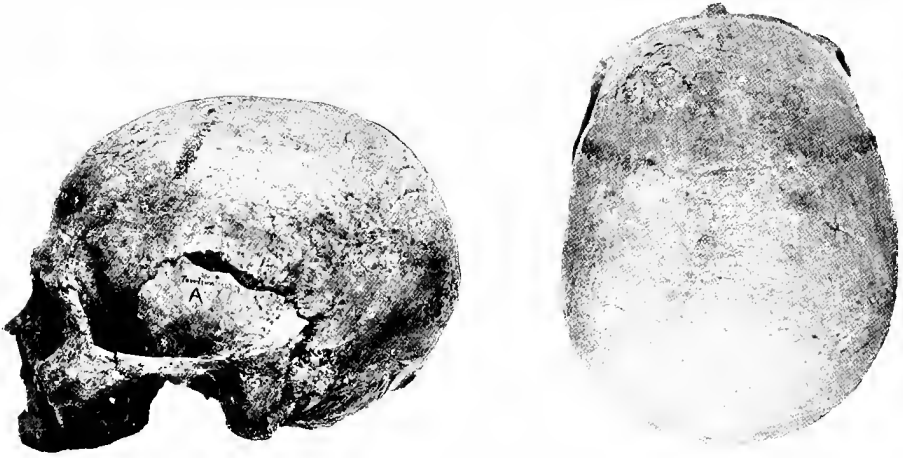


FIG. 34.—Skull of elderly Male (A) from Torlin Chamber. (S. A.)



FIG. 35.—Skull of adult Male (B) from Torlin Chamber. (S. A.)

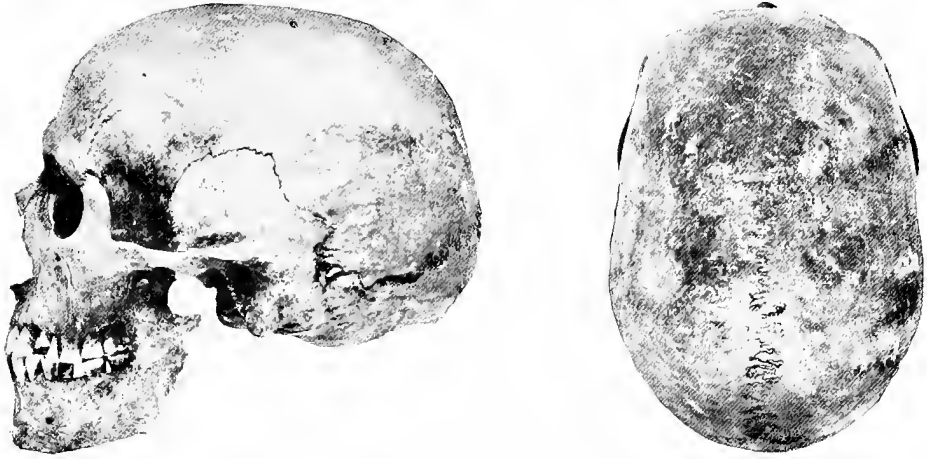


FIG. 36.—Skull of adult Male (A), Clachaig (Limekiln) Chamber. (S. A.)



FIG. 37.—Skull of adult Female (B), Clachaig (Limekiln) Chamber. (S. A.)

	TORLIN.			CLACHAIG.		
	AGE AND SEX. } Past Middle Life, M.	B. Adult M.	C.	A. Adult M.	B. Adult F.	C.
Cubic capacity	1480 c.c.	...	...	1560 c.c.	...	...
Glabello-occipital length	186	201	210	197	186	198 ap.
Glabello-nasal length	174	184	...	191	175	...
Ophryo-occipital length	181	197	...	194	185·5	...
Basi-bregmatic height	136	132 ap.	...	132·5	132	...
<i>Vertical index</i>	73·1	65·6	...	67·2	70	...
Minimum frontal diameter	96	...	...	102	103	...
Stephanic diameter	120	114	...	118	121	...
Asterionic diameter	111	116	...	111	116	...
Maximum breadth	140	134	...	139	139·3	140 ap.
<i>Cephalic index</i>	75·2	66·6	...	70·	75	70·
Horizontal circumference	517	528 ap.	...	542	525	...
Vertical transverse arc	307	309	...	298	300	...
Longitudinal arc—						
Frontal segment	132	125	...	136	128	...
Parietal segment	125	125	...	136	137	...
Occipital segment	123	140	...	123	...	...
Total	380	390	...	395	376 ap.	...
Length of foramen magnum	34	...	...	39·8	...	...
Basi-nasal length	99	...	...	98	97	...
Proportion of vault to base	2·85	...	...	2·86	...	...
Basi-alveolar length	94	...	...	92	89	...
<i>Gnathic index</i>	95	...	...	93·8	91·7	...
Inter-zygomatic breadth	132	134	...	139	135	...
Inter-malar breadth	117	...	...	121	120	...
Nasio-mental length . . . . .	...	125	...	126	...	...
Nasio-alveolar length	67	70	...	72	62	...
<i>Complete facial index</i> . . . . .	...	94	...	90·6	...	...
<i>Upper facial index</i>	50·7	52·2	...	51·8	46	...
Nasal height	53	55	...	55	49	...
Nasal width	24	24	...	23·7	25	...
<i>Nasal index</i>	45·2	43·6	...	43·2	51	...
Orbital width	41	...	...	43·5	43	...
Orbital height	33	...	...	32	31	...
<i>Orbital index</i>	80·4	...	...	73·5	72	...
Palato-maxillary length . . . . .	...	54	...	55·5	47·5	...
Palato-maxillary breadth . . . . .	...	62	...	65·5	60	...
<i>Palatal index</i> . . . . .	...	114·3	...	117	126·3	...

A study of the skulls shows that they have a relatively large capacity, indicating that in mass, at any rate, the brain of those early people was not less than that of the present

inhabitants. In shape the skulls are well formed, with good frontal development, and finely arched vault. The presence of a low ridge along the middle line of the vault (sagittal suture) is a distinct feature. The sides are flat and vertical, some of the specimens being distinctly 'ill-filled,' that is, not well rounded out in the temporal region. The back of the skull slopes very gradually down to a prominent rounded occipital protuberance. Looked at from above, the outline of the skull has a long oval or ellipsoidal shape. The length is great in proportion to the breadth, and the *cephalic index*,¹ expressing the relation between length and breadth, places them all in the dolichocephalic class. Torlin B. and Clachaig A. fall very low among skulls in this category, more especially the first. The skulls are all relatively low in proportion to their length, the height index, expressing the relation of height to length, always falling below the length-breadth index—showing that relatively to the length the skulls have a greater breadth than height.

The face is high and narrow, the cheek bones do not project, and the jaws are vertical. In respect of the last character, the skulls are orthognathic. The nose is high and narrow.

From the characters of the skeletons we may thus gather that our chamber builders were a short people, with relatively large, long heads, high narrow faces, and well-arched foreheads. In complexion they were probably brunette, with dark hair and eyes. They were certainly the same people, or a branch of the same people, who built the so-called *Long Barrows*.

¹ The cephalic index is calculated according to the formula $\frac{\text{breadth} \times 100}{\text{length}} = \text{cephalic index}$. When the index is above 80 the skull is called *brachycephalic*; when it falls below 75 it is called *dolichocephalic*; when the figure lies between 75 and 80 the skull is called *mesaticephalic*. The average Scottish skull of the present day is *mesaticephalic*.

AFFINITIES AND ORIGIN OF THE CHAMBER BUILDERS.

The theory of the Iberian origin of the Long Barrow people and chamber builders had its first foundation in the description by Tacitus of the western tribes in England. This theory, in a more or less modified form, is now supported by many facts, anatomical and archæological. In their anatomical characters the skeletons found in Arran agree in all essential respects with those found in the English long barrows, as already mentioned, and these again have the same features as the remains of the people of the Dolmen period in western France at the end of the Stone Age. On anatomical grounds, therefore, we can, with some confidence, say that our chamber builders came from the south, and that a kindred people were located in the western parts of Gaul at the end of the Stone Age; but the thesis may be extended so as to bring the whole stock from the Mediterranean. All round the Mediterranean a physical type persists largely unaltered from very remote times to the present day. Our northern chamber builders were the northern outposts of a great western or Iberian division of a common Mediterranean stock.

But apart from anatomical evidence, other considerations tend strongly to the same conclusion. The chambered cairns belong to the same class as the 'gallery graves' of western France and the chambers of the islands in the Mediterranean. The Giants' Graves of Sardinia bear a very strong resemblance to the Arran chambers, having a distinct frontal semicircle in front of a portal of entrance into a long trench-like vault, formed of slabs set on edge. The pottery is practically identical in type with the Dolmen pottery of western France. While vessels, not unlike our specimens, occur in the chamber graves in Denmark and Sweden, the pottery from these regions has, as a whole, a different

character. It is more advanced, and shows evidences of late influences from the south and east. The Dolmen pottery from western France, on the other hand, is almost a replica of our Arran pottery, and there are marked affinities with the late Neolithic ceramic from the Pyrenees and Spain. In short, the Arran pottery is essentially Iberian, using that term in the same sense as it is applied to the people themselves.

Putting all the factors together, we can very confidently say that our early islanders came from Mediterranean lands by the coast route, and that they passed over to the British Isles from the north-west corner of France, bringing with them a specific type of culture.

It is not part of the purpose of this chapter to deal with the ultimate origin either of the people or of their cult. The common stock has been called conveniently the *Eurafrican*, as in very remote times it occupied the Mediterranean basin, and the cult of the chamber in one form or another is widely spread. It will suffice for our purpose if we have ascertained that our special sept, and our special type of chamber culture, is, in the broad sense of the term, Iberian.

Starting from the north-western corner of France, and following the coast routes, the chamber builders passed onwards in two streams, first along the English Channel and thence to the Baltic, and second over to Ireland and up St. George's Channel. The first stream hardly touched England, but spread on to the Baltic; the second spent itself chiefly on Ireland. We conclude this because the typical monuments occur in great numbers all over Ireland, whereas in England they seem to be confined to the western borders, with the exception of one great Long Barrow wedge, which extended into the interior by way of the Severn Channel, through Gloucester, Wilts, Stafford, and Derby into Yorkshire. In Scotland the distribution is, so far as yet known, restricted in the same sense, for chambered

cairns are only known to occur on the west coast, in the Hebridean Islands, in Caithness and the Orkneys, though a very modified kind of chamber is found in Nairnshire.

It is possible to argue that the cairns have been swept away in the more cultivated districts of the mainland, and have persisted only in the remote and inaccessible parts. The fact that they are spread all over Ireland, while many cairns of later date and circles are preserved in the parts of Scotland where the chambered cairns are absent, strongly suggests that they had, from the first, the partial distribution noted above.

There is, therefore, very reasonable ground for the theory—which may be held until chambered cairns have been proved to exist elsewhere—that the chamber builders came from the south-west and spread over the Hebrides to the Pentland Firth and the Orkneys, and possibly also up the Great Glen to the Moray Firth. One question alone remains, Did they come to Arran directly up the Irish Channel, or by way of Ireland? It is not of consequence to settle this point, as the chamber builders of Arran were in any event, as shown from the affinities of the monuments, an eastern outpost of a great division of the Iberian stock which was spread over Ireland at the same period.

THE SHORT CISTS AND STONE CIRCLES OF ARRAN.

Turning from the chambered cairns and the various problems they suggest, we now have to consider the Short Cist Culture as manifested in Arran.

Cist interments have been found in various settings, and in nearly every part of the island there are numerous circles of standing stones, some of great size and dignity, and there are also several large monoliths. The cist interments have all the same structural features u n d e r g r o u n d, but the

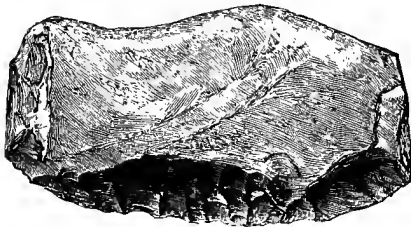
overground monument varies. They occur in circular cairns, in mounds or within the area of stone circles, but often there is no overground structure to mark their site, and they are frequently found as secondary interments in the chambered cairns.

The cist itself is always neatly constructed of four regular slabs of stone set vertically to enclose a space about 3 feet long, 2 feet broad, and 2 feet deep. The shorter end stones are placed either within or without the side stones. There is never any flooring flag, but always a capstone which is sometimes of great size and weight.

We shall now consider in detail various instances of short cist interments discovered in Arran. The monuments of this class are fairly numerous, but many are imperfect, or were found in a rifled state. Those only will be considered at this point which yielded definite data, or are otherwise of special interest. A complete list, with a brief description of each monument, will be found in the Inventory at the end of the chapter.

I. SHORT CISTS IN CHAMBERED CAIRNS.

An excellent example of cist interment in this setting



TEXT-FIG. 36.—Flint Knife or Side-scraper from Short Cist, Clach-aig (Limekiln) Cairn. (S. A.)

was disclosed in the course of the excavation of Clach-aig Cairn (see Plan, p. 57). It was covered by a sandstone slab 6 feet long by 4 feet broad and 7 inches thick. Its internal measurements were 3 feet 4 inches long, 1 foot 8 inches broad, and 2 feet deep, and in its small dimensions and neat construction it provided a strong contrast to the megalithic

cists of the chamber. It was filled with fine mould, and contained some fragments of unburnt bone, a flint knife or side-scraper (Text-fig. 36), and a piece of pottery of the 'food-vessel' type. The urn (Text-fig. 37) is a flat-bottomed cylindrical vessel $5\frac{1}{16}$ inches high, ornamented with three zonular mouldings in relief and a rough pattern of chevrony markings. The contrast between this urn and the bowl-like vessel found in the chamber in the same cairn, provides a striking instance of the difference between the chamber ceramic and that of the short cists.



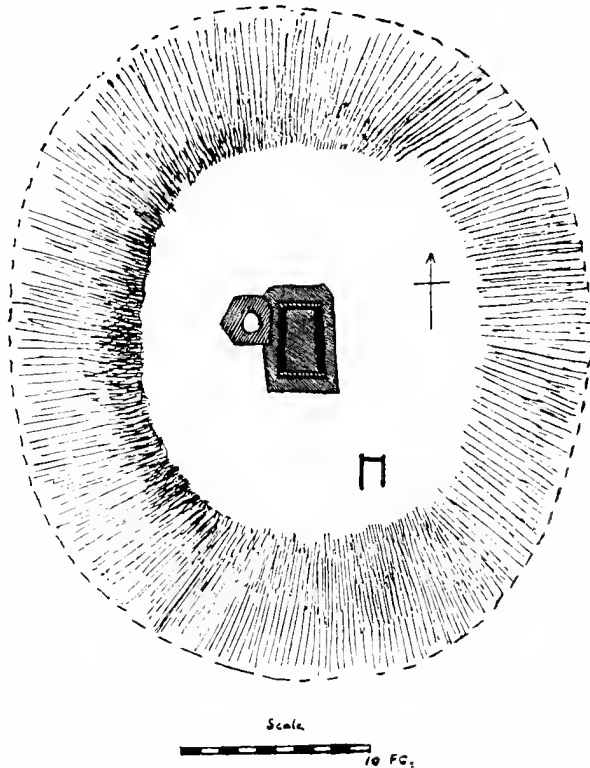
TEXT-FIG. 37.—Urn from Short Cist in Clachaig (Limekiln) Cairn. (S.A.)

II. SHORT CISTS IN MOUNDS.

1. *Ossian's Mound, Clachaig* (Text-fig. 38).—At Clachaig farmhouse there is a terraced mound of considerable height which is called *Ossian's Mound*, as it has been reputed by popular tradition the grave of the poet. It is in part a natural elevation, on which a tumulus measuring 35 feet by 29 feet has been raised. Under the centre of this, exploration revealed a short cist covered by a large capstone, and measuring 3 feet 9 inches by 2 feet 1 inch. A somewhat smaller cist, representing a secondary interment, was found near the south margin of the mound.

The main cist had been opened before, and the second examination only resulted in the finding of a flint flake and fragments of an urn. There were no bones, burnt or unburnt.

The urn had been made of a reddish ware, and the fragments showed a chevron ornament and lines composed of rows of fine dots placed very close together.



TEXT-FIG. 38.—Plan of Ossian's Mound and Cists, Clachaig. (S. A.)

The second cist yielded nothing; it had been rifled on some previous occasion.

2. *Cnocan a' Choilich Cist.*—At the farm of Cnocan a' Choilich a cist was exposed in 1886 by workmen who were levelling a small hillock, presumably a tumulus. Within the cist were found the skull, some long bones, and pieces of ribs and vertebræ of a young person, associated with an urn of

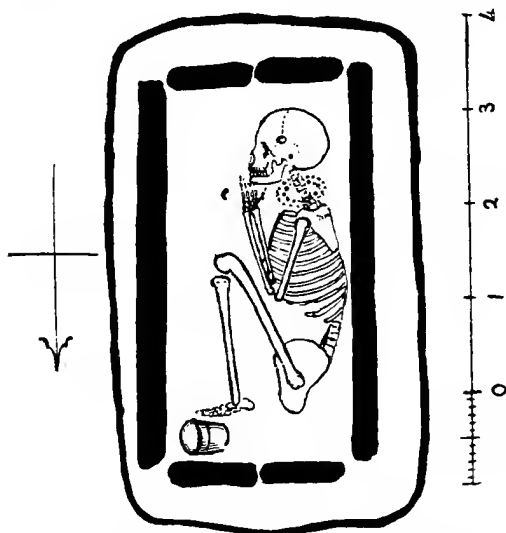
the 'food-vessel' class. The urn (Text-fig. 39) is ornamented with a chevron pattern, and round the widest part of the vessel there is a slightly hollow moulding, bounded by two lips showing an ornamentation of diamond-pointed markings.

Two interments of this class recorded in Bute, more perfect than any we have in Arran, may be referred to here, since they serve to complete the picture of the Short Cist Culture, and will form a factor in the later argument regarding the fusion of the two cultures in Arran.



TEXT-FIG. 39.—Urn from Cist at Cnocan a' Choilich. (Scale, $\frac{1}{4}$.) (S. A.)

3. *Mountstuart Cist*.—At Mountstuart in Bute, during the removal in 1887 of a slight hillock, which had been looked



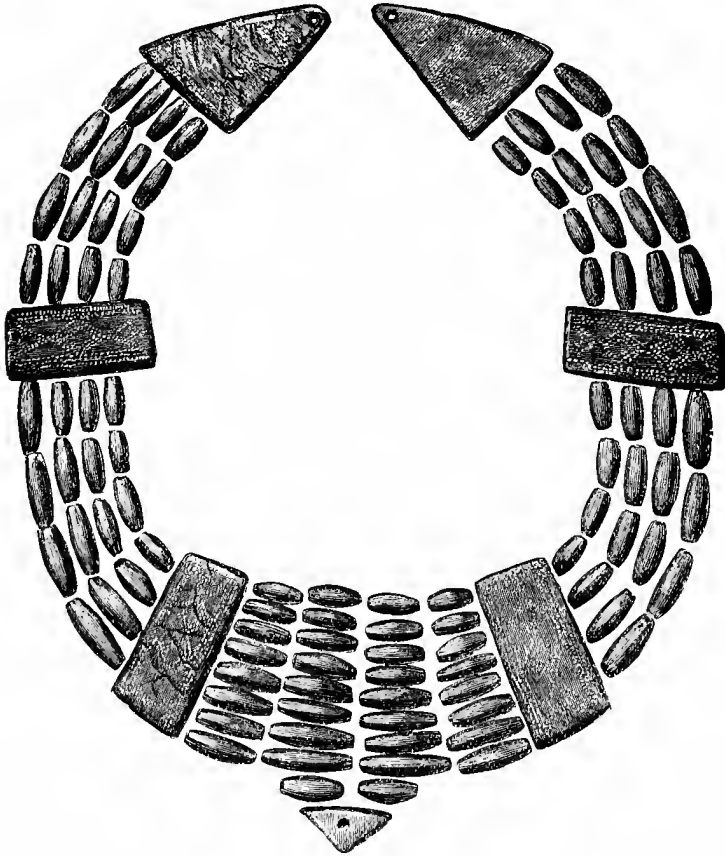
TEXT-FIG. 40.—Cist Interment, Mountstuart, Bute. (S. A.)

upon as a natural elevation, the workmen exposed a cist interment, which was described by the late Marquis of Bute.

The cist (Text-fig. 40) lay north and south, was covered by a large flag, and measured 4 feet 2 inches by 1 foot 6 inches. It presented the peculiarity that the ends were each formed of two small flags instead of a single stone. The interior

contained the remains of a skeleton of a young woman, placed on its right side, and in the contracted position. In

the region of the neck lay a quantity of jet beads, which, when strung together, made up a complete necklace. In front of the skull, where the hands would have lain, a small piece of



TEXT-FIG. 41.—Necklace from Mountstuart Cist. (S. A.)

bronze was found, and in the north-east corner lay an urn on its side.

The piece of bronze is of indeterminate character, possibly part of a ring. The necklace (Text-fig. 41) is made of



FIG. 38.—Tumulus at Scalpsie Bay, Bute. (S. A.)



FIG. 39.—Single Sandstone Pillar, Tormore. Survivor of a large circle.

elongated oval beads and rhomboidal and triangular plates of jet with punctated ornament. It consists of two terminal plates and four intermediate rhomboidal plates, with ninety-eight beads and a triangular pendant.

The urn (Text-fig. 42) has much the same characters as these last described; there are two mouldings, one of which is ornamented by dog-tooth lines; the under portion is plain, but the upper portion is decorated by horizontal bands of chevrony pattern.

The skull will be alluded to later.

4. *Scalpsie Bay Tumulus.*—

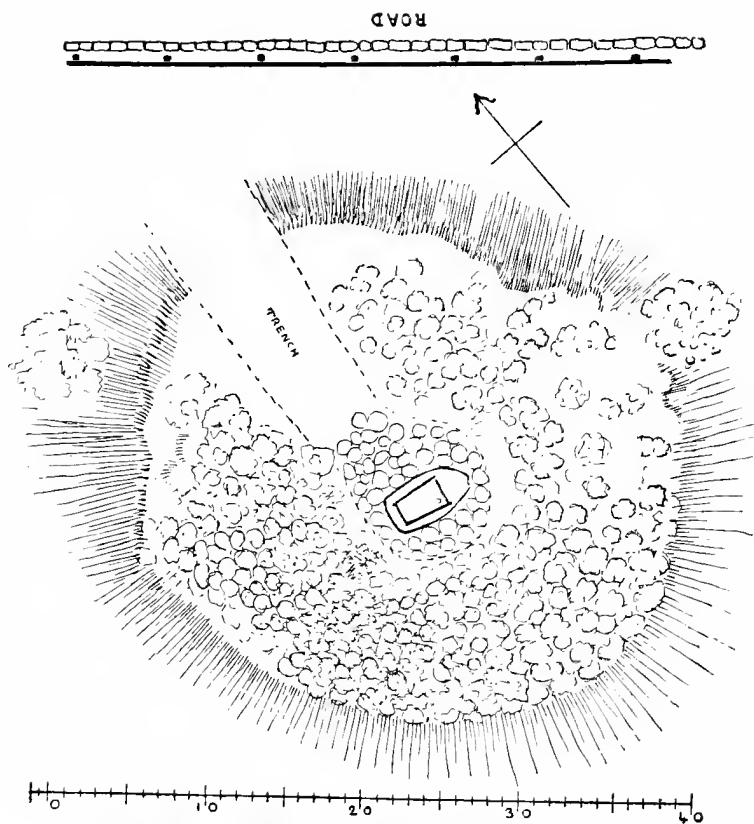
At Scalpsie Bay in Bute, a small tumulus was opened by the present writer in 1903, which contained an undisturbed cist interment. The tumulus (Plate XVI. Fig. 38) was of circular shape, and about 45 feet in diameter. It was formed in great part of earth, mixed with stones, but in the centre (Text-fig. 43) there was a core of large stones, surrounding and covering the cist. The covering flag was nearly 6 feet long, but the cist itself, which was very neatly constructed, measured only 2 feet 10½ inches in length and 18 inches in breadth.

In one corner of the cist lay an urn, mouth downwards, and on the floor were many fragments of burnt bone. From the soil which had gathered in the cist we recovered a jet bead, a bronze pin, and a flint scraper (Text-fig. 44).

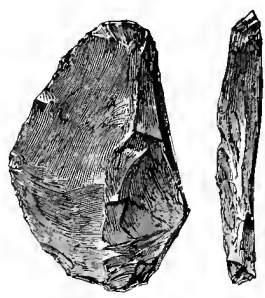
The pin (Text-fig. 45) measures three-quarters of an inch in length, and is somewhat rectangular in section. The bead (Text-fig. 45) is oval, like the beads of the Mountstuart



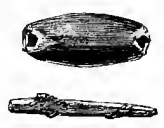
TEXT-FIG. 42.—Urn from Mountstuart Cist. (Scale, ¼.) (S. A.)



TEXT-FIG. 43.—Plan of Tumulus, Scalpsie Bay, Bute. (S. A.)



TEXT-FIG. 44.—Knife or Scraper of greyish Flint from Cist in Scalpsie Tumulus. (Scale, $\frac{3}{8}$.) (S. A.)



TEXT-FIG. 45.— Jet Bead and Bronze Pin from Cist in Scalpsie Tumulus. (Fullsize.) (S. A.)

necklace, and is polished. The urn (Text-fig. 46) is very richly decorated. Round the shoulders is a groove bridged over in each quadrant by a bar which is not perforated. The



TEXT-FIG. 46.—Urn of food-vessel type from Cist in Scalpsie Tumulus. (Scale, $\frac{1}{2}$.) (S. A.)



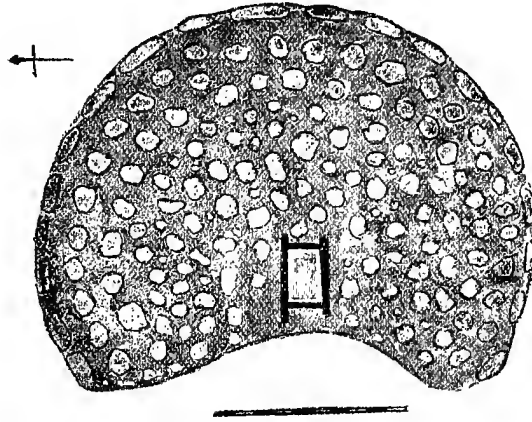
TEXT-FIG. 47.—Base of Urn of food-vessel type from Cist in Scalpsie Tumulus. (Scale, $\frac{1}{2}$.) (S. A.)

whole body is covered by zones of chevron pattern; the groove and the broad levelled lip are ornamented in the same fashion. On the lip, neck, and body a further ornament is added in the shape of well-executed dog-tooth bands. A cross pattern is also impressed on the bottom of the vessel (Text-fig. 47).

III. SHORT CISTS IN CAIRNS.

1. *Brown Head Cairn* (Text-fig. 48).—At Brown Head, on the side of the public road, are the remains of a circular cairn of stones, which has been partially destroyed by the cutting of the roadway. The outer limit of the cairn is set off by a series of large stones, placed close together and defining a

perfect circle of 26 feet diameter. Within the outer tier is a second course of large rounded stones, and within this again a mass of stones and earth forms the core of the structure. The cist occupies the central point of the cairn ;



TEXT-FIG. 48.—Plan of Remains of Circular Cairn at Brown Head. (S. A.)

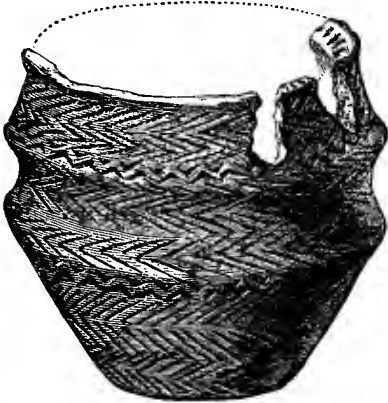
it measured 3 feet 2 inches long and 1 foot 8 inches broad. It had already been tampered with, but in the soil which filled the cavity, an urn in fragments was recovered, and a number of small perforated discs of jet. There were no bones, burnt or unburnt. The jet beads (Text-fig. 49) are



TEXT-FIG. 49.—Beads of Lignite from Cist in Brown Head Cairn. (S. A.)

of several sizes, and represented a portion of a necklace of a well-known type, consisting of graduated discs. The urn (Text-fig. 50) is handsomely decorated by a chevron pattern, and round the circumference are two mouldings marked by a series of angular impressions arranged with their points alternately in opposite directions, so as to form a zigzag or dog-tooth ornament. The vessel is also remarkable for a pattern of triangular markings on its base (Text-fig. 51).

2. *Cist at South Feorline.*—At Blackwaterfoot a cist was discovered in 1900 at the site of a cairn which, though it has now disappeared as such, attracted the attention of the



TEXT-FIG. 50.—Urn from Cist in cairn at Brown Head, $5\frac{1}{2}$ inches high. (Scale, $\frac{1}{2}$.) (S. A.)



TEXT-FIG. 51.—Bottom of Urn from Cist at Brown Head. (Scale, $\frac{1}{2}$.) (S. A.)

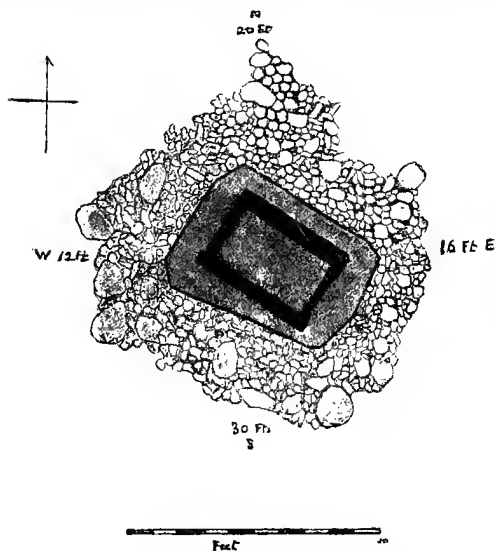
travellers and antiquaries of a hundred years ago. It was described as being of great size, 200 feet when entire according to the Statistical Account, and seems to be the same cairn noticed by Pennant on his tour. He speaks of it as a 'stupendous cairn a hundred and fourteen feet over, and of vast height.' MacArthur, in his book on Arran (1873), states that when the stones were being removed to build the houses of the hamlet, many 'stone coffins' were found which contained bones, but no implements of stone or metal.

The cist (Text-fig. 52) uncovered in 1900 was probably the central interment. It was particularly well constructed, being formed of stones so regular that they appeared to have been hewn, and was also relatively large, being 4 feet 3 inches long, 2 feet 4 inches broad, and 2 feet 6 inches deep.

It contained a beautiful bronze dagger blade¹ and a gold

¹ The dagger was presented to the National Museum of Antiquities by Mr. Thomas Wallace.

fillet, probably part of its mounting (Text-figs. 53 and 54). The blade measures $9\frac{1}{4}$ inches in length, and 3 inches in breadth at the base.



Two rivets which fixed it to the handle are still in place, and the blade is ornamented by three mouldings, a central midrib and two lateral converging on it at the point. The gold fillet is ornamented with parallel flutings, and it probably served as a mount for the butt end of the handle of the dagger.

The explorers did not see any fragments of an urn among the

TEXT-FIG. 52.—Plan of Cist at Blackwaterfoot. (S. A.)

débris in the cist, nor did they observe any bones.

IV. SHORT CISTS WITHOUT ANY OVERGROUND STRUCTURE TO MARK THE SITE.

Glenkil Cist.—Before proceeding to describe the cists within the circles of standing stones, I may give a description of two cists as examples of cist interments without any overground structure to mark their site.

At Glenkil, about the year 1886, a cist was discovered by Mr. James Tod. It contained an unburnt interment, an urn, but no other relics. The urn (Text-fig. 55) is covered by a pattern of chevron markings, and round its shoulder is a hollow moulding which is bridged across by six small loops

at regular intervals, suggesting the use of a cord for carrying the vessel. The lips of the moulding are decorated by



TEXT-FIG. 53.—Bronze Blade
from Cist at Blackwater-
foot. (Scale, $\frac{1}{2}$. (S. A.)



TEXT-FIG. 54.—Portions of Gold Band,
probably part of the mounting of the
dagger. (S. A.)



TEXT-FIG. 55.—Urn from Cist at
Glenkil. (Scale, $\frac{1}{2}$.) (S. A.)

triangular markings, and the bevelled inner face of the lip is impressed by markings as of the teeth of a comb. The bottom is ornamented by a pattern of triangular markings.

Achancairn Cist.—A complete cist belonging to this

category still exists intact at Achancairn. There is a tradition that it was opened some years ago and an urn removed. It was reopened in 1909 by Mr. J. A. Balfour, who ascertained that it contained a deposit of burnt bones. There was no urn, but he recovered a calcined flint implement. The cist is covered by a capstone measuring 5 feet by 3 feet 8 inches. Its axis lies due N.W. and S.E., and it is formed of five slabs of a hard red sandstone. The north-east side is built of two slabs, not of a single slab as usual. The cist measures internally 1 foot 9 inches long, 1 foot $1\frac{1}{2}$ inch broad, and about 1 foot 4 inches deep. These dimensions are unusually small, but are explained by the fact that the interment was of burnt bones.

Besides these cist interments of which we have a record, cists are to be seen here and there in the island now lying open and broken down, and rifled of their contents. In the *New Statistical Account of Scotland* (Bute V.), p. 23, it is mentioned that similar 'coffins are every year met with in cutting drains and ditches in different parts of the parish, sometimes connected with cairns, and sometimes not.' In the different books on Arran, references, more or less authentic, to discoveries of short cists with urns and bones are to be found, but from lack of detail they are useless for our present purpose. All this valuable material, probably much larger in amount than what is now available, has been lost to us, but we may consider ourselves fortunate that so much of the record has been preserved. One of the relics which has disappeared is referred to in the *New Statistical Account* and also in Wilson's *Prehistoric Annals*; it was a penannular ring of gold found in a cist at South Kiscadale, near Largie Beag.

On the Ordnance map the finding of cists is recorded at the mouth of the North Sannox Water, at Merkland Point, and elsewhere. A list of these sites will be found in the Inventory at the end of the chapter.



FIG. 40.—Large Stone Circle of Sandstone Blocks, Tormore.

V. CISTS WITHIN THE AREA OF CIRCLES OF
STANDING STONES.

The number of Stone Circles in Arran is relatively large, and some of them are excellently preserved.

Monoliths also occur in considerable numbers, but whether they be survivors of circles or true monoliths it is difficult to determine. The largest assemblage of circles occurs on Machrie Moor. There are eight in all. Five of them, which form a compact group round the small farmhouse called Moss Farm, were explored by James Bryce, LL.D., in 1861. He was one of the first to prove definitely the sepulchral character of such circles of standing stones in Scotland.

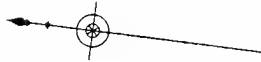
Circles on Machrie Moor.

The group explored by Dr. James Bryce lies close to the Moss Farm, in the heart of Machrie Moor. The conditions prevailing in 1861 have not been materially changed; the original descriptions will therefore be largely adhered to.¹

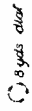
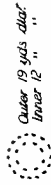
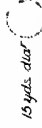
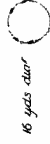
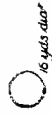
The chief member of the group (No. 2 from the right on the Plan, Text-fig. 56) is a single circle 45 feet in diameter, of tall sandstone slabs, three of which are perfect and upright (Plate xvii. Fig. 40), but the rest of the circumference is partly defined by the bases of other stones remaining in the soil. There seem to have been originally in all seven or eight stones. The tallest, that on the west side, is 16 to 18 feet high, 3 feet 6 inches broad, and 1 foot 10 inches thick; the next, on the north-west, is about 15 feet high, 3 feet broad, and 1 foot 2 inches thick; the third, on the north-east, is 12 feet high, of irregular breadth, but at its broadest part about 4 feet broad and 11 inches thick. This stone is broader upwards; the others taper, but not to a point. Within the circle are two large stones, both evidently cut from a fallen pillar,

¹ *Proc. Soc. Antiq. Scot.*, vol. iv. p. 499.

Single Stone



PLAN SHOWING STONE CIRCLES ON TORMORE MOSS



ANGUS MALISTER C.E.

TEXT-FIG. 56.

one with a perforation as if prepared for a millstone. In the centre of this circle, under a stratum of peat 15 inches thick and 2 feet from the surface of the underlying till, a capstone, measuring 4 feet 2 inches by 3 feet 9 inches and 17 inches thick, was laid bare. It covered a cist 2 feet 11 inches long, 1 foot 10 inches broad, and 2 feet 2 inches deep, lying N.N.E. and S.S.W. Within the cist, the bottom of which was covered by a layer of black earth, were found an urn and four flakes of flint, but no remains of the actual interment.

The urn (Text-fig. 57) is $7\frac{1}{2}$ inches high. It is wide-mouthed and flat-bottomed, tapers in the lower part, and has two mouldings on the upper part, above which it contracts towards the mouth. It is richly decorated over its whole surface by zones of dog-tooth ornament and bands of parallel lines obliquely disposed.

Between the central cist and the north-east pillar stone a second cist was discovered, 3 feet 1 inch below the surface. The capstone was 4 feet 6 inches long, by 3 feet 8 inches broad at one end and 2 feet 8 inches at the other. The cist measured 3 feet 3 inches long, 1 foot 11 inches broad, and 1 foot 9 inches deep. No object of any kind was found within the cist, and as there was no evidence of previous



TEXT-FIG. 57.—Urn from Cist within Stone Circle on Machrie Moor, $7\frac{1}{2}$ inches high. (S. A.)

disturbance, the explorer hazarded the suggestion that it had been prepared as a place of sepulture, but not utilised.

An excavation to the south of the centre, with a branch running west, did not lay bare any further cists, so it was concluded that the design could not have been a circle of cists around the central one.

A second circle of similar tall sandstone slabs stands a short distance to the west of the one just described. Only one stone still stands erect, but five others mark the circumference of the circle. It is about 39 feet in diameter. The erect stone (Plate XVI. Fig. 39) is about 14 feet high, and corresponds in its other dimensions to the pillars of the last circle described, which it very much resembles in the characters of the weathering. In the centre of this circle there was also a cist discovered under 15 inches of peat and 3 feet 3 inches of red sand, in which an arrowhead was found. The capstone had the form of a truncated triangle, and a curious arrangement was noted in the placing of eight stones round the edge of the slab, as if to assist in keeping it down. The cist was 2 feet 10 inches long, 1 foot 3 inches broad, 1 foot 5 inches deep, and was directed nearly N.E. and S.W. Within the cist was an urn which crumbled on handling, some flint flakes, but no bones.

Three feet southwards, in the radius of the circle, but on a higher level, was a second cist, only 1 foot 8 inches from the surface of the till. The capstone measured 4 feet by 4 feet 1 inch, the cist was 3 feet in length, 1 foot 4 inches broad, and 2 feet deep, and lay N.N.E. and S.S.W. The sides were not quite parallel. The cist contained a skeleton in the doubled-up position, two flint flakes, but there was no urn. The long bones were in fragments, but a considerable portion of the skull was recovered; it will be described later. The great pillar slabs of these two circles are of dark-coloured, close-grained, old red sandstone. This occurs in the bed of

the Machrie Water, somewhat less than half a mile away, but Dr. Bryce considered it more probable that they were obtained from the rocks on the shore, though the actual stone does not appear nearer than Achancar, some two miles distant. As the stones are estimated at eight to ten tons in weight, it is difficult to imagine how they could have been quarried out of the bed of the stream, or transported from the more distant shore, with the means at the disposal of these early people.

Adjoining these larger circles are two formed of granite blocks, the first (to the extreme right of the Plan) to the east, and the second to the south.

The east circle is 42 feet in diameter, and is represented by two stones standing about 5 feet high, with the appearance of others. Neither at the centre nor in the radius excavated was there a cist discovered. The sepulchral nature of this circle is therefore doubtful. It may possibly rather belong to a quite different category of circular settings which are seen in different parts of the island. The stones in these cases are small and irregular, and do not stand more than a few inches above the surface. Such a circle, which occurs on the hill above South Sannox, was excavated at the centre by Mr. Balfour and the writer in May 1909. A large square granite slab was laid bare, but it did not cover a cist, and there was no indication that the circle was a site of sepulture. It is impossible to say what the purpose of such circular areas, marked off by stones, may have been, and as impossible to say to what epoch they belong. They may possibly be referred to the class of domestic sites, and they may be comparatively modern.

The circle to the south is formed of four blocks of coarse-grained granite, such as are found scattered over the moor, but apparently a little shaped or flattened. They stand about 3 feet high, and are placed nearly at the cardinal points, though they are not equidistant; the figure is not

quite a circle, but is rather elliptical, the long axis, which is about 21 feet, lying north and south.

A cist was found in the centre, 3 feet 4 inches below the surface, covered by a slab 4 feet 6 inches long, 3 feet broad at one end and 2 feet at the other, and 6 inches thick. The



TEXT-FIG. 58.—Urn from Cist within Stone Circle on Machrie Moor, 6½ inches high. (S. A.)

length of the cist was 3 feet, the breadth 1 foot 4 inches, and the depth 2 feet; the long axis lay N.N.E. and S.S.W. The cist was neatly constructed. An urn in fragments lay in one corner, and under it were some fragments of bone. Three flakes of flint were found on the floor, and also a pin of bronze. The urn (Text-fig. 58) is 6½ inches high, and is of the same shape as that found in circle No. 2, but it is

less richly ornamented. The lower part is plain; the upper part has two mouldings decorated with largish irregular impressions, and bands of string markings. The outer part of the lip shows the same impressions as the mouldings, and the inner edge is impressed by two lines of linear markings.

The bronze pin is 2½ inches long, and appears to be the pin of a brooch.

West of this single granite circle, upon higher ground free of peat, and immediately to the south of the farmhouse, is the celebrated double circle of granite blocks known popularly as *Fingal's Cauldron Seat*. The inner ring consists of eight and the outer of fourteen blocks. The diameter



FIG. 41.—Stone Circle at Achangallon.

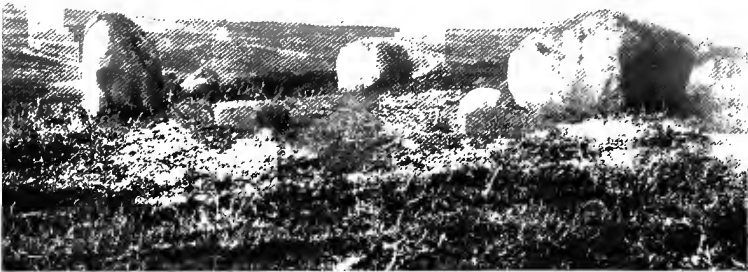


FIG. 42.—Stone Circle at summit of Brodick and Lamlash Road.

of the inner circle is 36 feet and of the outer 57 feet. The largest stones are in the inner series; they are more or less round-topped blocks, about 4 feet high. One of the stones of the outer ring has a ledge which is perforated by a round hole, with the edges worn smooth.

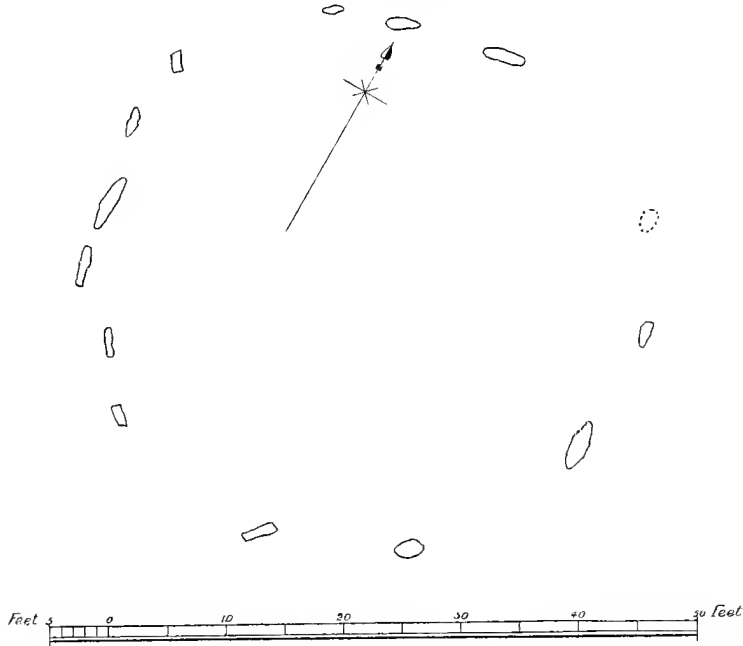
In the centre of the inner ring, only a foot from the surface, a ruined cist was laid bare. It had been previously disturbed, and was represented by two stones only, lying parallel to one another. There was no capstone, and no relics were discovered.

Achangallon Circle.

This magnificent circle (Plate XVIII. Fig. 41) is situated on the farm of Achangallon, on the ridge overlooking the sea. It has a diameter of 47 feet, and consists of fifteen blocks, for the most part of red sandstone, some of which are of large size. The area within the ring of stones is now entirely filled by small rounded stones, so that the monument has the appearance of an encircled cairn. Mr. Archibald Sim, who has lived a long life in the near neighbourhood, informed us, however, that in his youth the enclosed area was flat and free of stones. The ground is cultivated all round the circle, and the stones gathered from the fields have been piled year after year within it, until now a number of the upright stones are actually hidden below them. Mr. Sim also told us that he remembered well seeing the circle excavated at the centre many years ago. A stone cist, he said, was exposed and opened, but he could give us no information about its contents. In these circumstances, and considering the great recent elevation of the surface, a projected attempt to explore the circle was abandoned.

The annexed photograph shows the situation and appear-

ance of the monument, and the Plan (Text-fig. 59) shows the general arrangement of the stones.



ANGUS McALISTER C. E.

TEXT-FIG. 59.—Stone Circle at Achangallon : Ground Plan.

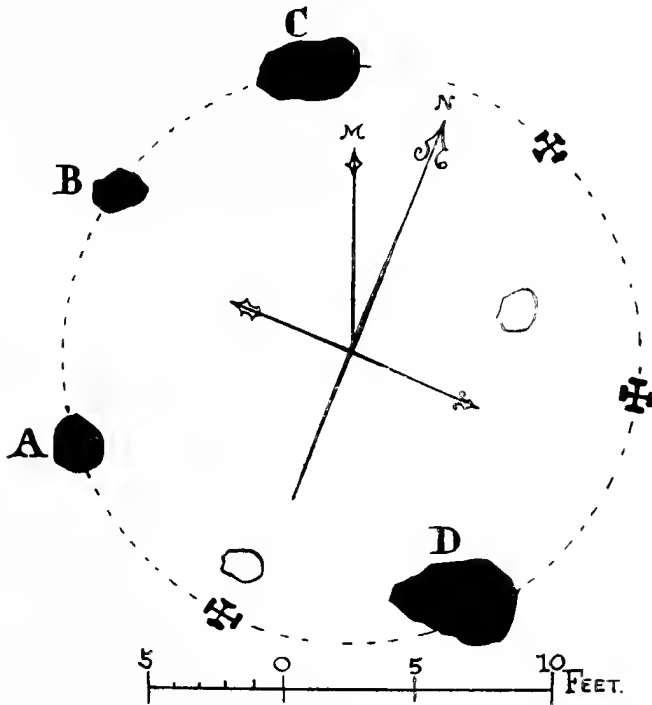
The information supplied by the Plan may be supplemented by giving the Dimensions of the individual Blocks.

	Height.	Breadth.	Thickness.
1 . . .	4 feet 0 inches	2 feet 6 inches	1 foot 10 inches
2 . . .	3 " 0 "	2 " 7 "	1 " 0 "
3 . . .	7 " 8 "	2 " 8 "	1 " 4 "
4 . . .	6 " 0 "	4 " 10 "	1 " 3 "
5 . . .	5 " 6 "	3 " 0 "	1 " 2 "
6 . . .	3 " 0 "	1 " 6 "	0 " 10 "
7 . . .	2 " 6 "	2 " 9 "	0 " 10 "
8 . . .	3 " 10 "	2 " 4 "	1 " 6 "
9 . . .	3 " 0 "	3 " 5 "	0 " 6 "
10 . . .	fallen	...	...
11 . . .	broken at surface	2 " 0 "	0 " 9 "
12 . . .	3 feet 10 inches	?	1 " 0 "
13 . . .	buried	...	...
14 . . .	buried	...	...
15 . . .	3 feet 6 inches	2 " 7 "	1 " 0 "

Circle at the Summit of Lamdash Road.

This circle stands on an elevation on the moor to the left of the road going south, 371 feet above the sea. The site commands the whole sweep of country to the great Goatfell range (Plate XVIII. Fig. 42).

It consists of four massive round-topped granite blocks enclosing a circular arc of 17 feet in diameter (Text-fig. 60).



TEXT-FIG. 60.—Stone Circle, summit Brodick and Lamdash road:
Ground Plan. (Fred. R. Coles.) (S. A.)

The blocks are disposed N.W., W., S.W., and S.E., and measure—the north-west, 2 feet 10 inches; the west, 1 foot 8 inches; the south-west, 3 feet 10 inches; and the south

east, 2 feet 9 inches in height. In the centre is a flag which covers a cist, measuring 26 inches long, 11 inches wide, and $10\frac{1}{2}$ inches deep, rudely cut on the solid sandstone rock.

This cist was opened in 1861 by Dr. James Bryce, and was found to contain black earth and fragments of bone, apparently burnt. In the soil above the cist a few flint flakes and a flint implement were picked up, but there were no relics in the enclosure itself.

Twenty-two yards south of the circle there is a solitary standing stone of conglomerate, which measures 3 feet 7 inches by 2 feet 8 inches, and stands 4 feet 5 inches above the present surface of the moor. Dr. Bryce excavated on both sides of the base of this stone, but discovered nothing to indicate its purpose.

Circle and Cist at Drumadoon.

This monument stands on the farm of that name, under a ridge that runs up from the sea (Plate XIX. Fig. 43).

Seven feet west of the cist, which is directed N. and S., is a low standing stone rising 2 feet above the ground—2 feet 11 inches broad and 1 foot 1 inch to 1 foot 5 inches thick. Lying prone close to this is another somewhat pointed stone, 6 feet 8 inches in length and 4 feet broad at its base, while to the north three stones of the same general character, but not quite so long, lie upon one another. These several stones I take to be the survivors of a circle of standing stones of which there is mention in the *New Statistical Account*, in a description which I understand to refer to this cist and circle. In 1845, the date of that work, there were 'several vertical stones standing round the cist.' The same publication gives an account of the finding of an urn containing ashes, which was carried off by those who were engaged in the operation.



FIG. 43.—Cist and Circle at Drumadoon. (S. A.)



FIG. 44.—Small Circle above Achaleffen, Kilmorie Water. (S. A.)

The capstone now lies exposed. It is a very large, irregular flag, 8 feet 6 inches in its longest diameter and 7 feet across, and is 12 inches thick at one side, 6 at the other. Its weight must be at least three tons. It rests somewhat displaced on the lateral stones of the cist, which is approximately 3 feet square, but as the west and north stones are displaced, it is not possible to determine its dimensions exactly. The west side has a long thick slab, 5 feet 6 inches in length, 10 inches in thickness, and 3 feet in depth; while the east side is built of two stones, 3 feet in length, set one above the other. The south end is completed by a slab 3 feet long, set at right angles to the west stone, 2 feet within its free end. The north stone measures 2 feet 6 inches, but has been displaced, and now lies obliquely.

The cist had been roughly filled with stones by the previous exploring party. In the soil round it a number of pieces of wood charcoal were picked up, and there were patches of brick-red earth, which may have been burned. The cist was opened up again in July 1901 by the present writer, but no relics were recovered.

It may be noted that in the large size of the capstone, in the irregularity of its construction, and large dimensions, it differs somewhat from the cists exposed in the circles on Machrie Moor.

Circle at Achaleffen, Kilmorie Water.

On the moor above the farmhouse of Achaleffen, five miles up the Kilmorie Water from Lag, there is a perfect little circle (Plate XIX. Fig. 44), consisting of four stones set exactly in the cardinal points of the compass. It may be described here as an example of several circles, noted in the Inventory, which show the same character. The stones are fairly regular, rectangular pillars of granite. The north stone is 3 feet 6 inches broad, 1 foot 10 inches thick, and stands

3 feet 8 inches above the ground ; the south stone is smaller, 2 feet broad (14 inches thick) and 2 feet 6 inches high ; the west stone is 2 feet broad, 1 foot 4 inches thick, and 3 feet 6 inches above the ground ; the east stone is 2 feet 4 inches broad, 1 foot 7 inches thick, and stands 3 feet 4 inches above the ground. The area bounded by the standing stones is 16 feet in diameter.

The circle was examined in July 1902. A hole sunk in the central point down to the hard undisturbed till revealed no sign of a central cist. Four trenches were then cut from the central excavation to the bases of the pillars, but absolutely nothing was revealed. The soil was loose, and easily dug for 2 or 3 feet deep, but below that it was very hard to move the subsoil, which had obviously never been disturbed. Our trenches were fully a foot deeper than the bases of the stones, which were embedded to the depth of about 2 feet, so that their whole height was approximately 5 feet. If this circle be not sepulchral, it is exceptional to the rule in Arran. There are no other stones in the neighbourhood to indicate that it belonged to some larger structure.

MONOLITHS.

There are numerous single standing stones in every part of the island. A certain number of them have no doubt been members of a larger setting, but it is now no longer possible to distinguish such from true monoliths.

We have already noticed two single standing stones in association with the chambered cairns at Moinechoill and Dùnan Beag. The stone at Moinechoill has certainly no primary relationship to the cairn, and it is possible it may have been part of a circle. The stone at Dùnan Beag is probably a true monolith, seeing that burnt bones and ashes were found at its base. That it has any original association with the cairn is not probable.



FIG. 45.—Standing Stone, Achencar.

Perhaps the most impressive of the monoliths is that at Achancar (Plate xx. Fig. 45). It stands on the level ground south-west of the farmhouse, and rises 15 feet 7 inches above the present surface. It is 5 feet 9 inches broad, 1 foot 4 inches thick, and tapers to a point at the summit. If we suppose that one-third of its total length is underground, the great slab would measure 21 feet in length. A very similar block lies 14 feet to the south, on its face. It has been broken into three pieces, and is quite certainly a fallen pillar. It measures in total length 27 feet, is 5 feet 6 inches broad at the base, and tapers at its apex like the erect stone. The faces of the standing stone look nearly east and west, and the length of the fallen pillar lies so that both must have had their broad axis in much the same line. Were the standing pillar to fall in the same direction as the recumbent one, their apices would be closer together than their bases. The conclusion seems warranted that they are survivors of a large setting, probably circular.

The other standing stones vary greatly in size. Of the smaller ones, that at Kildonan, measuring 3 feet 7 inches high, 3 feet 6 inches broad, and 6 inches thick, is the remains of a circle which is known to have existed at one time; it was removed in making the road which cut through the site.

The pillar at Stronach, which stands by the roadside, is the best-known example of a monolith in Arran. It is a flag of red sandstone, measuring 9 feet 8 inches in height, 5 feet in width, and 1 foot 11 inches thick, and its faces look N.E. and S.W. (60° north).

There is no constant orientation of the several standing stones, the faces looking sometimes north and south, sometimes east and west. A full list is given in the Inventory at the end of this chapter, where details of measurement and orientation will be found.

SUMMARY AND ANALYSIS OF SHORT CIST CULTURE.

1. *Structural Features.*—When we consider all the data yielded by these examples of short cist interment, the first thing which strikes us is the uniformity of the underground characters, and the diversity of the overground monument. Whether the cist be placed in tumulus or cairn, within the area of a circle of standing stones or under the surface without any overground structure to mark the spot, the characters of the cist and of its contents show no variation. In other words, there is nothing to distinguish a short cist interment within a circle from that within a cairn or tumulus. What underlies the very essential differences in overground monument wholly escapes the inquirer.

2. *Implements and Ornaments.*—From the character of the implements recovered we may certainly conclude that while flint was still extensively used, the short cist people had acquired a knowledge of bronze before they reached Arran. In the Blackwaterfoot dagger we have an example of their work in this material.

The jet beads which have been described are very distinctive of the Short Cist Culture, and represent two types of necklace; the one formed of graduated discs strung on a single string, the other of elongated oval beads strung in several rows with terminal and intermediate plates.

Short cist interment, it is known, persisted in Scotland into the early Iron Age; for example, a cist discovered in 1904 at Moredun, Midlothian,¹ and explored by Mr. F. R. Coles, yielded, beside two bodies interred in the contracted posture, a fibula of iron, a ring brooch, and pin-head of the same metal. The fibula is of La Tene² type, and from con-

¹ *Proc. Soc. Antiq. Scot.*, vol. xxxviii. p. 437.

² *Oppidum La Tene*, a continental centre of dispersion of Iron Age culture later than that of Hallstatt, which represents the earliest phase of knowledge of iron, or transition from bronze to iron, in Europe.

comitant evidences it would appear that the burial cannot have been earlier than the second century of our era.

The Short Cist Culture, as we see it in Arran, is, however, certainly long prior to the spread northwards of a knowledge of iron, though it is not the earliest manifestation of the Bronze Culture.

3. *The Ceramic*.—The vessels of pottery are all very much alike. They belong to the so-called 'food-vessel' type, and in shape and decoration they are very distinctive (Text-fig. 61). At no site in Arran or Bute has an urn of the



TEXT-FIG. 61.—Urn of food-vessel class from Cist within the area of a Stone Circle, Tormore. For comparison with Fig. 62. (S. A.)

'beaker' or 'drinking-cup' type turned up in a short cist. The beaker ceramic is found with unburnt bodies and the earlier type of Bronze Age relics. It has been shown, by the Hon. John Abercromby,¹ that the centre of dispersion of the

¹ *Jour. Anthropol. Institute*, vol. xxxii. p. 375; and *Proc. Soc. Antiq. Scot.*, vol. xxxviii. p. 323, and vol. xxxix. p. 326.

beaker was in Central Europe, whence it spread northwards to Britain contemporaneously with, possibly shortly before, bronze. The original name of drinking-cup was given to it on account of its shape, but Mr. Abercromby's term of beaker is more distinctive. It is (Text-fig. 62) a tall and relatively



TEXT-FIG. 62.—A typical Beaker Urn. (S. A.)

narrow vessel ; the body swells somewhat above the middle, and narrows again at the neck ; this again widens out to the mouth, which is bounded by a thin lip. The ornamentation is nearly always zonular, bands of different patterns alternating round the body of the vessel ; characteristic motives are chevrons, triangles, single or double, forming lozenges and so forth. While many beaker urns have been found in the eastern parts, more especially the north-eastern counties,

of Scotland, very few have been recovered on the west coast, and they are still rarer in Ireland. This distribution is strongly in favour of the thesis that the beaker came by way of the east coast, just as one would expect if Mr. Abercromby be correct in tracing it to Central Europe as a centre of dispersion.

The 'food-vessel' type of urn, of which we have described a number of examples, is not an imported, but a native type of pottery. It seems to have evolved *in situ* as it were, and to have followed the beaker, though such a statement must not be taken too literally, as no doubt there was overlapping. The food vessel is found, as our examples show, associated both with burnt and unburnt interments, and it is very widely and uniformly distributed.

4. *Character of the Interment.*—This varies, as we have seen, in the short cists, and there is no key to the reasons for the variation. Burnt and unburnt bones occur in cists in which the other factors are identical in every respect, there being no difference either in relics or ceramic. The sole point which emerges, if we take into consideration the country as a whole, is that the beaker urn is normally associated with an inhumed body. If it be the earliest type of Bronze Age ceramic, then we may consider that the practice of cremation gradually became more prevalent as time went on. In the first instance, the burnt remains were placed in cists identical with those in which the bodies were placed without being cremated, but later the use of the cinerary urn in place of the cist was adopted.

CINERARY URN INTERMENTS.

We have three instances on record, known to the writer, of the occurrence of cinerary urn burial in Arran. At Balmichael, Shisken, in 1863, an urn was found which is preserved in the National Museum of Antiquities (Plate XXI.

Fig. 46). The site is marked on the six-inch Ordnance map on an elevation opposite the farmhouse of Balmichael. The urn contained, besides ashes, calcined oval-shaped flakes of flint, which showed a pure white fracture, and appeared to have been burnt with the body. The urn is a large cinerary urn of the usual type, with a broad projecting band or lip round the mouth, but is, however, entirely without ornament. It stands 12 inches high, and measures 4 inches at the base and 11 inches at the mouth.

The second cinerary urn, shown on Plate XXI. Fig. 47B, was found on Dippen farm in 1875. It contained calcined bones, but there do not appear to have been any other relics. The urn measures $11\frac{1}{4}$ inches high, $9\frac{1}{2}$ inches at its mouth, and 5 inches at its base. Like the last it has only one moulding, marking off the body from the shoulder.

The third example (Plate XXI. Fig. 47A) is a larger vessel. It was found in 1907 on the farm of Bellvue, Shisken, by Mr. Samuel Robertson, and is now preserved, like the last, in the Museum of the Corporation of Glasgow. It measures $13\frac{1}{4}$ inches high, is $12\frac{1}{2}$ inches at the mouth, and $7\frac{1}{8}$ inches at the base. It has three mouldings, one forming the shoulder and two subsidiary round the body of the vessel.

5. *Physical Characters of the Short Cist Builders.*—Only two very imperfect skeletons have been found in short cists in Arran. Two others, even more defective, recovered in Bute, added to these, make a small group which furnishes evidence to show that the physical characters of the people who introduced short cist interment were, in some respects, different from those of the chambered cairn builders. The long bones were broken in every case, so that we cannot make any deductions regarding the stature of the people. The skulls, though only represented by fragments, all showed the characters of skulls in which the breadth bears a high proportion to the length—in short, they were brachycephalic.¹

¹ See note, p. 96.



FIG. 46.—Cinerary Urn found at Balmichael, Shisken, 12 inches high.



FIG. 47.—Cinerary Urns, Kelvingrove Museum, Glasgow.

(A) Found Kilpatrick. (B) Found Dippen. (C) Calcined Bones from Dippen Urn.

(Photo by Mr. J. MacNaught Campbell.)

The specimen from the circle on Machrie Moor belongs very obviously to this class (Plate xxii. Fig. 50). In respect of this feature the skulls agree with the majority of skulls recovered in short cists in Scotland generally, though dolichocephalic crania also occur. There is no question that this skull form appears first in the Bronze Age associated with the Short Cist Culture, and the conclusion is forced on the anthropologist, who regards skull form as a specific character, that a new immigrant race appeared in Scotland at this time. Admixture with skulls of dolichocephalic proportions may indicate either that the skull form of the new race was not uniform, but only predominatingly brachycephalic, or that there was a fusion of the new race with the earlier dolichocephalic inhabitants.

It has been already explained that the beaker urn is the earliest type of Bronze Age ceramic, and that it is an imported, not a native type. Now, if it were brought by a new race practising the new culture, one would expect to find that remains associated with the beaker urns represented the race in its purity, before any great admixture with the earlier occupants of the land had taken place. An examination of sixteen recorded cases of skulls associated with beakers fulfils this expectation (see Table, pp. 132, 133). The number is no doubt small compared with the number of beaker urns recorded, but it is comparatively rare to find the bones sufficiently well preserved to give the necessary data. The fact that in every one of the instances the skull has marked brachycephalic proportions is of great significance, and goes a long way towards establishing the thesis that a new and pure race appeared in Scotland at the beginning of its Bronze Age, bringing with them the beaker urn and a new form of culture.

In stature these new people do not appear to have greatly exceeded the earlier Iberian settlers, and in complexion they were probably dark, like them.

SKULLS FOUND WITH BEAKER URNS IN SCOTLAND.	1	2	3	4	5	6
	Acharole, Caithness.	Dun- robin, Suther- land.	Les- murdie, Banff.	Juniper Green, Mid- lothian.	Parkhill, (A) Aberdeen- shire.	Parkhill, (B) Aberdeen- shire.
	Described by T. H. Bryce.	T. H. Bryce.	Cran. Brit. & T. H. B.	Cran. Brit. & T. H. B.	A. Low.	A. Low.
Sex	M.	F.	M.	M.	M.	M.
Cubic capacity	1425	1540	...	...	1450	...
Glabella-occipital length	176	178	185·4	178	180	183
Ophryo-occipital length	172	178	183	176	178	180
Basi-bregmatic height	138	132	132	131	135	148 ap.
<i>Length-height index</i>	78·2	74·7	71·2	73·6	75	80·9
Minimum frontal diameter	94	99	...	...	102	...
Stephanic diameter	125	125	...	...	115	...
Asterionic diameter . . . . .	...	111	119	110	137	...
Maximum breadth	151	146	157·4	147·3	153	160 ap.
<i>Cephalic index</i>	85·8	82	85	82	85	87·4
<i>Breadth-height index</i>	91·4	97·9	83·8	88·8	88·2	92·5
Horizontal circumference	512	518	546·1	515·6	524	...
Vertical transverse arc	314	325	...	...	327	...
Biauricular diameter	135	123	130	127	131	...
<i>Longitu- dinal arc.</i> { Frontal segment	128	132	133	128	135	132
Parietal segment	120	118	123	124	125	118
Occipital segment	113	120	115	116	100	...
Total	361	370	371·0	368·1	360	...
Base line	134	138	139	129	137	...
Proportion of vault to base	2·69	2·71	2·66	2·85	2·62	...
Length of foramen magnum	35	38·5	38·4	33	36	...
Basi-nasal length	101	99	101	96	104	100 ap.
Basi-alveolar length	91	95	97	90	98	92
<i>Gnathic index</i>	90	96·9	96	93·7	94·2	92
Interzygomatic breadth	146 ap.	...	...	...	142	...
Intermalar breadth	131 ap.	111	...	...	115	...
Nasio-mental length	112	105	113	116·8	108	122
Nasio-alveolar length	70	63	65	70	64	80
<i>Complete facial index</i>	76·7 ap.	...	...	...	76	...
<i>Upper facial index</i>	47·9	...	...	...	45	53·9
Nasal height	49	45	50	56	48	53 ap.
Nasal width	25	24 ap.	24	19	23	25
<i>Nasal index</i>	52	52	48	34	47·9	47·2
Orbital width	37	39	43	40	41	...
Orbital height	32	35·5	34	32	33	...
<i>Orbital index</i>	86·5	91	79	80	80·5	...
Palato-maxillary length	50	...	52	55	51	56
Palato-maxillary breadth	57	...	68	58	55	64
<i>Palatal index</i>	114	...	130·7	105·4	107·4	114·2
<i>Measurements of Lower Jaw.</i> { Symphysial height	34	27	30	31	30	...
Coronoid "	68·5	48	55	61	59	...
Condylod "	70	...	...	73	58	...
Gonio-symphysial length	90	...	96	95	90	...
Condyllo-symphysial length	97 ap.	...	...	...	108	...
Bicondylod width	133 ap.	...	...	...	127	...
Bigonial width . . . . .	...	...	...	...	101	...
Condyllo-coronoid width	44·5	...	...	45	44	...
Breadth of ascending ramus	34	31	36	37	37	...
<i>Mandibular index</i>	72·9 ap.	...	...	...	85	...
<i>Coronoid index</i>	40 ap.	...	...	...	40·7	...

THE SEPULCHRAL REMAINS

7 Stoney- wood, Aberdeen- shire. A. Low.	8 Auchen- doir, Aberdeen- shire. A. Low.	9 Clin- terty, Aberdeen- shire. A. Low.	10 Persley, Aberdeen- shire. A. Low.	11 White- stone, Aberdeen- shire. A. Low.	12 Leslie, Aberdeen- shire. R. W. Reid & A. Low.	13 Fyrish, Ross. Sir W. Turner.	14 Duns. Sir W. Turner.	15 Largs. D. J. Cunning- ham.
M.	M.	M.	M.	M.	M.	M.	M.	
1420 ap.	1350 ap.	...	1500 ap.	1450 ap.	1460	1605	...	...
169	167	185	188	181	177	185·4	165	175 ap.
169	162	182	184	175	177	...	...	...
133	136	138	146	135	136	132	...	138 ap.
78·7	81·4	74·6	77·7	74·5	76·8	71	...	78·8 ap.
100	91	102	100	112 ap.	100	...	...	...
120 ap.	108	120 ap.	136 ap.	110 ap.	126	121·9	...	...
110	113	115	120 ap.	...	113	104·1	...	...
156 ap.	142	156 ap.	160 ap.	156 ap.	154	149·8	...	148 ap.
92·3	85	84·3	85·1	86·1	87	80·8	80	84·6 ap.
85·2	95·7	88·4	91·2	86·5	88·3	88	...	95·1 ap.
510 ap.	494	528	540	512 ap.	522	541	495·3	...
300	306	336 ap.	336 ap.	324	332	...	...	...
124	128	130 ap.	130 ap.	136 ap.	124	...	...	...
128	123	143	132	130	130	127	127	...
120	120	140	148	132	132	132	116·8	...
111	...	110	117	113 ap.	124	127	106·7	...
359	...	393	397	375	386	386	350·5	...
131	...	138	135	137	127	...	...	...
2·74	...	2·84	2·04	2·7	3·	...	...	...
37	...	37	38	36	29	...	...	...
95	100	98	96	100	98	...	...	...
87	97	...	87	101	96	...	...	...
91·6	97	...	90·6	101	97·9	...	...	...
126 ap.	136	...	140	134 ap.	132 ap.	...	...	...
114 ap.	114	...	110	120 ap.	...	...	...	...
107	108	...	110	119	108	...	...	...
64	67	...	67	72	64	...	...	...
84·9	79·4	...	78·5	88·7	81·8	...	...	...
...	49·2	...	47·8	53·7	48·4	...	...	...
48	50	55	48	51	48	...	...	...
25	24	28	25	26	26	...	...	...
52·1	48	50·9	52·1	50·9	54·1	...	...	...
40	40	...	44	41	40	...	...	...
30	31	...	32	32	30	...	...	...
75	77·5	...	72·7	78	75	...	...	...
51	55	...	52	58	48	...	...	...
61	66	...	56	63	64	...	...	...
119·6	120	...	107·6	108·6	133·3	...	...	...
28	31	30	30	33	29	...	...	...
50	60	63	63	63	...	...	...	...
48	59	64	54	...	62	...	...	...
83	98	90	91	74	70 ap.	...	...	...
112	106	106	98	...	102	...	...	...
113	121	110 ap.	123	...	114 ap.	...	...	...
96	112	...	107	...	86 ap.	...	...	...
59	44	43	38	...	...	...	...	...
33	37	36	33	33	33	...	...	...
99·1	87·6	96·3	79·6	...	...	...	...	...
34·8	41·5	40·5	38·7	...	...	...	...	...

The skull form is very distinctive (Plate xxii. Figs. 48, 49, 52). The internal capacity is moderate. The arch of the vault is relatively high, and the occipital region is flat and vertical. Looked at from above, the outline is broadly oval or sphenoidal, and the breadth is over eighty per cent. of the length. The great relative breadth, the height, and the broad, flat, and vertical posterior wall are the most noteworthy characters. The brow ridges are sometimes, but by no means always, prominent. The face is relatively low, the shape being more or less quadrate, the cheek bones are not salient, and the jaws are vertical. The nose is relatively short and broad. The shape of the head and the characters of the face must have given these people a quite different appearance from that of the chamber folk (Plate xxii. Figs. 51 and 52).

When we were considering the physical characters of the chamber builders, it was pointed out that they were a branch of a stock represented south of the Tweed by the 'Long Barrow' people. Our short cist builders corresponded to the 'Round Barrow' people of England. The old aphorism of Thurnam: 'Long barrows long skulls, round barrows round skulls,' becomes in Scotland, 'Long cairns long skulls, short cists short skulls.' In the round barrows there is considerable admixture of skull forms, and Dr. Wm. Wright has proved that the people buried in the round barrows of East Yorkshire were a mixed dolicho- and brachycephalic race; he believes that the mixture was established on the Continent before they crossed to England. There is, however, only one type of skull among the round-barrow brachycephali, which corresponds to those found in short cists with beakers in Scotland, and it is suggestive that a large number of these were also found associated with beakers. Dr. Wright's East Yorkshiremen were probably late comers, not the earliest immigrants. Restricting, however, the argument to Scotland, let us now consider the origin



Fig. 48. (S. A.)

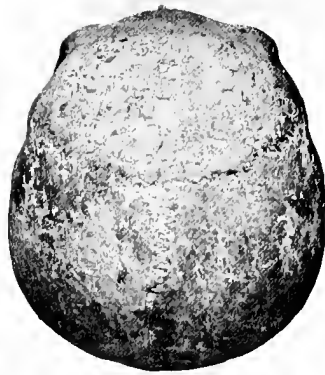


Fig. 49. (S. A.)



Fig. 50. (S. A.)



Fig. 51. (S. A.)



Fig. 52. (S. A.)

FIGS. 48 and 49.—Skull from a Cist with a Beaker Urn at Acharole, Caithness.

FIG. 50.—Skull from Cist with a Stone Circle, Tormore, Airan.

FIG. 51.—Face view of a Skull from the Clachaig Chamber.

FIG. 52.—Face view of the Acharole Skull (Figs. 48 and 49).

and distribution of the short cist builders north of the Tweed.

AFFINITIES AND ORIGIN OF THE SHORT CIST BUILDERS.

The skulls of the short cist people have certain characters which are not seen among the present inhabitants of Scotland. The nearest approach to the type is seen among the Rhaetians in the high Alps, and our specimens correspond fairly closely to the type of Swiss skull called the *Dissentis* type by His and Rüttimeyer, on account of its frequent occurrence near that place. Our beaker folk belonged to a physical type which is still represented in Central Europe, and there is little doubt that they reached our shores across the Continent and over the North Sea. Mr. Abercromby, as we have seen, has traced the beaker urn to a centre of dispersion in Central Europe, so that, as in the case of the Iberians, the arguments from skull form and from pottery lead independently to the same conclusion. It is probable that this brachycephalic stock ultimately dispersed from Asia, and Sergi has therefore named them the Eurasians to distinguish them from the other stock or Eurafricans.

Having reached our shores, they spread westwards. Their typical graves, with the beaker urns, are thickly scattered over the east of the country, but are represented in the west only by a few instances. The reason of this will appear presently, when we have shown that the Chamber Culture persisted in the west for a time in face of the Short Cist Culture; in other words, the chamber builders faced and fought the invaders of their territories. When at last we find that the short cist people had reached the west, the beaker urn had in great measure disappeared and given place to the native type of pottery known as the 'food vessel.'

The wave of broadheads seems to have spent itself in the West of Scotland and hardly touched Ireland. As

Huxley put it, the brachycephali never made themselves ethnically felt in Ireland as they did in Scotland, where Sir William Turner has proved that a distinct brachycephalic trait persists to the present time. This exists, however, more especially in the east; the west has remained more consistently dolichocephalic.

THE BLENDING OF CHAMBER CULTURE WITH SHORT CIST CULTURE IN THE CLYDE BASIN.

Having defined the characters and traced the origin of the two types of custom and culture exhibited in Arran, we shall now turn to the evidence our area provides of a blending of the one into the other.

When we meet with two structures or objects of the same general type, but one of which is simpler or ruder than the other, we are at first, perhaps, inclined to look upon the more complete or better formed as a later evolution of the original idea, but this is not always the case with the works of man. The simpler and less perfect may represent degeneration.

Now, when we consider the series of chambered cairns in the Clyde basin, we see in certain instances a departure from the plan and idea of the typical monument: with the nature and meaning of this departure we must now concern ourselves.

It is sufficiently clear that the chambered cairns preceded the monuments with short cists in Arran. The typical chambered cairn is complete in itself, and is expressive of a single structural idea—the long rectangular cairn with its frontal bay is related in definite fashion to the chamber, and this is provided with a portal. The portal means successive interments in the same vault, and this custom of multiple interment in tribal or family vaults is an

essential and fixed practice. Now, any serious departure from the general plan must signify some loosening of the fixed set of ideas involved in the typical monuments. In the Dùnan Beag Cairn, otherwise of the standard type, there is a second chamber at the south end formed of two compartments, and at the Giants' Graves there are indications of a second smaller chamber in the cairn. This departure from the plan was probably not the work of the original builders. It is more likely that it was a secondary addition to the plan by persons who thereby violated the ideas expressed by the monument as a whole, or who were so far freed from the traditional burial customs as to be content with a chamber in a cairn erected by others. While it is, of course, possible that the vessel resembling a beaker, and the jet plates, which definitely belong to the horizon of the Bronze Age, were secondarily deposited within the chamber at Dùnan Beag, the absence of any definite cist, even of a rude kind, is in favour of the view that the fictilia were those of the original builders, who had already adopted the beaker urn and necklace of their short cist neighbours. If this were so, we should have an explanation of the departure from the plan of the traditional monument, which is beginning to degenerate in contact with the new culture. This argument is strengthened by the occurrence within the same area of necklaces identical in type, in a short cist with bronze (Mountstuart cist), and in a chambered structure (Tormore chamber). No doubt the record regarding the Tormore chamber is defective, but there was no indication of a short cist at the site where the necklace was found: it was lying free within what undoubtedly is the remnant of a chamber.

The violation of the original idea of the chambered cairn is still more marked at Dùnan Mór. A nearly circular cairn has replaced the rectangular. The idea, whatever it was, expressed by the long cairn has gone, the frontal bay and its semicircle have disappeared. The chamber alone persists,

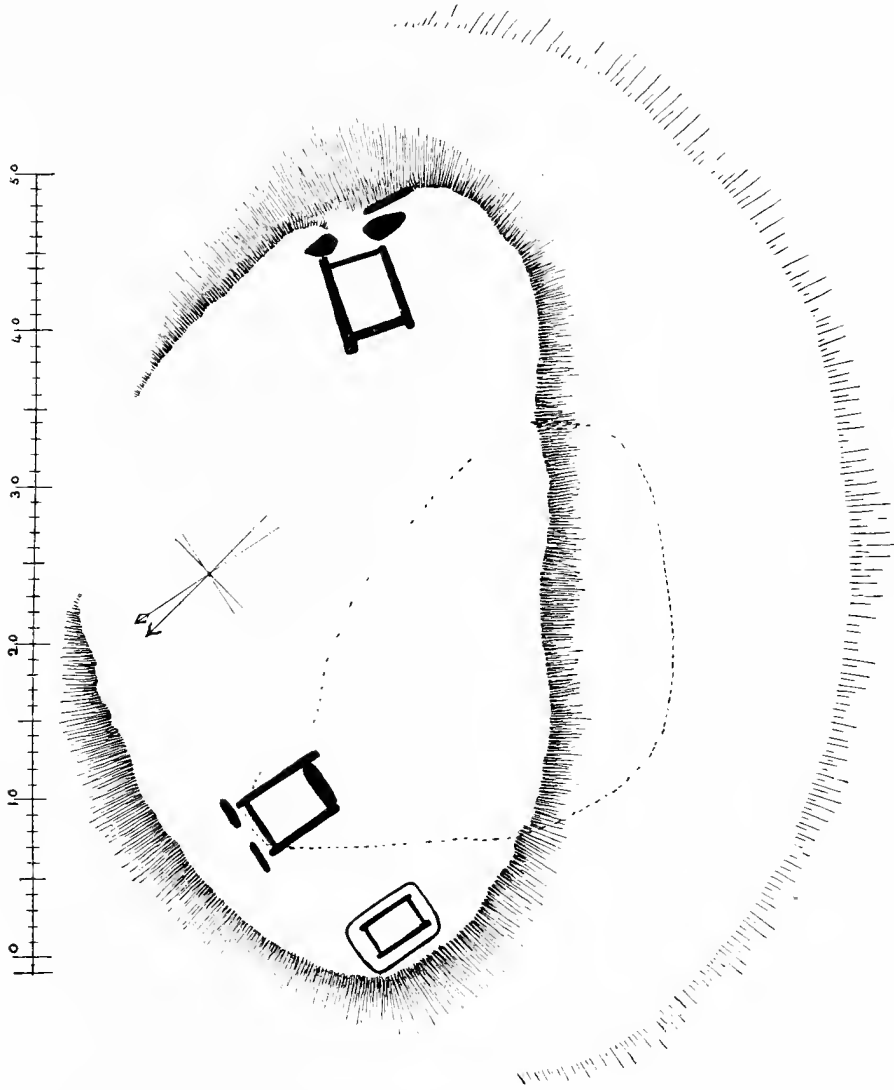
with its multiple burials, but the placing of these chambers in the cairn is further evidence of departure from tradition. The argument from structural features is strongly supported by the fact that a vessel of the food-vessel class, never before found in a chamber, replaces the typical round-bottomed pottery of the chambered cairns.

The typical chamber has three to five compartments. In various instances, such as the Tormore Chamber No. 2 in Arran, or Michael's Grave Chamber in Bute, there are two compartments only, and this contraction of the chamber seems to represent a phase of degeneration which reaches its ultimate term in the chambers in Glecknabae Cairn in Bute, or the chamber at Ardenadam on the Holy Loch.

The cairn at Glecknabae (Text-fig. 63) is nearly circular, like that at Dùnan Mór. It contained two small chambers, each of which was no more than a large cist, or, as it were, one compartment of the elongated chambers. Each was formed of four flags covered by a capstone. The flag on the fourth side was lower than the others, and formed the sill of a portal which was guarded by two upright portal stones (Plate XXIII. Fig. 53). At Ardenadam we have a beautiful example of such a structure totally denuded (Plate XXIII. Fig. 54). The capstone is still in position, and the portal stones are tall pillars about 6 feet high.

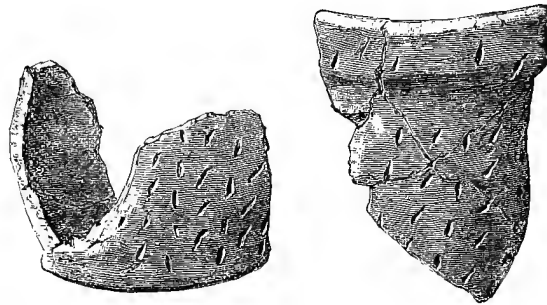
In these cases, not only have the cairn and its accessories disappeared in their typical form, but the chamber has now approximated to the short cist, with this difference, that while the short cist is closed on all sides, and is the grave of a single individual, the small chamber has retained its portal of entrance—in short, the custom of multiple and successive interments is all that is left distinctive of the Chambered Cairn Culture.

The argument from structural features, cogent as it is, cannot be taken by itself as decisive proof of a degeneration of the chamber in presence of the intrusive short cist custom



TEXT-FIG. 63.—Plan of Cairn at Glecknabae, Bute. (S. A.)

and culture. We have crucial evidence in the characters of the ceramic. We have seen that both at Dùnan Beag and Dùnan Mór the evidence of the pottery found in the suspect chambers indicated contact with the later culture, while at Dùnan Beag and Tormore chambers the necklaces of jet pointed to the same conclusion. At Glecknabae an even more striking proof of juxtaposition was obtained. In one of the small chambers typical examples of chamber cairn pottery were found (Plate XIII. Fig. 29); but in the other, fragments of a thin red ware were recovered which turned out to be vessels of the beaker type (Text-fig. 64). The



TEXT-FIG. 64.—Urn from chamber at north-west corner Glecknabae Cairn. (Scale, $\frac{3}{8}$.) (S. A.)

fact that there was more than one beaker, together with the comparative rudeness of the workmanship, and the uncommon character of the ornamentation, excludes the possibility that they could have belonged to a secondary interment. They differ in the scheme and execution of the ornament from the beaker urn found in the Largie chamber: it was a typical example of its class, and possibly belonged to a short cist interment discovered in the floor of the chamber, and placed there as a secondary interment.

When we consider all the factors in the argument, we have as decisive a proof as such data are capable of providing, that the two forms of culture met in the Clyde estuary, and



Fig. 53. (S. A.)



Fig. 54. (S. A.)

FIG. 53.—View of small Chamber at South end of Glecknabae Cairn, Bute.

FIG. 54.—View of small Chamber at Ardenadam.

that the Chamber Culture degenerated in face of the Cist Culture. A certain length of time must have elapsed during which the transition took place, and as the process was one of absorption, not sudden displacement, so also, in all probability, the two races practising the two types of custom and culture became a mixed community. At the same time, although it was the Chamber Culture which was absorbed by the Cist Culture, it is probable that the short cist people were absorbed into the earlier population. As an ethnic factor, the broadheads have left very little trace of their presence. The dominant type in the later population of Bute and Argyll has always been dark and dolichocephalic. This type was, of course, strongly reinforced from Ireland, but the district has remained, in the main, true to the characters of the earlier settlement.

INVENTORY OF SEPULCHRAL MONUMENTS.

I. CHAMBERED CAIRNS.

1. *Càrn Bàn*.—Situated at head of Kilmorie Water, on the east bank high above the stream, 900 feet above the sea. The cairn is 100 feet long by 60 feet broad, the long axis being oriented W.N.W. and E.S.E. At the eastern end is a frontal bay 30 feet in diameter, bounded by a semicircular setting of flags; two of these in the centre form a portal of entrance into a chamber, of which the roof was removed during excavation in 1902. The chamber has four compartments; the basal megalithic section and built section are entire, but it is now filled up to the level of the surface of the cairn.

2. *East Bennan Cairn*.—Situated on the Struithe Burn, on an elevated ridge lying athwart the valley, about one-eighth of a mile from the sea. The cairn, of which the base only remains, crowns the ridge, and is about 100 feet long and 63 feet

broad ; the long axis is oriented W.N.W. and E.S.E. It is quarried along the south edge, and the surface stones are all removed. The frontal semicircle, and stones bounding the horns of the cairn, stand denuded. The portal stones are placed close together, leaving a gap of 10 inches only. The chamber has lost its roof and upper-built section and end stone ; there are five compartments, which are filled to the upper edges of the large lateral slabs.

3. *Giants' Graves, Whiting Bay.*—Situated on a hill to south of Whiting Bay, 400 feet above the sea. The cairn has been quarried till the base alone remains ; it measures 98 feet by 60 feet, the long axis being oriented N.N.E. and S.S.W. The chamber is denuded ; there is a portal, but traces only of a frontal semicircle and of a setting marking the horns of the cairn. The basal megalithic section of the chamber only survives ; a huge roofing stone leans against the west wall. The end stone is absent, and there are no transverse slabs dividing the vault into compartments. There is a rifled cist near the south end of the cairn, which is probably part of a secondary chamber ; 60 feet south from its edge is a small cairn measuring 40 feet by 32 feet, containing an open cist 8 feet long by 2 feet broad, formed by several flags placed vertically.

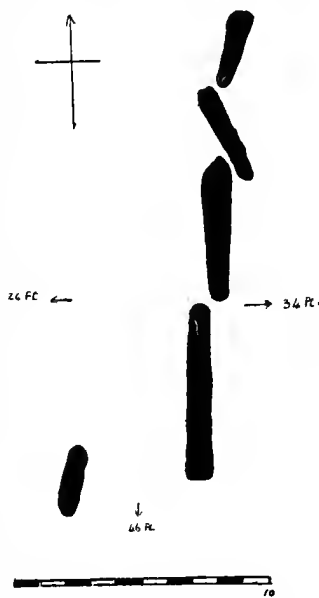
4. *Clachaig Limekiln Cairn.*—Situated on the old sea-beach on the farm of Clachaig, west of the mouth of the Kilmorie Water. The cairn is partially quarried, and covered with grass appears as an oval flat-topped mound, 8 to 10 feet high, 80 feet long, and somewhat less across. The long axis is oriented N.N.W. and S.S.E. At the north end the edges of slabs of sandstone appear above the grass. These are the side stones of a chamber of two compartments, measuring 10 feet long, $4\frac{1}{2}$ feet broad, and 8 feet deep, formed of slabs rising the whole height of the wall. South of the chamber is a short cist placed in the cairn as a secondary interment.

5. *Torlin Cairn.*—Situated at the mouth of Kilmorie

Water, on the east bank of the stream, on the farm of Torlin. The cairn, which is grass-covered, is represented by a remnant 70 feet long and about the same broad ; it has been quarried extensively on the north. The quarried end exposes the remains of a chamber of four compartments, with its long axis lying N. and S., which has lost its roof, portal, and end stone. There is no trace of a frontal semicircle. The surviving stones of the chamber, and the subdividing slabs, stand with their upper edges above the present surface of the cairn.

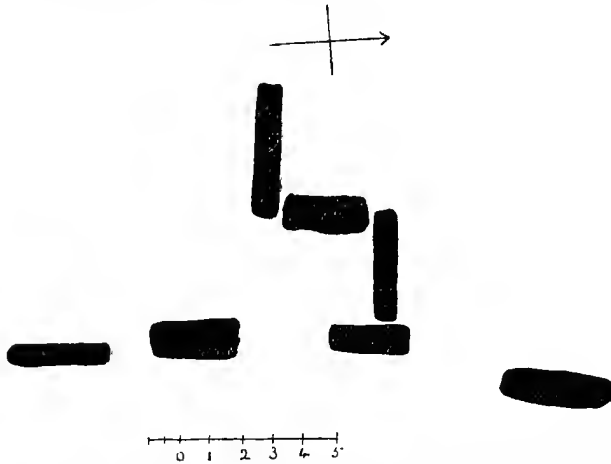
6. *Slidderie Chamber*.—Situating on the right bank of the Slidderie Water, three-quarters of a mile above the bridge which carries the coast road over the stream. The cairn is now represented by a small heap of stones 16 feet across. Three pairs of irregular flags show above the surface. They are the lateral flags, set on edge, which form the basal megalithic portion of a chamber of three compartments measuring 14 feet long, which has lost its roof and end stone. The long axis lies N. and S. A single portal stone stands at the north end, and some feet from it is another stone, the possible survivor of a frontal semicircle.

7. *Dippen Cairn*.—Situating on the hill above Dippen, a short distance from the coast road. The cairn now consists of a heap of stones 46 feet by 60 feet. It has been quarried, more especially in its long axis. The chamber is ruined, and has lost its roof and portal ; the east wall alone remains, and consists of four large slabs of schist set on edge in a line from N. to S. (Text-fig. 65). There is no trace of any accessory structures.



TEXT-FIG. 65.—Plan of Ruined Chamber, Dippen. (S. A.)

8. *Baile Meadhonach Chamber*.—Situated in the valley of the Baile Meadhonach Burn, on the left bank of the Loch Burn, a small stream running out of Garbad Loch. There is a remnant of the base of a cairn 31 feet by 25 feet, covered with heather, out of which project a number of slabs on edge. The annexed Plan (Text-fig. 66), which shows the disposition of these stones, will make it clear that they represent the remains of a chamber, with a portal and frontal semicircle.



TEXT-FIG. 66.—Plan of Ruined Chamber and portion of Frontal Semicircle, Baile Meadhonach. (S. A.)

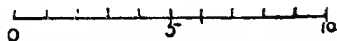
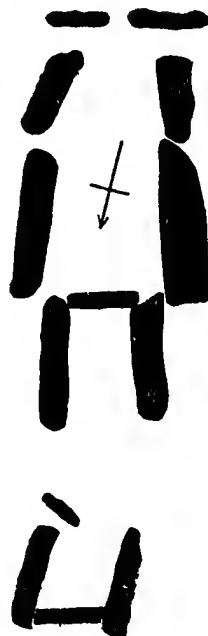
9. *Tormore Chamber No. 1, Shisken*.—Situated at the south end of Machrie Moor, close to the march between the farms of Tormore and Torbeg. There is no trace of a cairn or frontal semicircle. The chamber is quite denuded, and consists of three pairs of massive flags placed parallel to one another, bounding a trench subdivided by two transverse stones into three compartments. Two large flags lying near were possibly roofing stones.

10. *Tormore Chamber No. 2, Machrie Moor*.—Situated in the moor about a mile due north of the last monument, a few hundred yards south-west of Moss Farm. There is no trace

of cairn or frontal semicircle. The chamber, which is buried to the upper edges of the stones forming its walls, has lost its roof, but still retains its portal stones. It is 9 feet 10 inches in length and 3 feet in breadth, and was probably divided into two compartments; its long axis is directed N.E. and S.W., with the portal at the north end.

11. *Moinechoill Cairn*.—Situ- ated at the mouth of Gleann an t-Suidhe, near Moinechoill farmhouse. The cairn is greatly reduced on its north edge. It is grass-covered, measures 100 feet long and 43 feet across at its broadest part; it is directed N.E. and S.W. The south edge is well defined, and shows remnants of a setting of flags marking the outline of the cairn. At the north end there are the remains of a ruined chamber. Eighty-seven feet to the north of the cairn is a monolith, which has prob- ably no primary relation to it.

12. *Glenrickard Chamber*.—Situ- ated in Glen Cloy, on the moor above Kilmichael House, close to a cottage called Glenrickard. There are no traces of a cairn or of a frontal semicircle. The chamber is formed of rather light flags, with their upper edges nearly on the same level, so that the monument is more like a series of cists than a chamber (Text-fig. 67). The roof and end



TEXT-FIG. 67.—Ground Plan of Cists at Glenrickard, Glencloy. (S. A.)

stone have gone; there are two portal stones, but the gap between them is only 7 inches. The chamber is directed N. and S., with the portal to the south. There have been three compartments, but they are rather smaller than usual, the third from the portal being only 3 feet 10 inches long by 2 feet 2 inches broad. Two feet 6 inches from this compartment is another cist, which is possibly a short cist representing a secondary interment, and 10 feet farther north is a second ruined cist placed at a different angle. This last has the appearance of a short cist, but it is not carefully constructed, and differs little from the component compartments of the chamber.

The structure is anomalous, and may perhaps be regarded as representing a phase of degeneration in the transitional period.

13. *Sannox Chamber*.—Situated on the hill south of Sannox, opposite the 'Rocking Stone.' The cairn is reduced to a fragment, measuring 50 feet by 30 feet. There are no traces of a frontal semicircle. The chamber lies W.N.W. and E.S.E., measures 12 feet 10 inches long by 4 feet broad, and is divided into three compartments. Owing to the fact that the east stone of the middle compartment is lower than those of the first and third compartments, and its west wall is formed of rubble building, the surface appearance is that of two cists placed in line and 4 feet apart. Thirteen feet to the south of the chamber is a rifled short cist, measuring 2 feet 6 inches square.

14. *Monamór Chamber*.—Situated on the high moor about a mile south of the Monamór Burn, 400 feet above the sea. The cairn has now wholly disappeared. Three stones of a frontal semicircle survive. Two of them guard the portal of a chamber, which measures 14 feet in length, and is divided into three compartments. The chamber is filled up to the level of the side stones, and is in great part buried in the heather.

15. *Dùnán Beag Cairn, Blairmore, Lamlash*.—Situated on the east side of the valley carrying the road from Brodick to Lamlash, about three-quarters of a mile above Lamlash, and 400 feet above the sea. The cairn is rectangular, and measures 121 feet by 65 feet. It has been much quarried on the surface, and is covered with grass and heather. Its long axis lies due N. and S. At the north-west corner is a single stone, probably representing the position of a setting of flags at this horn of the cairn. At the north end is a ruined chamber which has lost its roof and end stone, but has retained one portal stone. It is oriented N. and S., with the portal to the north. At the south edge of the cairn is a small chamber of two compartments, which is probably a secondary intrusion on the cairn, and belongs to the transitional period.

16. *Dùnán Mór Cairn*.—Situated on the hill above the last, 100 feet higher up. The cairn, which is covered by grass and heather, is contrary to the usual plan, circular in shape; it measures 78 feet in diameter. Placed radially in the cairn are three megalithic structures representing three chambers. The first chamber, at the north-east, is now represented only by two stones in line. The second, on the west side, measures 22 feet long, and is directed in a line 70° south of east. It has a distinct portal, but the north wall has been removed. The south wall is complete, and the transverse stones, dividing it into three compartments, remain *in situ*. The third chamber, at the south edge, consists of two compartments. The original design of the chambered cairn is here wholly departed from, and the monument belongs to the transitional period.

17. At *Tormore Farm* there is the site of what once was a great white cairn. The remains of the chamber are to be seen in the wall of the byre.

II. SHORT CIST INTERMENTS.

(a) *Short Cists in Tumuli.*

Clachaig Flagstaff Mound.—Situated in front of Clachaig farmhouse, on an elevation of considerable height. The tumulus is nearly circular, measuring 35 feet by 27 feet. It contains in its heart a short cist covered by a flagstone, containing the primary interment; near its south margin a smaller rifled cist, representing a secondary burial.

(b) *Short Cists in Cairns.*

1. *Brown Head Cairn.*—Situated on the roadside at Brown Head, near the twenty-seventh milestone. The cairn has been removed, all except a base of large stones set over a circular area 26 feet in diameter. The outline is marked off by larger stones. Part of the circumference of the cairn has been removed in making the road. It contains, at the central point, a short cist, without its capstone.

2. *North Sannox Cairn.*—Situated at the mouth of North Sannox Water, on the north bank of the stream. It is of irregular outline, but is approximately circular, measuring 50 feet in diameter. The cairn runs out to the level on the south, but to the north has a steep face, on which several large flagstones are seen. At the edge of this slope, under a capstone, is a short cist measuring 2 feet 5½ inches long by 1 foot 8 inches broad and 1 foot deep. The sides and one end are formed of single light slabs, the other end is formed of two small slabs placed end to end. Near the eastern edge of the cairn is a standing stone 3 feet high and 2 feet broad, and close to it another of similar dimensions lying on its face. The meaning of this arrangement is not apparent, and it is somewhat doubtful whether the short cist, which is all that could be found in the cairn, is the original interment.

(c) *Sites of Short Cists, without overground structure to mark their situation.*

The finding of short cists has been recorded at the following sites. Those which yielded relics are described in the text.

1. South Feorline, Blackwaterfoot—(Bronze dagger blade).
2. Kilpatrick.
3. Clachaig Limekiln Cairn (secondary).
4. Cnocan a' Choilich.
5. Glenkil.
6. Benlister Burn, Lamlash.
7. Merkland Point.
8. North Sannox, near cairn described above.
9. Whitefarland.
10. Achancar. Several cists were removed in ploughing from a spot 100 yards south of Achancar farmhouse.
11. Machrie Water foot.
12. Greenhill, Dippen. On the top of elevation to south-west of Dippen a great slab is exposed, measuring 7 feet 4 inches by 3 feet 3 inches by 1 foot 2 inches, and beside it are three other stones which seem to have once formed a cist covered by the flag.
13. Achancairn cist.
14. Cist at Cashel, Kilpatrick.

(d) *Circles of Standing Stones.*

1. On the right of the String Road going west in Glen Sherraig, is a small ruined monument of which three small standing stones alone remain, so disposed as to suggest that the original structure was a double circle.

On Machrie Moor there is a great assemblage of circles.

Entering the moor from the Shisken Road to the north of Balmichael, one first meets with—

2. A small circle situated near the border of the wood. Three stones remain to indicate the former existence of a circle like that of Achaleffen (see p. 123). The stones are placed on the circumference of a circle 18 feet 10 inches in diameter between the cardinal points. The stones are irregular blocks of sandstone, and stand 2 feet 8 inches above the present surface. One of the stones is recumbent; it measures 4 feet 3 inches long, 3 feet 4 inches broad, and 2 feet 3 inches thick; the east stone measures 2 feet 9 inches broad and 2 feet thick; the north stone measures 4 feet broad by 2 feet 8 inches thick. The centre has been disturbed. There is no cist present.

3. Farther into the moor, to the south of the wood fringing the Moss, and several hundred yards east of the canal draining the Moss, is a fragment of a circle represented by two stones. They stand 10 feet apart. The first stone is a block of white sandstone, measuring 3 feet 8 inches broad and 10 to 12 inches thick, and standing obliquely 2 feet above the Moss; the second stone, of red sandstone, stands only 1 foot 3 inches to 1 foot 6 inches above the surface, and measures 2 feet 8 inches broad and 1 foot 2 inches thick. The centre has been disturbed and hollowed out; there is no sign of a cist.

Westwards, at the Moss Farm, are the five circles described in the text.

4. Is a great circle 45 feet in diameter, now represented by three tall sandstone pillars.

5. Is a second large circle of 39 feet in diameter, with only a single tall sandstone pillar standing.

6. Is a circle of granite blocks to the east of the sandstone circle, and is 42 feet in diameter. The circumference is marked by a number of stones just appearing above the surface. This circle, as explained in the text, has no inter-

ment at its centre. It has the appearance rather of certain circular settings which occur elsewhere in the island, and are outlined by small stones. Their date is quite uncertain, and their purpose unknown.

7. Is a circle of four blocks of granite standing 3 feet high, placed nearly at the cardinal points, 21 feet in diameter, with a cist at the central point.

8. Situated immediately to the south of the farmhouse, is formed of two rings, an inner 36 feet, and outer 57 feet in diameter, with a ruined cist at the central point.

9. Situated $22\frac{1}{2}$ chains farther west, nearer Tormore, is a large circle 63 feet in diameter, formed of granite blocks, standing 3 feet high. There is no record of the circle having been opened. The enclosed area is considerably disturbed, and it was not considered worth while, either in 1861 or in the recent survey, to explore it.

10. A little more than a mile to the north is the great circle of Achangallon, formed of fifteen standing stones, and enclosing an area of 47 feet in diameter, with a central short cist.

11. At Drumadoon, S.W. of the farmhouse near the shore, is the site of a small circle with a central cist exposed, and covered by a large flagstone. Of the stones of the circle one only remains, but it is probably broken ; the others are displaced.

12. Above Achaleffen, in the valley of the Kilmorie Water, is a small circle of 16 feet in diameter, marked by four granite blocks set at the cardinal points (see p. 123).

13. High up on the top of the cliff at Largie Beag, 600 feet above sea-level, and close to the edge of the cliff, is a small circle of standing stones 18 feet in diameter. The stones, eleven in number, are very irregularly placed, and are all small blocks or slabs standing 1 to 2 feet above the surface. The enclosed area is somewhat depressed, and it is doubtful whether it can be included as a sepulchral circle.

14. At Largie Beag Point, on a green knoll close to the beach, there are two standing stones placed in line and 10 feet apart. They are small blocks standing 2 feet 6 inches above the surface. The centre of the knoll, within an area which would have been enclosed by a corresponding setting on the west, shows an irregular heap of slabs and stones, which probably at one time formed a cist.

15. On the summit of the Lamdash Road, on an elevation on the Moss 371 feet above sea-level, are four blocks of granite, defining an area of 17 feet in diameter. At the central point is a small cist cut out in solid sandstone and covered by a slab (see p. 121).

Twenty-two yards to the south is a solitary standing stone of conglomerate, 3 feet 7 inches across, and standing 4 feet 5 inches above the surface.

SITES OF CAIRNS, ETC., OF DOUBTFUL CHARACTER.

1. West of Moss Farm, on the ridge beside the road through the Machrie Moss, is a remnant of a cairn, now measuring 82 feet long by 49 feet broad, with its long axis directed east and west. It is named *cairn* on the Ordnance map, but was taken by Dr. James Bryce, in 1861, for the remains of a circle. There is a standing stone 3 feet 3 inches broad and 2 feet thick, rising 3 feet above the present surface, at the north and east corner. Beside this are several large stones recumbent, while 8 feet to the south of it is a flag on edge, 3 feet high, 3 feet 4 inches broad, and 10 inches thick. The nature of the monument is quite uncertain, but there is some reason for supposing that it may have been a chambered cairn.

2. Close to this cairn, nearer the farm and on the roadside, are the remains of a cist formed of flags of red sandstone. One side stone and one end stone alone remain. The side

stone measures 6 feet 8 inches long by 1 foot 1 inch thick ; the end stone measures 3 feet 8 inches long and 1 foot 4 inches thick. The meaning of this large cist, which, both in its dimensions and in the size of the slabs, is quite unlike a short cist, cannot be made out, owing to the absence of any accessory structures.

3. *Cairn at Machrie Water Foot*.—At Machrie Water foot, on the north bank of the stream, is the remnant of a cairn, with a cist 3 feet 6 inches wide and 2 feet deep, but of uncertain length. It is constructed of small flags on edge, and had, when dug out, a paving of slabs at the bottom. Charcoal was found mixed with the peat which filled the cist or chamber. Three large stones lie at the lower end of the cairn, without any evident structural arrangement. It is not possible to determine whether this was originally a monument like that at Drumadoon, or was a cairn with a small chamber.

4. On Tòrr Rìgh (King's Hill), Shisken, is the remnant of a cairn which may possibly have been a chambered cairn. Three large stones stand in line, running north-east and south-west. They may have formed a part of a chamber, but the appearances are not definite enough to warrant a judgment.

5. *Cairn at Levencorrach, near Kildonan*.—On the edge of the ridge to the east of the hamlet of Levencorrach, is a single standing stone 2 feet 8 inches high, 1 foot 7 inches broad, and 7 inches thick. It is placed on the margin of a flat area, 28 feet by 25 feet. The appearance of another stone, broken off at the ground-level, on the opposite side suggests the possibility that this is the site of a circle.

6. *Cairn in Monamór Glen*.—In the valley of the Monamór Burn, by the side of the mill dam, is the site of a cairn, now measuring 16 feet by 17 feet. At the west end is one irregular upright stone 2 feet 6 inches high.

7. *Cairn at South Sannoax*.—At the mouth of the South

Sannox Water is the base of what must at one time have been a large cairn, which has been encroached on by the plough till now only a fragment remains. There are no erect stones, and there is nothing to indicate what its original character may have been.

8. *Cairn in Gleann an t-Suidhe*.—On the right bank of the burn at the head of Gleann an t-Suidhe, by the side of an old tract used before the making of the String Road on the opposite side of the valley, is a heap of stones named a cairn on the Ordnance map. It can now have neither its original shape nor its original dimensions, and seems to have been cut into by the old road. Its nature is not determinable.¹

9. *Circle at the head of Machrie Burn*.—Near the head of Machrie Burn is a small setting formed of four stones standing about two feet above the present surface. The stones stand rather on the outline of a rectangular figure than of a circle, as the radii are not equal. Further, they are not placed with their faces towards the centre of the circle, but rather in an angular fashion. The nature of the setting therefore remains doubtful. The centre was dug out by Mr. J. A. Balfour in 1909, but nothing was discovered to indicate the purpose of the monument, if monument it is. The stones are placed from 6 to 7 feet apart, and measuring across the centre of the setting one pair is separated by a diameter of 8 feet 11 inches, the other by a diameter of 7 feet 2 inches.

¹ It is the traditional resting-place of Saint Columba when crossing the island. Hence *Gleann an t-Suidhe*, 'Glen of the Resting.'—ED.

MONOLITHS.

Some of these are probably monoliths proper, but others are certainly survivors of circular or other settings.

	Height.		Breadth.		Thick-ness.		Orientation faces directed
	Ft.	In.	Ft.	In.	Ft.	In.	
1. At Congregational Church Manse, Sannox,	8	9	3	4	1	6	N.W.-S.E. has been reset
2. In front of Sannox House, . . . . .	...		...		...
3. Deer Park, Brodick—(1) West Stone,	11	6	2	6	1	10	70° E. of S.
Deer Park, Brodick—(2) South Stone,	8	11	2	0	2	0	S.E. N.W.
Deer Park, Brodick—(3) East Stone,	7	10	2	2	1	2	65° E. of S.
1 is 71 feet distant from 2, and it again is 306 feet distance from 3. They are not on the circumference of a circle. They are of Red Sandstone.							
6. Stronach, Brodick, by the roadside (Red Sandstone),	9	8	5	0	1	11	N.E. S.W.
7. Stronach Wood, Brodick,	3	7	2	1	1	2	60° W. of N.
8. East Mayish, above Brodick (Red Sandstone),	10	4	3	1	0	9	N.E. S.W.
9. Dùnan Beag, Lamlash (Schist),	6	0	3	0	...		N. & S.
10. Blairmore, Lamlash (Schist),	4	5	6	0	...		N. & S.
11. Kildonan, by side of road (remains of a circle),	3	7	3	6	0	6	N. & S.
12. Balmichael, Shisken (now recumbent),	9	9	2	7	...		probably E. & W.
13. Machrie Moor, N.W. of Moss Farm (possibly survivor of a circle),	5	4	1	2	1	4	...
14. Machrie Moor, due W. of Moss Farm and S.W. of last, . . . . .	...		...		...		...
15. Machrie Burn, on hill between Machrie Water and Machrie Burn (Sandstone),	6	8	6	3	1	1	E. & W.
16. Machrie Water Foot (Sandstone),	4	10	3	0	1	10	E. & W.
17. Achancar,	15	9	5	9	1	4	E. & W.
A similar block lies to south, 27 feet long and 5 feet 6 inches at the base. The two may have formed part of a setting, possibly circular.							

CUP AND RING-MARKED ROCKS : STRONACH RIDGE, BRODICK.

By FRED. R. COLES.

[MR. COLES made a special examination and drawings of these remarkable sculptures in May 1901. He also reported to the Society of Antiquaries of Scotland his observations on them. That report is now reprinted from the *Proceedings*, with his kind permission, and his drawings reproduced by favour of the Council of the Society.—ED.]

‘ I reached the Stronach Ridge on the morning of 5th May (1901), and then laid off a general plan (see Fig. 1) of this large rock-surface. We ensured accuracy by triangulating from almost every ring-centre ; and this completed, we made notes of the varying conditions of the sculpturings, some of them, notably those in the section marked A (Fig. 2), being particularly deep, wide, and much smoothed. In one or two others the tool markings are distinct ; but in the very exactly circular group in Section E (Fig. 3), the pick-marks are carried only so far as to sketch out, as it were, the line of the rings and grooves. The design next to this on the left is curiously irregular and rudely formed ; and the design still farther west is rather an exception to the general type on this rock, consisting of seven cups and connecting grooves. Another group of simple cups, close to one of the double-grooved “ boss ” symbols, is found on the lower part of a small isolated rock

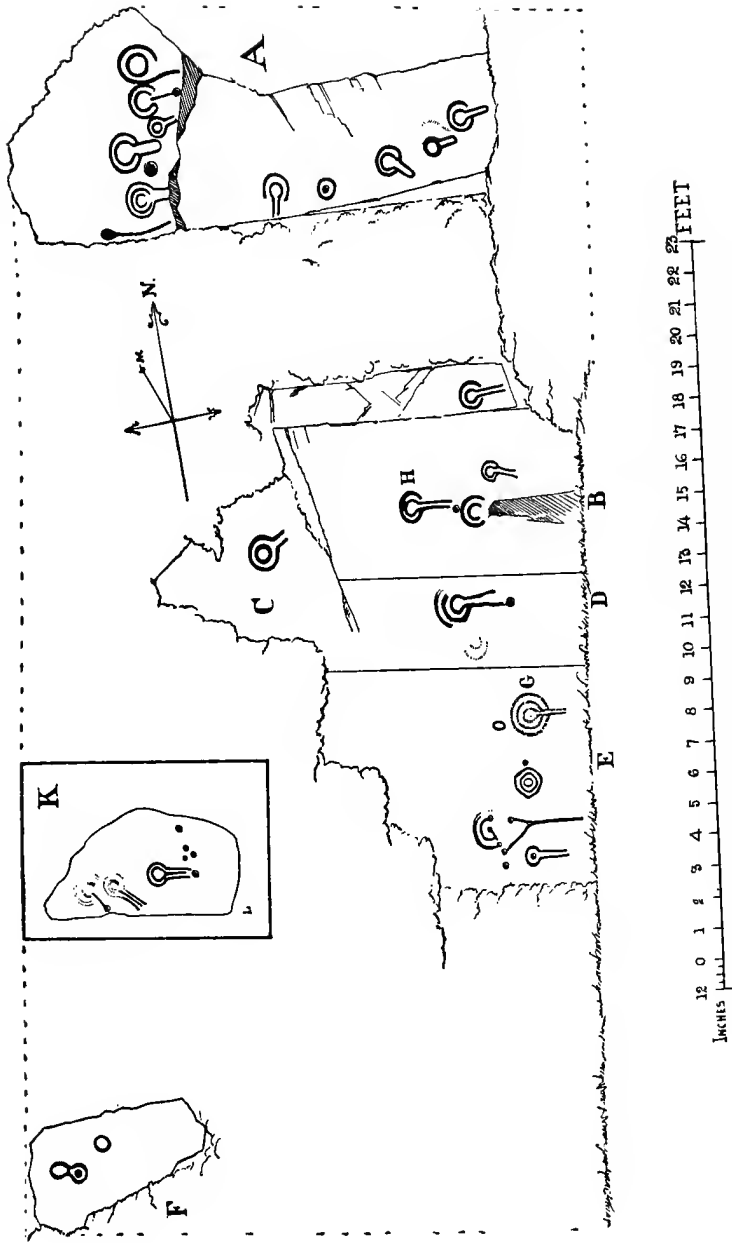


FIG. 1.—General Plan of the Cup and Ring marks on Stronach Ridge. (S. A.)

120 feet N.W. of the top of Section A (Plate No. 1). This was discovered by Mr. Somerville. The rock being sharply

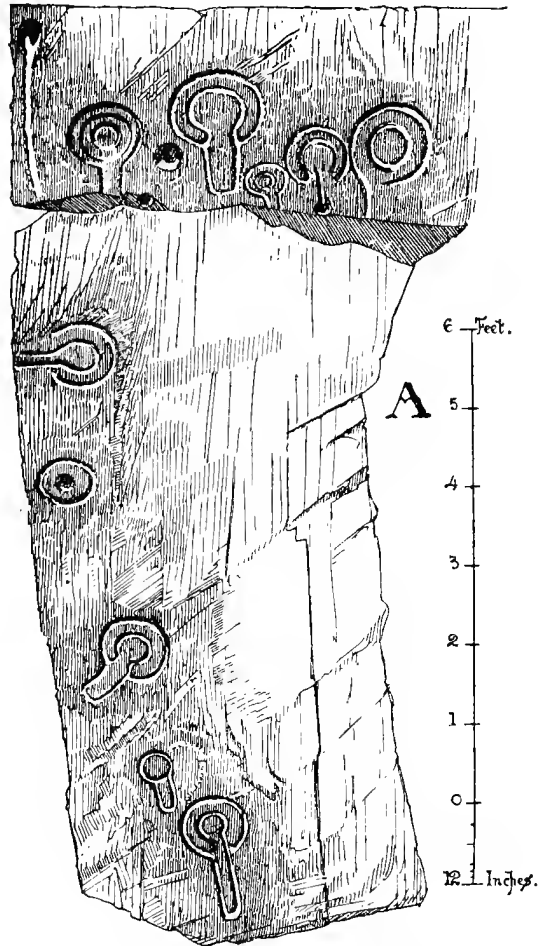


FIG. 2.—Enlarged view of rock surface marked A on plan. (S. A.)

ridged, and therefore easily weathered, does not now show at all clearly the exact shape of the rings in which the grooves seen in my drawing terminate, but the beginnings of rings



I. (S. A.)



II. (S. A.)

I. Stronach Ridge. View of Rock Surface, marked K on the General Plan.
(From a photograph by the Rev. J. E. Somerville.)

II. View of Rock Sculptures. (From a photograph by Mr. A. Ribbeck, Brodick.)

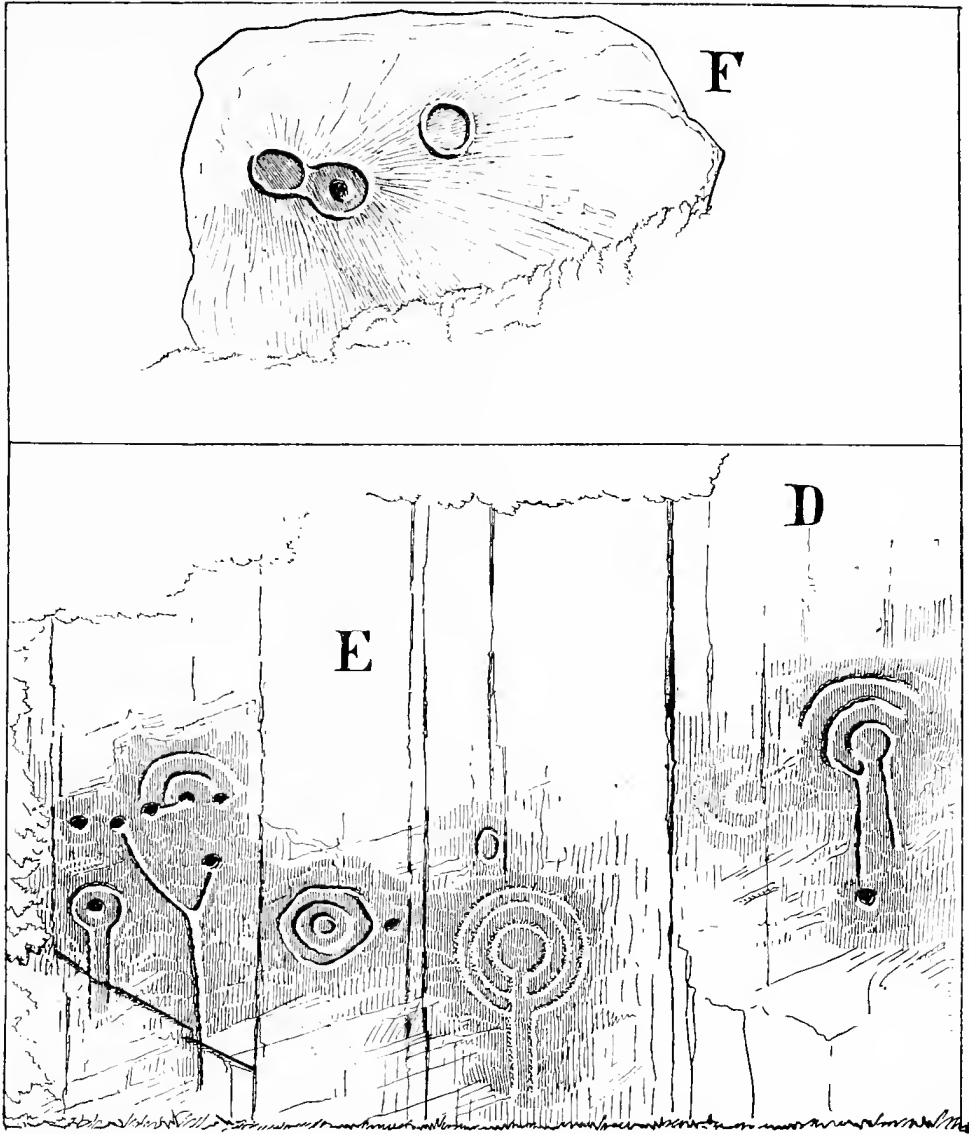


FIG. 3.—Enlarged views of rock surfaces marked D, E, and F on the General Plan. (S. A.)

are traceable. There is in Section A (Fig. 2), close to the remarkable and large ring-groups, a large oval cup from which proceeds a well picked-out curving groove, over 2 feet long, the longest actual sculpturing here. The typical

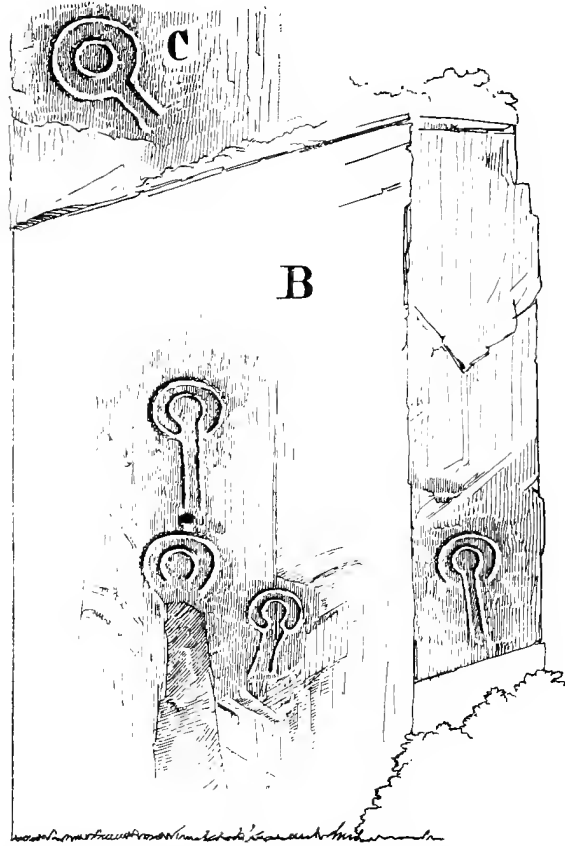


FIG. 4.—Enlarged view of rock surface marked B and C on General Plan. (S. A.)

designs (see B and C, Fig. 4) range in size from 10 inches to 1 foot 7 inches. These designs, though never hitherto noticed in Scotland in anything like the same number, have their cognates elsewhere. For example, on a rock at Gill-

roannie, Stewartry of Kirkcudbright,¹ there occurs just such a plain oval "boss" as is found here on Stronach Ridge, a few inches above the right-hand group in Section E. And in Yorkshire, on a stone near the Panorama Stone, and on other surfaces in that neighbourhood, near Ilkley, Mr. J. Romilly Allen has recorded² designs, somewhat similar to these

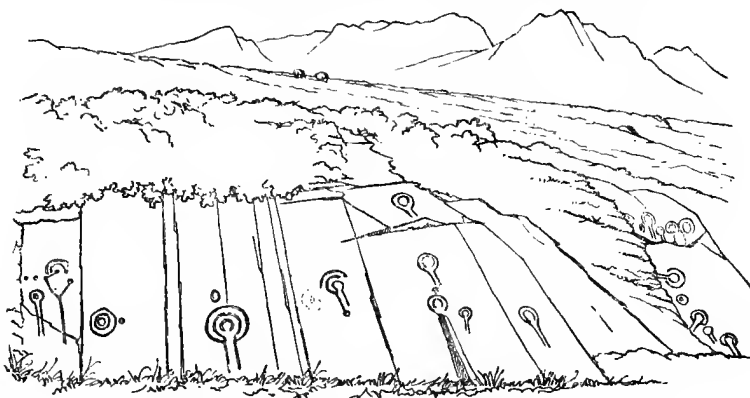


FIG. 5.—View of the Rock on Stronach Ridge, with the Ben Nuis range behind. (S. A.)

double-grooved ring-groups of Arran, which have, in addition, cross-bars at right angles to the vertical grooves, giving them the appearance of ladders.

‘As regards the site of this rock, it is some distance south and east of the actual crest of Stronach Ridge. There are several flat rock-surfaces in many directions at varying distances from the crest, but upon none could I trace any sculpturing whatever.

‘The deeply-grooved channels, noted by Mr. Somerville, “running from right to left,” amongst the designs shown on my Sections B and D, are assuredly only weatherings and water-worn marks.

‘It may be of some interest to note that a line bisecting

¹ See *Proceedings of the Society of Antiquaries of Scotland*, vol. xxix. p. 76.

² *Arch. Assoc. Jour.*, vol. xxxv. p. 20.

the two ring-groups, G and H, points direct to the summit of Goatfell, and this happens to be Magnetic North. The Polar North is also shown on my plan, and in the general view of the rock (Fig. 5) its relation to the fine range of peaks on the north, culminating in Ben Nuis, may be seen.'

PROTOHISTORIC PERIOD

VIKING BURIALS

FORTIFIED AND DOMESTIC SITES

AN IRISH-CELTIC MONASTERY



Viking Grave-mound, Kings Cross, after being excavated. (S. A.)

VIKING BURIALS.

By THE EDITOR.

I.

THE period from the ninth to the close of the thirteenth century may be regarded as the age of the Norsemen in the Isles, though some venturesome jarls had doubtless set their course thither in an earlier century. It is, however, by no means certain when the Clyde islands were effectively occupied by the Northmen; it was one thing for a king of Norway to allot the islands to a follower, quite another for the grantee firmly to establish himself. The sea-kings cannot have contented themselves with merely a naval demonstration in the neighbourhood of the islands they laid claim to—that would have passed out of memory; they must have actually occupied Arran, and the settlement was long enough to leave in their language descriptive references to many of the places they saw. A number of these place-names endure to this day, such as Bradvik (Brodict), Sandvik (Sannox), etc.—no intangible proof of something more than mere temporary residence.

Still more tangible proof of the presence of the Norsemen in Arran than that of place-names is provided by the remains of a Viking grave-mound, discovered in 1909. The grave-mound is situated on the promontory on the south of Lamlash Bay known as Kings Cross Point. The promontory, which reaches a height of some 80 feet above sea-level, is a plateau of rock, the mound on the landward end.

The only indication of this burial-place was an irregular heap of stones extending for 30 feet, with a breadth of 8 to

10 feet, and a height of $1\frac{1}{2}$ to 3 feet, obviously much disturbed. When some of the upper stones were removed, a setting of stones was revealed, and 6 feet apart from this line a corresponding one was obtained. These lines were followed closely, and the accumulated débris between them was cleared out, down to the bare rock. About 2 feet above the middle of the mound at the northern end, close to the western stone setting, heaped up, mixed with soil, were calcined human bones, portions of a large cetaceous bone (a part decorated),

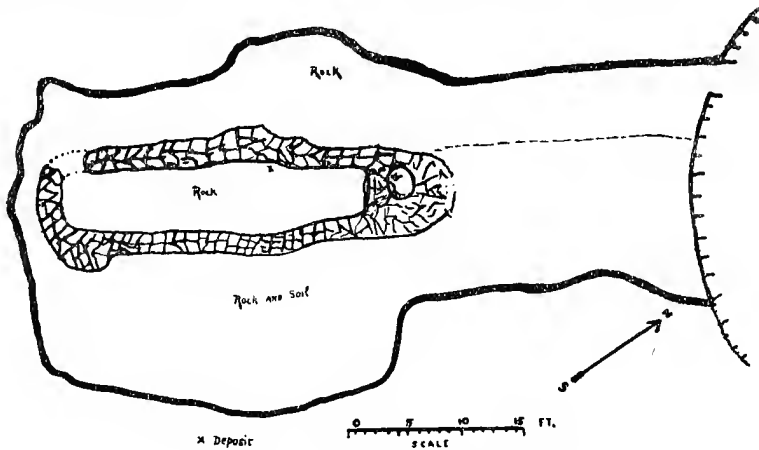


FIG. 1.—Plan of Viking Grave-mound. (S. A.)

articles of iron, fragments of bronze, a bronze coin, and charcoal (Fig. 1).

‘Egil had a mound made near the end of the ness, and in this was he laid.’¹ This is an example from the many furnished by the Sagas, going to prove that the selection of such a place for a Viking burial was in accordance with custom.

Wildly great were these Vikings; heroes not of romance, but of actuality, men of matchless daring, profoundly conscious of picturesque imagery. Their ships were ‘hawks

¹ *Egils Saga*, c. 61.

PLATE XXVI

VIKING RELICS FROM GRAVE-MOUND, KINGS CROSS.



I. (S. A.)

- 1, 2. Rivets of Viking Ship.
- 3, 5. Nails.
- 4. Back of shield-shape object showing bolts.



II. (S. A.)

Slab of Cetacean bone.

of the seagull's track,' or the 'sea-king's deer'; their swords 'the gleam of the battle' and the 'viper of the host'; their shields 'the path of the spears' and 'the board of victory.' As they lived, so they desired to die; the Valhalla to which they hoped to win entry was essentially the 'hall of the slain.' It was an aspiration of life to be laid when 'the song of the spears'¹ was over, dead or dying, upon a burning ship with hoisted sail and her helm directed seawards; or to have a ship or ship's boat carried and placed in such a position that the sea might chant an eternal dirge for the deceased; here also, the ship formed the pyre for the warrior—gloriously fitting! The Viking of Kings Cross was assuredly cremated in a boat; the iron rivets found bear ample testimony to the fact. This burial is particularly suggestive, the evidence of skill, art, and culture found in the grave testifying to a desire that the link with the past should remain unbroken. The slain of this warrior, less skilful, less cultured, would be stripped of their trappings of the fight, and would be buried with their feet towards the east, that they might arise and face their Lord at His coming. It is the meeting in Arran of Paganism and Christianity in the ninth or tenth century.

When the pyre had burned itself out, the remains of the Viking and his possessions had evidently been collected into a heap, then a mound erected over all. The mound, as now seen, suggests that the original form was oval; but the natives had found it, in common with a number of other antiquities in the island, a convenient quarry, therefore there is no certainty as to its form, though the probability is that it was shaped like an inverted boat (Plate xxv.).

The objects found in the grave consisted of—

A *slab of cetacean bone* broken into several portions. The existing parts do not indicate the use the bone had been put to. The design is formed by a series of double circles

¹ Battle.

with a central point; the diameter of each section of the design is 10 mm. The pattern is not unique, designs of concentric rings being frequently employed on decorated articles of the Viking period¹ (Plate xxvi. No. 2).

Articles of Bronze.—The fragments of articles were unrecognisable as to their use, evidently having been destroyed in the pyre, the only exceptions being the coin and a doubled band of bronze, the straight length of which is 130 mm., with a width of 16 mm. and a thickness of $1\frac{1}{2}$ mm.; at the bend it had been slashed with a sharp instrument; one end of the band is square, the other has a portion of the metal pressed over.

The bronze coin is a styca of Wigmund, Archbishop of York, A.D. 837-854 (+ VIGMVND IREP). It may be noted that a similar coin was found in a Viking grave-mound at Kiloran Bay, Colonsay.²

Articles of Iron.—A pointed shield-shaped object, 65 mm. in length and measuring 42 mm. at the top; the front shows clearly the impress of some woven fabric; there is also a bronze-like fragment adhering to the face; at the back there is a bolt 50 mm. in length, with a counter-bolt of 32 mm., each bolt is held in position by a ring; the larger bolt is pressed by the lesser, evidently with the object of preventing slipping. The rivets measure in outside length 42 mm., the shaft 31 mm., with round head, 16 mm. in diameter, and a lozenge-shaped or rhomboidal terminal plate 21 mm. in width; they are of the type frequently noted as having been employed in the construction of Viking ships. The nails obtained were of different sizes, they have oblong heads. An article shaped like a modern lock latch was also found (Plate xxvi. No. 1).

¹ A portion of a bone casket of the Viking time was found at York in 1906, and figured in the *Proceedings of the Society of Antiquaries of London*, vol. xxii. p. 9.

² *Proc. Soc. of Antiq. Scot.*, vol. xli. p. 447.



1. Umbo.



2. Bolt-like object on
Flange of Umbo.



3. Sax of single-edge Sword.



4. Bent Sax as found
in Viking Grave-
mounds, Norway.

II.

A short distance from the south bank of Blairmore Burn, Lamlash, and about 170 feet above high-water mark, there existed a small gravel mound. In 1896 this mound was removed for the erection of a house. In the course of the demolition of the mound, some 3 to 4 feet from its surface, some fragments of iron were found ; these fragments were intelligently preserved, and form the evidence that in this mound some Viking had been interred.

The fragments discovered were kindly given to the writer for examination.

The exact nature of the relics was at first not obvious, as the metal had become almost completely peroxidised, and only crumbling fragments of the original articles remained. The objects proved to be two in number : an umbo, or shield-boss, and a sax or single-edged sword of the Viking Age.

The umbo (Plate xxvii. No. 1) is above the usual size, having measured when it was complete 205 mm. across the base. The diameter of the cup is 105 mm. The umbo is 100 mm. in height. There is a remarkable feature in connection with this boss, that on neither side of the flange is there the slightest trace of rivets to bind it to the shield. It would be too bold to assert, considering the state of the umbo, and the rust-attached particles of sand upon its upper surface, that in this case the customary method of attachment had been departed from ; yet it is equally as difficult to account for the presence of a bolt-like object on the under portion of the flange (Plate xxvii. No. 2) as it is for the absence of rivets. This bolt—if for convenience we may so term it, its nature and purpose being equally obscure—does not suggest an object that has accidentally become rust-attached ; its setting is in line with the diameter of the boss, and its long axis extends from the edge of the cup to the outer margin of the flange. The fact cannot be overlooked in the description

that the underside of the umbo is almost quite free from any adhering extraneous matter; all that is rust-attached being fragments of the wood of the shield. What could the purpose of this bolt be? If it were used for fastening the umbo to the shield, then clearly it must have been driven in parallel with the thickness of the wood, and not through, as in the case of rivets.

Dr. Haakon Schetelig has informed the writer that not a single example is known to him of an umbo of this type having been fixed to the shield by other means than by rivets driven through. Seeing, therefore, that the grave-mounds of Norway have yielded no example of an umbo having an attachment on its flange such as possessed by this Lamdash one, the nature and purpose must be left undetermined.

The sax, or single-edged sword (Plate xxvii. No. 3), is of the long type. The existing remains of the blade have a straight length of 490 mm. until the portion is reached which shows the sax had been doubled when placed in the grave; ¹ of the lower portion of the blade only a curved fragment, measuring 95 mm., has been recovered. It has been assumed that it is the lower portion that is amissing through the fact that the hilt, or more accurately a portion of it, was obtained and no piece to suggest the point of the sax. The most perfect fragment of the blade shows a width of 60 mm. The hilt, of which only the upper part was got, has only 45 mm. of its length remaining below the upper guard; a sax of this type had sufficient space of grip to enable the weapon to be used with both hands, it is therefore clearly evident that a large portion of the hilt has been lost. One part of the hilt shows very clearly the characteristic flat tang or spit of these weapons when denuded of their wooden covering; the

¹ The destruction of swords by bending them, and other weapons of war by this and other means before placing them in the grave-mound, was a usual act in Viking Age burials (see Plate xxvii. No. 4).

remaining portion is coated with a mixture of wooden fragments and sand. A somewhat rare feature in these weapons is possessed by this sword, through its having had guards wholly, or partly, of iron, it is impossible to say which. The base of the guards measures 25 mm. in length, and the existing length of the remaining one is 20 mm., but obviously it has been broken ; the corresponding guard is broken off close to the tang. A complete part of the wooden pommel still remains, on the top there is a circular hole probably made by a rivet, that attached some ornamental portion.

When the relics were given to the writer a piece of iron was adhering to the hilt, and when this was detached it was found to fit the flange of the umbo ; this seems to indicate that the shield had first been laid down and the sax placed upon it ; by the time the wood of the shield had decayed, this portion of the umbo had become so firmly rust-attached, that it broke off when shield and sword fell apart.

There might have been considerable difference of opinion regarding the date of these relics had the sax alone been found, but the umbo leaves no room for doubt, as it is exactly of the type found in the grave-mounds of Norway of the eighth or early ninth century. Thus these relics proclaim this to be one of the earliest, if not the very earliest, Viking grave-mounds yet discovered in Scotland.

The writer gratefully acknowledges the valuable confirmation of the age of the objects to Dr. Haakon Schetelig, the eminent authority on Viking relics, and for the comparative evidence furnished by his *Gravene ved Myklebostad paa Nordfjordeid*.

FORTIFIED AND DOMESTIC SITES.

By THE EDITOR.

I.

DEFENDED or constructed defensive sites are distributed over most of the counties of Scotland; to all these the generic term 'Fort' or 'Hill-fort' has been applied. This designation is none too fortunate, as by common usage the inference to be drawn from the title of 'fort' would be that these structures were primarily of a military nature. Investigations, so far as they have gone, do not uphold any such conclusion. The reader will therefore note that, as here employed, the word 'fort' must not be regarded as indicating necessarily works of a martial kind.

The number of these forts in Scotland, as noted by the Ordnance Survey, approaches eleven hundred. If little precise information can be offered regarding these structures, the difficulty arises in no way from their rarity; there are ample of them for the purpose of individual study and of comparison. The complexity of the problem attached to them is created by the fact that it is only when we reduce them to their simplest phase that they appear to have common structural features, *i.e.* that all possess artificial barriers so disposed as to defend more or less certain enclosed areas of ground. When we speak of a Broch, a Crannog, or a Round-tower, we refer to certain classes of structure, each conforming to a well-recognised structural plan, and an essential part of the type in each case. It is not thus with forts; their barriers conform to no recognised rule—sometimes these are formed of earth,

or earth and stones, and often simply of stones. At times the forts are rectilinear and at others curvilinear, though the latter is much the commoner form. The argument might be advanced that the reason of the irregularity in form of the defensive works was owing to the desire of the builders to utilise the ground at their disposal to the best advantage. Unquestionably in general this was the case, but equally certain the configuration of the ground has not always dominated the plan of construction. Again, it might be assumed that the fort-builders would invariably select elevated situations forming natural defensive positions; though such was usual, it did not form a constant principle with them, as a number of forts derive no great advantage from their position, being constructed upon flat ground, or on a site commanded in measure by a superior height.

The next point to be noted in regard to these forts is their distribution over Scotland; some counties show no remains, others only a few, and the largest number are to be found in the Border counties, and in the combined area of Argyllshire and Buteshire; but they do not belong to the west and south alone, for they extend at intervals all up the east coast to Dunnet Head, while in the west none have been noted north of Loch Alsh.

It is evident that the builders of these forts cannot have belonged to one race, and it is singular that no observer has as yet been able to distinguish any features of difference in their work.

The era of the occupation of these defensive structures has not yet been made quite clear, the reason being that comparatively few forts have been excavated, and such as have, yielded little in the way of finds¹ of an absolutely conclusive nature; but it is perhaps not rash to hypothesize that they were constructed not earlier than the Christian era and not later than mediæval times.

¹ *Early Fortifications in Scotland*, Christison, pp. 342-351.

There is no lesson which the science of archæology more emphatically teaches than this, that there is no sudden break with the past in all the range of human activity; one age glides slowly into another; those who succeeded the men who used stone axes, made their axes, it is true, of bronze, but the form remained almost unchanged. How little does the iron hammer used to-day differ from the early form in stone! With the making of weapons of offence and defence, and the banding of groups of men together for mutual protection, were formed the beginnings of civilisation, and the elements out of which society has been made. In the formation of strongholds the next step was taken towards the construction of the commonwealth. The clan, the tribe, the nation is evolved from the struggle for individual existence, the protection of the family, and finally from the idea that individual effort is vastly inferior to combined effort: the last stage is reached when the safety of a community and its property is placed higher than any individual claim.

It is only within recent years that these fortified sites have received the serious attention of Scottish archæologists. Even such an eminent observer as Sir Daniel Wilson had little to say regarding them, and contented himself with the observation that 'the subject has already been treated of with ample details in Chalmers's *Caledonia*, and little that is worth recording can be added to his careful researches.'¹ Within the ten pages which Chalmers devoted to the subject there is little satisfying information on the phenomenon of these structures and their place in the growth of civilisation. From the standpoint of archæology to-day, what he recorded was hardly worth recording.² The work that lies before Scottish archæology in this direction must be the excavating of a considerable number of these defensive sites, and ascertaining those which have features of con-

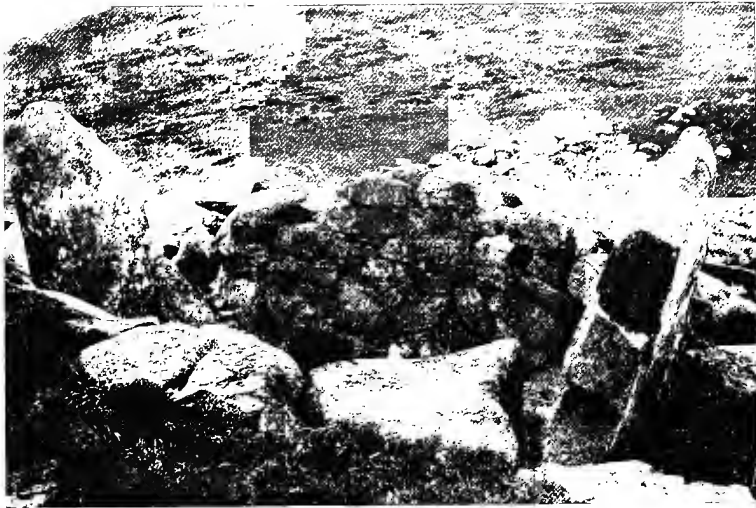
¹ *Archæology and Prehistoric Annals of Scotland*, part iii. chap. iii.

² *Caledonia*, vol. i. pp. 87-96.



I

70



2

FORT, NORTH GLEN SANNOX.

1. Sketch of Fort, looking eastward.
2. Chamber in vallum.

struction in common, and those possessing special characters. Towards this end much has been done by Dr. David Christison¹ and Miss Maclagan,² but the work is far from being completed.

It now falls to us to examine the forts of the island of Arran, and to see what light they shed upon the general problem of similar structures found throughout our country. To accomplish this, we shall proceed to examine each of them in detail, noting all that are marked on the O.M. (6 inch scale). The order to be observed will be from Lochranza to the south by the east shore, and from the south by the western side of the island to Lochranza.

Tòrr an t-Sean Chaisteil ('The Hill of the Old Fort'), *Lochranza*.—This structure is situated on the south side of the loch, on a rocky ridge about 600 feet above the sea-level. The walls, as far as traceable, seem to indicate that the enclosed area was oblong in form, having a length of 231 feet and a width of 117 feet. The walls seem to have been very roughly constructed, but satisfactory evidence of their original height and thickness is not now obtainable; the overthrown débris indicates that both were probably comparatively unimportant. Though the title is given to it locally of 'the old fort,' the existing features of this structure point to its having been used rather for the protection of cattle than as a fortified site for human occupation; if it were built for the latter purpose, the defending lines of wall were singularly badly placed. The possible explanation of its existence is that it formed the cattle-shelter of the castle it overlooks; such structures would doubtless be necessary to frustrate sudden raids.

Tòrr an t-Sean Chaisteil, Sannox.—This fort occupies a magnificent position on a height on the north side of North Glen Sannox. The locale is right above the ruined village

¹ *Early Fortifications in Scotland*, Edinburgh, 1898.

² *Hill-forts and Stone Circles of Scotland*, Edinburgh, 1875.

of Sannox. This fort claims special attention, as the hand of the spoiler seems not to have been laid upon it to any extent; it certainly has not been used as a quarry, as most of the forts on the island have been, therefore there still remain a number of features of marked interest. The

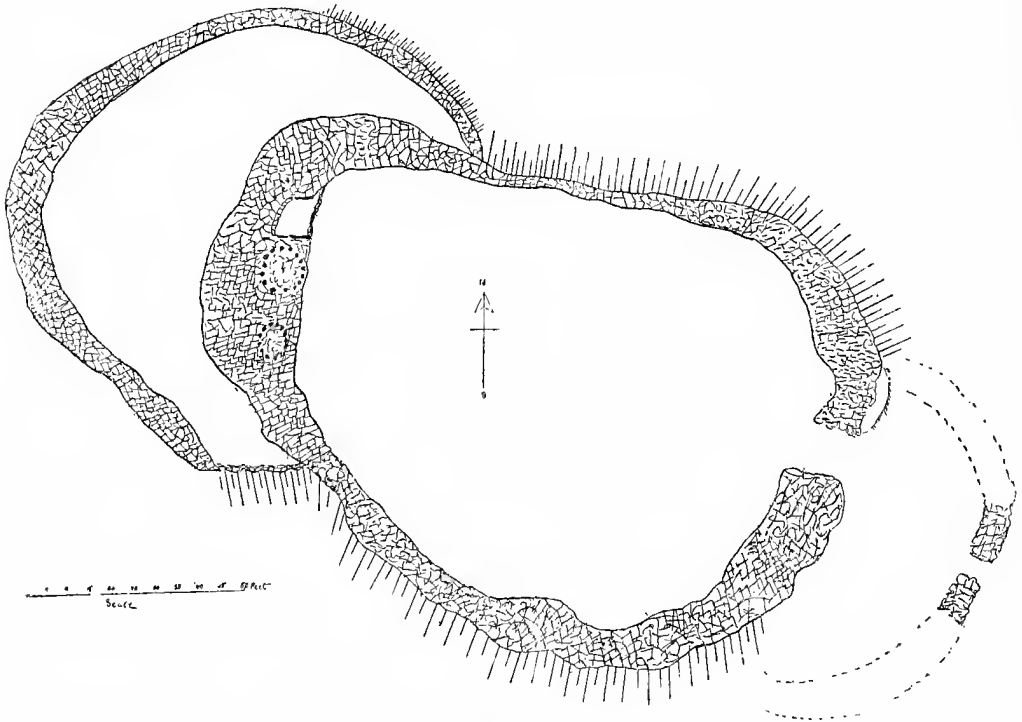


FIG. 1.—Plan of Torr an t-Sean Chaisteil, Sannox.

main defence is constructed on a ridge of conglomerate rock, showing a considerable amount of out-cropping within the central enceinte; the stratum dips in an easterly direction; on the north and south sides the rock face approaches nearly to the perpendicular.

In Fig. 1 the general plan of construction is shown. The approach to the fort is on the south-east side. The

vallum of this outer defence seems to have been about 6 feet in thickness and the portal about 4 feet wide; unfortunately it is only for a few yards on either side of the portal that the vallum has remained standing, but it can still be traced, passing in a curvilinear direction, and terminating against the rock face on either side.

From the lower entrance to the portal of the main enceinte the ground slopes upward with considerable steepness; the dividing distance is about 30 feet. This upper entrance has been placed a number of degrees off the direct line with the lower, in fact it faces almost east, while, as has already been stated, the lower is to the south-east; the object doubtless was to frustrate a straight rush, in the event of the outer approach being forced. The upper portal has had its sides lined with stones of considerable size, a number of them still remain *in situ*; the width of the passage is about 8 feet with a length of 12 feet; the ground between the upper and lower ends rises very abruptly.

When the main enceinte is reached, and the opportunity afforded of viewing the site and its defence works as a whole, one cannot but feel impressed with this work of bygone centuries. The fort commands an extensive view of the steep-sided glen of North Sannox, and, beyond, the cloud-capped peaks of Caisteal Abhail, Beinn Bhreac, Beinn Tarsuinn, Cir Mhór, and others of this Alpine-like group. The main defence measures 120 feet, in its greatest length, and in width about 95 feet, enclosing an area of, roughly, 9940 superficial square feet. The vallum forming the enceinte varies very considerably in thickness at the present time, as large masses of stones have slipped from their original positions, but a careful scrutiny of the various sections seems to suggest 10 to 12 feet as the original thickness; on the western side the wall and fallen stones cover a distance of over 22 feet; this portion of the wall may have been thicker than most of the other sides of the vallum, as in-

serted in this part is a hut-dwelling with the ruined portions apparently of two others. This hut (Plate xxviii. No. 2) measures nearly 8 feet in length, with a width of from 5 to 6 feet; the end is formed on the north with a single slab of stone, on the south by two stones; the interior wall connecting the ends is built of moderate-sized stones, and is nearly semi-circular in form. On the lower ground at the western side of the fort there is a defensive outwork without any apparent outlet, though from the very ruined condition of this wall it is quite impossible to state that none was in the original design. In some portions of this wall the existing height is now only that of a single stone. Plate xxviii. No. 1 gives a view of this wall passing up the slope till it joins the main enceinte.

Judging from the large quantity of stones strewing the ground around the whole fort, one sees that the defence must have been of immense strength in the period of its occupation. An ample water supply could be obtained by the inhabitants from streams in the immediate neighbourhood.

This fort forms a good example of a class in which the configuration of the ground has determined the plan of the defending walls. The builders merely strengthened a natural defensive position, the ground ever controlling their work.

Cnoc a' Chlochair ('The Hill of Assembly').—This fort (Fig. 2) is situated close to the junction of Gleann Easbuig ('The Glen of the Bishop') and Gleann an t-Suidhe ('The Glen of the Resting'),¹ and is the most inland fort on the island. The fort is built on a small hill which commands to the west an extensive view of the Shisken Valley. The vallum occupies the entire summit, and in common with all the Arran forts is constructed entirely of stones. The area enclosed measures east and west 144 feet, north and south

¹ This glen derives its name from the tradition that here St. Columba rested when crossing the island. A cairn marks the spot, and is still called Suidhe Challumchille ('Columba's Resting-place').

103 feet. An inner vallum divides the fort into two sections, forming an eastern and western enceinte. The eastern enceinte measures 47 feet from the division to the greatest extremity of the outer vallum, the western 77 feet. The vallum is constructed of rough stones; not a single worked stone being noted. It is in a ruinous state in all parts. We learned that the fort had been largely used in past days as a quarry for the building of dry dikes. Some of the

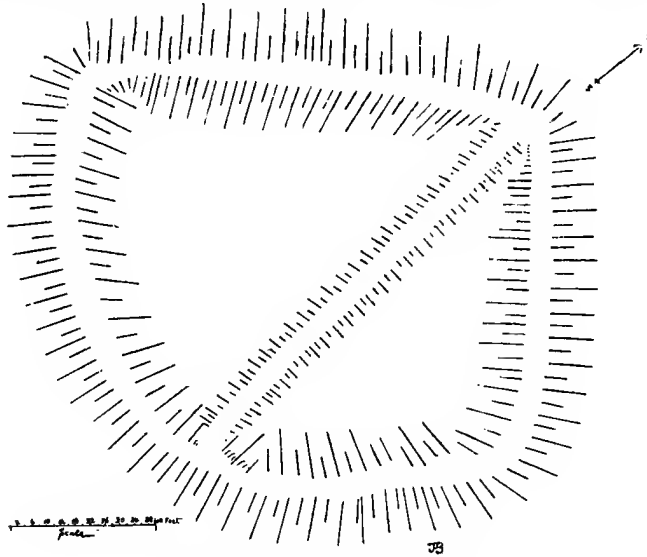


FIG. 2.—Plan of Cnoc a' Chlochair.

stones used in the vallum seem to have been of immense size. A number of these, that had fallen from their original position, or had been overthrown when the wall was being quarried, were recently utilised as base stones for a deer-fence.

No estimate can now be formed of the original height of the vallum; the average width, however, seems to have been from 6 to 7 feet. No portal was observed leading into either enceinte. A supply of water was easily obtainable.

Glencloy Fort.—This fort is described by Pennant¹ as follows:—‘A mile farther (from Kilmichael House) is a retreat of the ancient inhabitants called *Torr an-schian* castle, surrounded with a great dike. Here Robert Bruce sheltered himself for some time, under the protection of Maclouis.’ In the *New Statistical Account* it is referred to thus: ‘There are in different places in the parish what appear to be vestiges of ancient forts. One of these is on *Tornanshiain* (Gaelic, ‘The Fairy’s Mound’) in Glencloy, where it is understood that those of Bruce’s partisans who arrived in Arran before himself took shelter while the English held Brodick Castle in its neighbourhood.’² The name bestowed on the fort by Pennant seems at first sight to be widely different from that given by the reverend writer of the *Statistical Account*, but the difficulty of bringing them into agreement is not so great upon a closer view. Both writers spelled the Gaelic they used phonetically; in the case of Pennant it is obvious that he did not fully understand the meaning of the phrase, or he would not have terminated with the word castle, but would have used the word *caisteal*. In its early use *caisteal* indicated a fort or fortified place. Pennant’s designation could be rendered either as—*Tòrr an t-Sean Chaisteil*, ‘The Hill of the Old Fort,’ a name, as we have already seen, used for the structures at Lochranza and Sannox; as—*Tòrr nan Sìthean* (*caisteal*), ‘The Fairy Mound Fort.’ If the latter is accepted as the true rendering, then it is in agreement with the ‘Statistical’ name for this fort, and we are inclined to accept it as being the original name. The name ‘Bruce’s Castle,’ now sometimes used, is a modern appellation, and not a particularly happy one, as it is very doubtful that King Robert ever was there, and ‘castle’ is not too fortunate to indicate a proto-historic fort.

¹ *Tour in Scotland*, vol. ii. p. 211.

² *New Statistical Account*, Buteshire, pp. 23, 24.

Right above the bed of the Cloy Burn is situated the mound that forms the site of the fort. The mound is a part of the splendid series of moraines that form so notable a feature of Glen Cloy.¹ The 'Great Stone dike' mentioned by Pennant does not now exist, traces only of it are to be seen; from what remains above ground one can only surmise that the fort was a simple circular one possessing only a single vallum, without outworks of any kind. No data in the form of measurements of the vallum or plan of its disposition can be presented. The record has to remain, unfortunately, imperfect, as the present owner of this small portion of the island did not permit the site to be dug for the purpose of investigation, and his forefathers, probably for the erection of dikes, removed the overground works seen by Pennant about 1772.

Dùn Fionn ('The Fair Fort').—The eminence on which this fort was erected rises abruptly from the beach to a height of from 500 to 600 feet. The hill is remarkable for its green appearance, and is in conspicuous relief against the heather and rocks that form the surrounding ground. Of the fort hardly a trace remains of its stone work. The late James Bryce, LL.D., made the observation, 'A low mound, enclosing an elliptic space 40 yards by 16, is seen round the summit';² even this has in large measure disappeared. Headrick stated of *Dùn Fionn* that it 'seems to have been a vitrified fort such as abound in the North Highlands, though it is now concealed by soil and grass.' The reason for Headrick assuming that it belonged to the class of vitrified forts is certainly obscure; he evidently had not seen any trace of vitrification, and it is equally certain that no subsequent observer has found any in the scanty débris now only obtainable for examination. No Arran

¹ For particulars regarding the moraines, see note and illustration in 'Memoirs of the Geological Survey,' *Geology of North Arran and South Bute*.

² *Arran and other Clyde Islands* (1872), p. 79.

fort has shown any sign of even the least trace of vitrification.

Kings Cross Fort (Fig. 3).—This fort, while not by any means the largest on the island, or possessed of lines of defence of outstanding character, has features in regard to

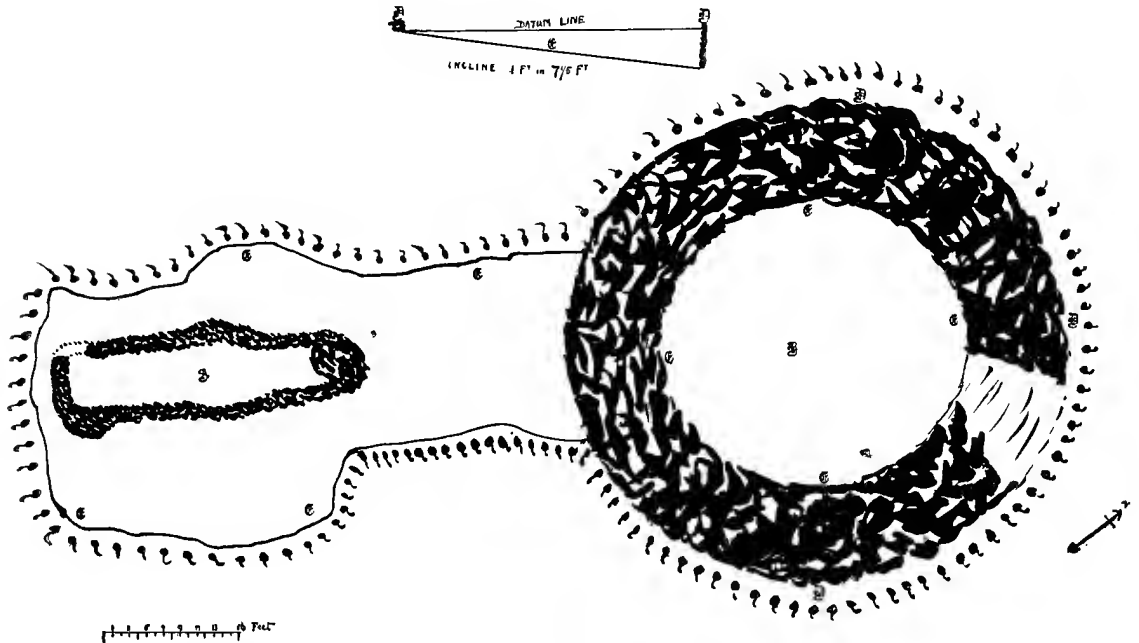


FIG. 3.—General plan of Viking Grave-mound and Fort, Kings Cross Point.
A, Grave-mound. B, Fort. C, Rock-surfaces. D, Vallum.

construction that demand for it more than mere passing interest, and strong enough to stamp it with something like an individual note. It is built on Kings Cross Point, the southern end of Lamlash Bay.

The fort is of the ordinary circular type, but has a slight tendency to the elliptical. When first examined the walls and court were almost level. It was evident that without excavation no reliable information could be obtained; this work was



Kings Cross.

On the right hand side of ridge is the Viking Grave-mound, on the left the Fort.

accordingly undertaken. The floor of the court was found to be formed by the rock surface round which the vallum is erected, only the inner portion of the vallum resting upon the rock, except at the south end where it crosses the ridge. The ridge of rock that is partially occupied by the fort is about 115 feet in length; the fort is at the seaward side, the landward portion has on it the Viking grave-mound described elsewhere. (Plate xxix.) The distance between the mound and the fort is 23 feet. The surface of the rock on the landward end is fairly level, but the portion enclosed in the fort area is very irregular, sloping rapidly to the N.N.W. It is to be observed that the base of the vallum at the southern end is 5 feet higher than the northern. This forms one of the remarkable features of this fort. At first it was supposed that the court had been artificially levelled, but such a theory was effectually dispelled by the finding of the remains of hearths at the lowest levels; charcoal and some fragments of bone and the burnt surface of the rock gave ample evidence that no such thing had been done. Life under such circumstances is beyond comprehension by the modern mind, but to the ancient, safety was the first consideration; comfort was a very secondary idea, as the builders of this stronghold showed when they enclosed a rock top without a single square yard of level foothold.

The court or enceinte measures at its great axis 36 feet, at the lesser 34 feet; thus, as we have stated, it is slightly elliptic in form. The greatest height of the vallum, as now remaining, is about $5\frac{1}{2}$ feet above the court at its lowest level. The lowest point of building is on the south-east face, there it is 14 feet below the highest point of the court; it forms the outer casing of the vallum. The illustration (Plate xxx. No. 1) gives a fairly good idea of the style of masonry. The vallum is constructed with an inner and outer casing of stones of considerable size, all showing signs, more or less, of having been worked; the space between the

casings is filled with rubble. The thickness of the vallum averages about $12\frac{1}{2}$ feet.

The important fact is to be noted that a considerable amount of red sandstone was employed in the building of the defence wall. There is no red sandstone in the vicinity of Kings Cross; the nearest quarry is at the Holy Isle, and the colour and texture of the stone correspond with the colour and texture of that obtainable there. It would be most interesting to know how the builders conveyed the stone across, but evidently they found transport easier than quarrying the trappean rock, of which there is plenty in the neighbourhood—at least no other reason is obvious. The position of the approach and portal of entry is somewhat doubtful, but from the existing remains it looks as though this had been on the eastern side, but as the vallum is most broken down at this point it may give that appearance without its being the case; at the first impression it seemed that the portal was on the south-west side, but we afterwards learned that the vallum had been broken at this point by some sailors rolling the stones out of position.

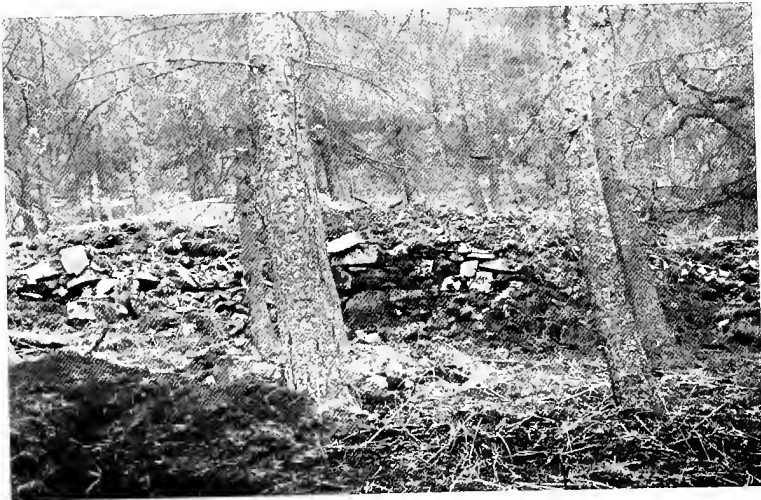
During the work of excavation nothing of great importance was found, all that was noted was—(1) charcoal and fragments of bone mixed together; (2) a glazed stone; (3) a piece of hæmatite iron ore showing signs of having been scraped or rubbed down, probably to form a paint or dye.

It is inevitable that particular attention should be directed to the remarkable situation created by the close proximity of this fort to the Viking grave-mound, and the question of their relative relation to each other. It is impossible to believe that the grave-mound was erected during the period of occupancy, or even of temporary abandonment, of the fort; the Northmen were unlikely to risk the desecration of their comrade's resting-place by placing it so near to the abode of their foes. Again, it seems improb-

FORT STRUCTURES.



1



2

1. Vallum of Fort, Kings Cross.
2. Vallum of Fort, Gleneasdale.

able that the fort would be erected after the mound, as the latter would always form an inconvenient obstacle in the direct approach from the landward side; nor is it likely that the Norsemen would have selected the landward site, if a seaward had been available. Archæological speculation is, at the best, dangerous, but perhaps there is reasonable ground in this case for the hypothesis that the fort is the older. In the Viking grave-mound red sandstone was also found, and the difficulty of obtaining it near at hand has already been stated, therefore the reasonable explanation seems to be that the grave-mound was erected with stones obtained from the fort. This being the case, the Norsemen forestalled the islanders in using the fort as a quarry, though the latter seem to have made the best of their opportunity later. Alas! how many torn pages of the archæological record of this isle and of Scotland do we owe to stone dikes or road metal. If the foregoing assumption is correct, then we have as date for the fort a period antecedent to the ninth century, the period of the coin found in the grave-mound.

There only remains to mention, in connection with the record of this fort, that of course it is quite impossible to state or form any opinion as to the original height of the vallum, owing to its reduced state by quarrying. For purposes of comparison it may be stated that the height of the court is 87 feet above sea-level. A supply of water was obtainable a short distance off.

Gleneasdale ('Glen of the Waterfall') *Fort*.—This fort is situated on the right bank on ascending the glen, and a little lower down than the waterfall. Many visitors to this glen (which they often call Glenashdale) fail to observe this structure, owing to the closeness of the trees round and within the fort itself.

The planting within the site rendered a proper examination of the enceinte impossible, as digging would have seriously

injured the growing timber. Observations were therefore confined to the vallum, with the addition of a slight opening up of a portion of the enceinte where the remains of a bloomery were observed; there was also observed a much more extensive smelting site a few yards farther west on the bank of a small stream. The slag found on each site was identical, and showed that much of the ore was still retained in it.

The vallum is semicircular in form, the ends terminating at the edge of the precipice that forms the descent for the cascade. This wall is about 15 feet in thickness, and to judge from the mass of stones lying around it, it must have originally reached a considerable height; it is now, in places, over 5 feet in height. The portal is to the north-east. The greatest width enclosed is 80 feet, that is at the extreme points of the vallum (Plate xxx. No. 2).

A strange feature in the situation of the fort is the fact that northward it is completely commanded by rapidly rising ground not a bow-shot off.

The height of the site is slightly over 500 feet above sea-level. Water is obtainable a few yards distant.

Dippen Fort.—The site marked on the Ordnance map was examined, but it proved to be only a *natural defensive position* formed by the cliff. Not a single trace of the work of man was observed in any way to warrant the assumption that the position contributed one of the defensive sites of the island.

Kildonan Fort is situated on the cliff edge, at an altitude of about 280 feet above sea-level and 385 feet back from high-water mark. The site is an uneven plateau, measuring north and south 122 feet by 54 feet east and west. A vallum extended along the western and northern sides; there is no trace on the eastern and southern sides of any defence construction; an almost perpendicular ascent rendered this superfluous. The vallum shows an apparent thickness of about 8 feet, but has been much plundered;

the parts remaining of the wall show careful construction. The situation is fairly defensible. There are now no features of outstanding or noteworthy interest in connection with this site.

Bennan Head Fort.—This site was examined, but no definite structural remains were observed. The hill in several places showed traces of primitive agriculture.

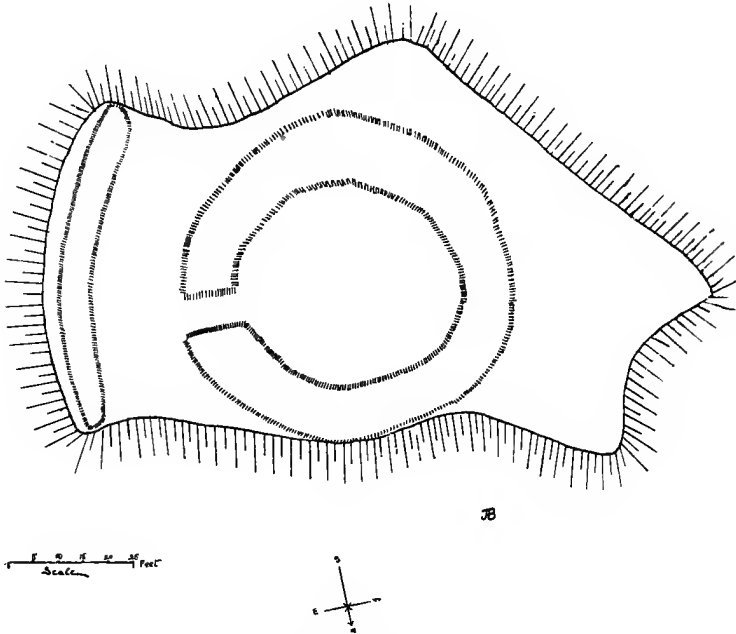


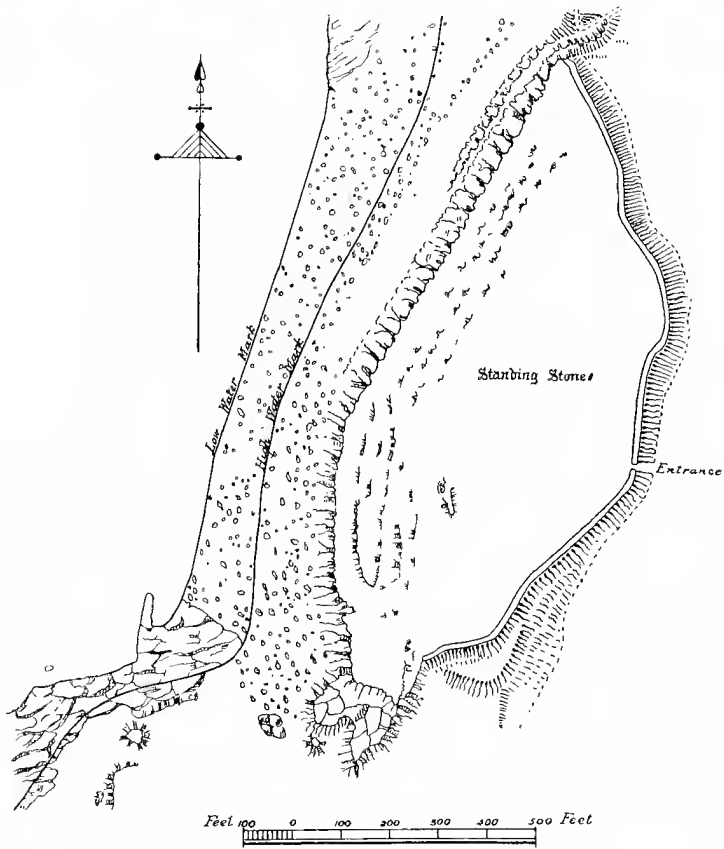
FIG. 4.—Plan of Torr a' Chaisteil, Corrieeravie.

Local tradition is all in favour of this having been the site of a fort, but the evidence as far as gathered was not of a conclusive nature, though the site is one that might readily have been chosen by the fort-builders.

Torr a' Chaisteil ('Hill of the Fort').—This fort occupies a position on an almost detached portion of the old coast-line at Corrieeravie, and is separated from the present shore only by a few hundred yards of level ground, raised but little



1



Angus McAlister C.E.

2

THE DOON FORT, BLACKWATERFOOT.

1. View from the North.
2. Plan of the Fort.

M'Arthur's *Antiquities*, but much reliance cannot be placed on many of his observations, their inaccuracies precluding the idea of personal observation.

The Doon (a corruption of Dùn).—This fort, by far the largest on the island, occupies a commanding position on a headland near Blackwaterfoot known as Drumadoon Point. The view of the Doon, as seen from the shore on the north side, is most impressive; high masses of stone lie in confusion at the base, then straight and clean rises for 80 to 100 feet a façade of porphyritic columns, which are roofed with verdure (Plate xxxi. No. 1).

The fort occupies the entire summit, and encloses an area of nearly 12 acres. The height above sea-level is about 200 feet. Only on the landward side is there any trace of defence works having been erected; seaward, it is, in consequence of its geological formation, such a strong natural defensive position, that the hand of man could add nothing to strengthen it. The vallum was curvilinear, but can only now be traced by a mere track of stones, so much has it been quarried. The original thickness of the vallum is somewhat doubtful, but probably it was 10 feet or thereby. The portal or gateway, though it may clearly be seen, has been so plundered, at its sides, that it is now impossible to estimate its original width (Plate xxxi. No. 2).

The observations of Pennant regarding this structure are, unfortunately, somewhat confusing, for he says: 'Descend through a narrow cleft of a rock to a point of the western shore called *Drum-an-diin*, or the "Ridge of the Fort," from a round tower which stands above'; and again he states, 'Through one (an arch at the King's Cave) is a fine perspective of the promontory *Carn-baan*, or the "White Heap of Stones," whose side exhibits a long range of columnar rocks (not basaltic) of hard grey whinstone resting on a horizontal stratum of red stone; at the extremity one of the columns is insulated and forms a fine obelisk. After riding some time

along the shore, ascend the promontory; on the summit is an antient retreat, secured on the land side by a great dike of loose stones that enclose the accessible point; within it is a single stone, set erect perhaps to mark the spot where the chieftain held his council, or from where he delivered his orders.’¹ There can be no doubt that Pennant’s description of what he calls ‘*Carn-baan*’ is, in every particular which he gives exactly, that of Drumadoon, but the writer is quite unable to indicate any place as described under ‘*Drum-an-dùin*.’ Pennant had been visiting the circles at Tormore and was proceeding to the King’s Cave, and he would probably reach the shore through the cleft of the rock at Bealach an Fheadain, but remains of a tower, even by tradition, in this neighbourhood are unknown.

Martin thus refers to the fort: ‘There is an Eminence of about a thousand Paces in Compass on the Sea-Coast in *Druimcruney* Village, and it is fenced about with a Stone-Wall. Of old it was a Sanctuary, and whatever number of Men or Cattle could get within, it was secured from the assaults of their Enemies, the Place being privileged by Universal Consent.’²

Perhaps the most interesting of the observations regarding this fort made by visitors of an early period are those of Headrick. His description is as follows: ‘The ascent to this rock from the land is a deep inclined plane, and it is enclosed by a vast mound of loose stones, forming a segment of a circle from the perpendicular cliff on one side to that on the other. It has a gateway in front, on each side of which are great heaps of stones, which seem to have been additional works for its defence. This mound includes several acres of land, in which are several ruins of houses of loose stone.’³ The houses mentioned by Headrick were

¹ Pennant’s *Tour in Scotland*, vol. ii. pp. 206-208.

² Martin’s *Description of the Western Islands of Scotland*, p. 221 (London, 1703).

³ Headrick’s *View of the Island of Arran* (Edinburgh, 1807), p. 158.

probably huts of the bee-hive type, but not a trace of them remains. It calls for comment, that, in an interval of little over a hundred years, a powerful vallum has become almost obliterated, and that not a trace of buildings then seen can now be found.

The small standing stone near the entrance was dug round; it has but a shallow sinking into the ground, and no evidence was obtained as to its purpose.

A spring of water was noted within the enclosed area.

General Observations Regarding the Fort Structures.—It will have been noted that the Arran forts are all more or less circular in form, the only exception being the doubtful structure at Lochranza, and the only instance of a rectilinear vallum being the one in Cnoc a' Chlochair fort. The question naturally arises why there was such a general disposition to make these structures round. It can only be accounted for by supposing that the builders had arrived at the perfectly sound principle, doubtless through experience, that a curved wall offers greater power of resistance than a straight one; yet the persistent tendency to roundness of structure of primitive builders does not seem to be wholly explained by these considerations. It may be that the *spiritual* side of the Grecian myth of Ixion, not essentially part of Greek thought alone, but rather possessed of universality, may have played a part as a determining factor; this can only be suggested, as we cannot estimate their natural philosophy, far less their moral.

The thickness of the walls of the 'fort' may at first thought seem surprising, but reflection shows that with dry building, stability could only be obtained by working on a broad base if the structure was to be carried to any height.

A feature all the forts have in common is that no foundations were dug—the base is always found on the original level; this is particularly interesting in the case of the fort

at Kings Cross, where there is a variation of a number of feet in the level at which the base is got, due to the fact that the wall was carried down the slope, till a firm hold was obtained on a natural level.

No fixity of architectural plan is to be observed in the manner of the construction of the vallum. Kings Cross and Corriecravie forts have alone the same form, viz., two circular concentric walls of well-laid stones of considerable size, with the intermediate space filled with rubble.

Unfortunately the Arran forts have yielded but little in the way of relics : from Kings Cross, which seemed promising, nothing was obtained informing as to date ; from Corriecravie only a quern-stone, of a somewhat primitive type. The Sannox fort was not a promising field to search, through the outcrop of rock within the court ; the Doon is such a vast area that systematic excavation would have been a great undertaking, probably not worth the cost.

II.

There is another form of human habitation very widely distributed over the island, more particularly in the south and west parts ; these are circular structures usually interrupted with openings towards the south or south-east : to describe these buildings the term 'Hut-circles' has been employed. The number of hut-circles on the island is so great, that the exact enumeration and distribution could only be ascertained by minute examination, such as that of the Ordnance Survey. In Arran none of the groups of circles are as yet noted on the Ordnance map, though they are given in some of the maps of other parts of Scotland—perhaps in Arran they were found to be too numerous to record.

A representative hut-circle is shown in plan (Fig. 5) ; it

forms one of a group on Tormore Moss. The circle illustrated measures to the outer edges 56 feet, with a court of about 28 feet in diameter. The wall is constructed with a central core

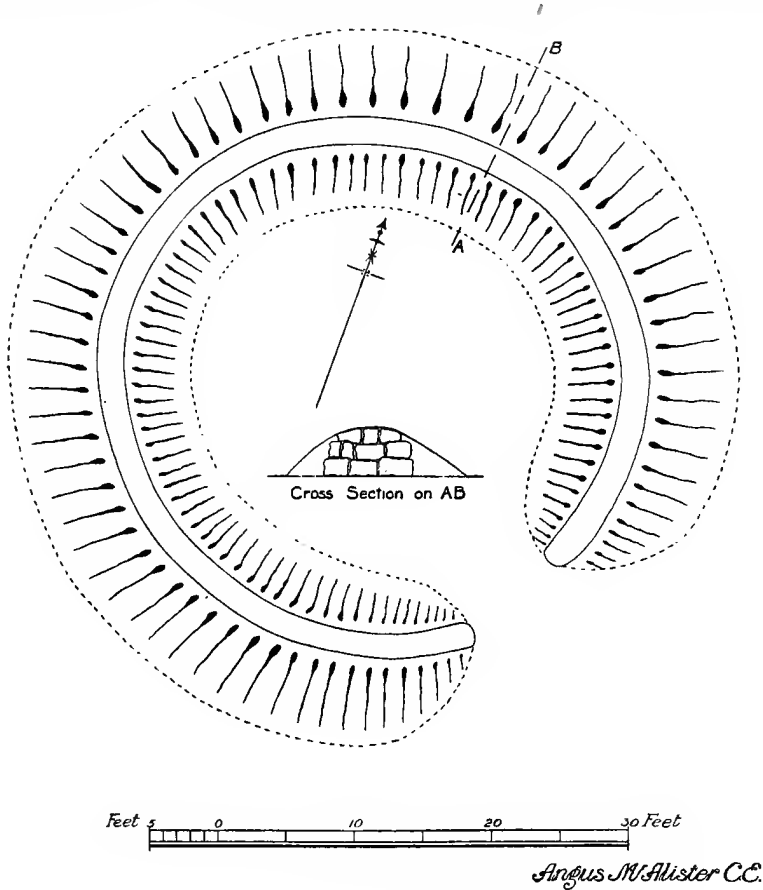


FIG. 5.—Plan of Hut-circle.

of well-laid stones, measuring rather over 7 feet at the base, with sloped sides of earth, and with a covering of the same on the top, thus being arch form in cross section. The entry is unusually large in this case, measuring about 7 feet wide.

On a section of the court being dug, it was found to have

a flooring of sand, while several other courts in different parts of the island exhibited only a flooring of the natural hard till. It may be taken as the general rule that the hut-circles on the island had been cleared of the natural soil down to the till; even without excavation most of them show a saucer-like depression. The finding of sand in this case is certainly exceptional, and it seems to have been imported, as sand was not observed in any of the sections of soil shown by peat-cutting on the Moss.

The hut-circles conform to one general rule as regards the construction of the vallum and its form, and their height is usually about 4 feet.

The variations noted in them are as follows :—

First. The diameter of area enclosed, forming the court, varies considerably. Twenty to thirty feet is the usual diameter, but less and greater may be seen.

Second. A portal is sometimes formed of stones projecting several feet beyond the circle. Three to four feet of width is usual in these portals, but less and more have been noted.

Third. Sometimes chambers have been constructed within the vallum.

Fourth. The openings vary from south to east.

Fifth. A mound of earth guarding the entry.

Up to the present time no investigator in Scotland has discovered any relics that indicate the period of occupation of these circles. The groups are doubtless the remains of villages; but when this form of living was abandoned is as yet unknown, though in the islands it is quite possible it was continued well down into modern times. Until some archæologist discover definite relics within them, much uncertainty regarding them must prevail. The doubtfulness of getting remains has up to now proved deterring to research, and this cannot be wondered at considering the work involved, and that there are more seemingly attractive fields to explore.



I



2



3

IRISH-CELTIC MONASTERY, KILPATRICK.

1. Wall of Circular Building.
2. Showing Cashel or enclosing wall in foreground, and beyond it the circular building.
3. Cinerary Urn *in situ*.

AN IRISH-CELTIC MONASTERY.

By THE EDITOR.

THE first period of the native Church of Ireland was one of individual effort—zealous men throwing themselves against the ranks of heathenism. The meagre accounts now available of the work of the Church at this time render it exceedingly difficult to measure the amount of its success, but, as far as can be gleaned, it failed to make lasting impression. Then came the second period, when the whole organisation of the Church was altered, and a most remarkable amount of vigour infused into it. This second period introduced the monastic element, which quickly spread, until the entire Church was composed of a clergy subject to monastic rule. The monasteries were planted in the midst of pagan settlements as a leavening power. It was only by this means adopted by the Church of establishing bands of Christian colonists, it became reasonably possible for Christianity to overthrow the pagan dominion. There were, however, exceptions to the plan above, as a number of monasteries were built on small islands. This must have in some degree militated against their influence on the general outside community, but these isolated communities may have been places for special training.

In dealing with the monasteries of the Celtic Church of Ireland, we must dismiss from our mind every idea but that they were of the most simple description. They bore no more resemblance to the elaborate ‘rookeries’ that Knox,

in our land, set himself to pull down, than a beehive house bears to the Castle of Arran. The first monasteries were indeed planted within fortified enclosures gifted to them by pagan chiefs. It is true that, by reason of the work for which they were constructed, the monasteries assumed special features peculiarly marking them as buildings for Christian worship, but they always retained the characteristic features of their first beginning. Thus we find these early ecclesiastic settlements always surrounded by a wall; this wall was sometimes constructed only of stones, and was termed a rath, or, more frequently, of earth and stone, and was then called a cashel. The word cashel, by extension of its meaning, is now used for indicating a primitive ecclesiastical settlement. Within the cashel were erected circular huts of stone or wood for the accommodation of the inmates; also a strong building, likewise circular, for safety and the keeping of the treasures belonging to the community; while a further special feature was an oblong building either of stone or wood, forming the *Daimhliag* or church, in Latin rendering, 'ecclesia.'

An interesting example of utilising a pagan fort for the purpose of an ecclesiastical settlement is furnished in the Irish record of the early life of St. Columba. 'Columcille then went to Daire [Derry], that is, to the royal fort of Aedh, son of Ainmire, who was king of Erin at that time. The king offered the fort to Columcille, but he refused it because of Mobhi's command. On his coming out of the fort, however, he met two of Mobhi's people bringing him Mobhi's girdle, with his consent that Columcille should accept a grant of territory, Mobhi having died. Columcille then settled in the fort of Aedh, and founded a church there.'

These monastic establishments became very numerous: we learn, for instance, that St. Brendan of Clonfert founded so many cells and monasteries that three thousand monks

were accommodated in them, as is affirmed by tradition.¹

It is not in any way surprising that a missionary spirit, with so much zeal, should have made itself felt, and thus we find a stream of Irish monks spreading themselves over Europe in the sixth century. It is, however, of more particular interest to note their incursion into the Scottish kingdom of Dalriada.

Before entering upon the story of the coming of the representatives of the monastic Church of Ireland, it is perhaps but fitting to review briefly the outstanding features of the Dalriadic kingdom. In the fifth century the three sons of Ere—Fergus Mor, Loarn, and Angus—left the Dalriada district of Ireland, and established themselves as colonists in a portion of the west of Scotland. They formed three tribes: the Cinel Gabran, who possessed the lands of Kintyre, Knapdale, Arran and Bute, and the lesser isles off these coasts; the Cinel Angusa were in Islay and Jura; the Cinel Loarn were in possession of the district of Lorn. These Irish colonists were, at least, nominally Christian. Thus, when, about half a century later, there came the founders of the Scottish Church, it was, it should be remembered, not to an alien race, but to their own people and lands, they came in the first instance; and from the institutions they founded amid these surroundings were sent forth the missionaries to the Picts and Britons. In the *Acta S. Brendani* it is stated that this saint visited the Western Isles, and founded a monastery called Aileach ('the stone house') and one in Heth—with Heth the island of Tiree has been identified. It has proved a subject of difference of opinion as to where Aileach was built. Skene states 'one of the small islands forming the group called the Garveloch Isles, bears

¹ 'Deinde cellas et monasteria fundavit in sua propria regione et multa monasteria et cellas per diversas regiones Hybernix fundavit in quibus tria millia monachorum ut perhibetur a senioribus sub eo erant.'—(*Acta S. Brendani.*)

the name of Culbrandan, or the retreat of Brendan. This island is next to that called *Eilean na Naoimh*, or the Island of the Saints, and as the latter appears to have borne the name of Elachnave, it is not impossible that here may have been the monastery Aileach. This visit to the Western Isles took place before the foundation of his principal monastery in Ireland, that of Clonfert, the date of which is known to have been 559; and we shall probably not be far wrong if we fix the year 545 as the probable date.¹ Dr. Skene's conclusion is the more remarkable, as it ignores the evidence that it was Saint Columba, and not Saint Brendan, who founded the monastery on Eilean na Naoimh. In the life of Saint Columba we read: 'Alio itidem in tempore, vir venerandus Ernanum presbyterum, senem, suum avunculum, ad praeposituram illius monasteri transmisit quod in Hinba insula ante plures fundaverat annos;'²— 'At another time, the venerable man [Columba] sent Ernan, his uncle, an aged priest, to preside over the monastery he had founded many years before in Hinba island.'³

It is to the credit of Dr. Skene that he was able to show that by the Hinba mentioned in the text is indicated the island now known as Eilean na Naoimh,⁴ yet he overlooked the statement that it was St. Columba who founded the monastery there. We must therefore look elsewhere for Brendan's Monastery of Aileach. The association of the name of Brendan with that portion of the estuary of the Clyde that stretches from the Mull of Kintyre past the coasts of Kintyre and Arran, designated the Sound of Kilbrannan, and the fact that the people of Arran and Bute were of old termed 'the Brandanes,' cannot be overlooked as unimportant in the investigation.⁵ Where is that Kilbrandan, or Church of Brendan, which gives the name to the Sound?

¹ Skene's *Celtic Scotland*, vol. ii. p. 78.

² *Historians of Scotland*, vol. vi. p. 143.

³ *Historians of Scotland*, vol. vi. p. 33.

⁴ *Ibid.*, p. 318 *et seq.*

⁵ According to the 'Martyrology of Aberdeen,' St. Brendan was patron of Bute (see Forbes's *Kalendars of Scottish Saints*, p. 286).

The claims of Kintyre are set forth by Captain White in his *Archæological Sketches* as follows:—‘See then, what a hold the associations of this celebrated western saint [Saint Brendan] have got in this locality; and there being apparently no other ecclesiastical site in Arran or Bute which would account for the name of the Sound, we are forced to bring home these associations to the neighbourhood of Skipness.’¹ We know of no stronger claim for Kintyre than that given by Captain White; but with his conclusion that it was the small church, locally known as Kilbrannan Chapel, at Skipness that gave the name to the Sound we cannot agree. He confesses that the chapel is described in a Paisley Charter by the name of St. Columba’s; this he regards as perhaps the error of a scribe; that is unlikely, it is more probably the older name. Further, and this has a more important bearing on the question, the chapel is one of no outstanding character, of thirteenth-century origin, and was under the oversight of Saddell Abbey. It is quite impossible to credit that this small dependent chapel could give its name to the Sound, and thus the best claim of Kintyre to the honour has to be set aside. It is not unimportant to remember that St. Brendan always built his churches within monasteries, and not independently of them.

When Captain White assumed that there was no ecclesiastical site in Arran that could have served to give the name to the Sound, he was unaware that there existed such a site; there are remains of an ecclesiastical settlement, such as might have been founded by St. Brendan himself during his visit about the year 545 A.D. This site had escaped observation till the present survey was being made, and the discovery is additional evidence of the value of systematic examination and exposure, within defined areas, of all memorials of the past.

This cashel (Plate XXXII.) or monastery site is situated on

¹ *Archæological Sketches in Scotland—Kintyre*, by Captain J. P. White, p. 182.

the northern shoulder of the Leaca Bhreac ('the speckled hill-face') that terminates at the hamlet of Kilpatrick. The site is a plateau of fairly level ground, at an elevation of about 300 feet above sea-level. From the site a large view is obtained of the fertile vale of Shisken; it commands, too, the entire length, almost, of Kilbrannan Sound; and a few yards west, in advance of the cashel, the coast of Ireland is seen, during clear weather, when looking southward. It is doubtful if a finer site could have been obtained on the whole island of Arran.

The cashel, or enclosing wall, is composed of earth and stone; its total length is 1180 feet, and, as will be seen from the plan (Fig. 1), its direction is more or less curvilinear. The average thickness of the wall is 5 feet 1 inch, the greatest thickness noted being 7 feet 9 inches; the existing height is slightly under 4 feet. The area enclosed by the cashel amounts to 2 acres 1 rood 31 poles 22 $\frac{1}{4}$ yards. The gateway seems to have been at the point marked with a cross on plan; unfortunately, however, this part of the cashel has been damaged through the erection of a shooting-butt which here intersects the wall, and is built of it. The reason for believing that this was the gateway is that, attached to the cashel at this part, are traces to the outside of some building, the shape of which, though now indefinite, indicates some form of guarded entrance. No building of any sort attached to the cashel was found on the outward side at any other part. The existing remains could conform to the example referred to by Petrie, at the establishment of Saint Molaise¹ on Inishmurray, as being quadrangular, and measuring 4 feet in breadth and 7 feet 6 inches in its jambs, which he stated 'is the usual size and form of gateways found in such buildings.'²

Within the cashel there now remain only the foundations

¹ This is not the Saint Molaise associated with Arran.

² Petrie's *Ecclesiastical Architecture of Ireland*.

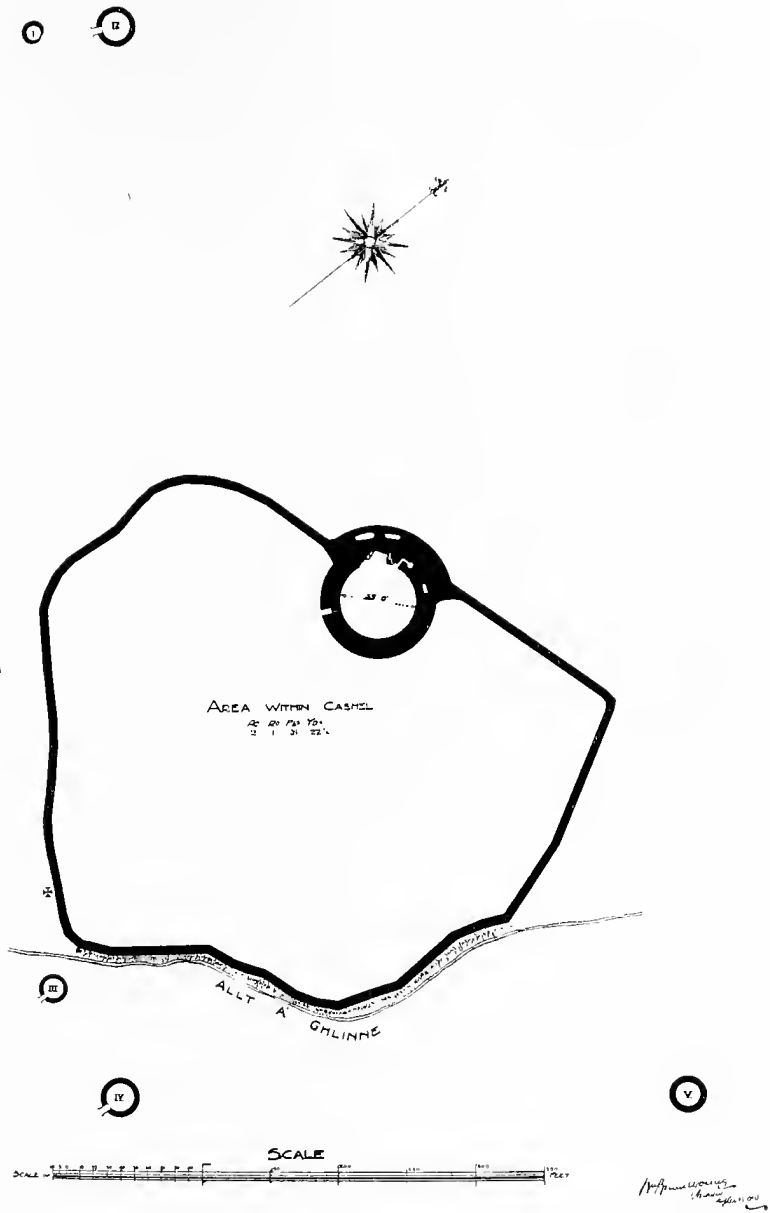


FIG. 1.

2 C

of a single circular building; this is incorporated with the cashel at the northern end. When first seen it was overgrown with heather; this had to be destroyed before the work of excavation was possible. The circular building has a court measuring 55 feet in diameter. This court when dug up revealed the fact that, when in use, it must have been cleared of soil down to the hard, stony subsoil or till; even now the covering soil is only a shallow layer. The walls are constructed with an inner and outer casing of stones, formed to the round by the use of stones of varying length, the space between being filled with rubble stones; the width is 12 to 14 feet, except where it becomes part of the cashel, and here the width of 27 feet is attained. At the north and north-east, within the thickness of the wall, are four chambers; they measure as follows, and the numbers are as those on plan (Fig. 2):—

1. 6 feet long, $2\frac{1}{2}$ feet wide, 3 feet deep.

2. $7\frac{1}{2}$ feet long, $2\frac{1}{2}$ feet wide, $3\frac{1}{2}$ feet deep.

Chambers 1 and 2 are only separated by the thickness of a single stone.

3. 13 feet long, $4\frac{1}{4}$ feet wide at square termination—this chamber enters from the court; the depth is now only that of a single setting of stones.

4. 6 feet long, 4 feet wide, 2 feet deep.

These chambers are all paved on the floor. Access to Chambers 1, 2, and 4 must have been obtained by passages in the thickness of the wall. At this point the masonry is of fairly large stones, rubble being only employed at intervals, and mostly to the outside the chambers.

The most striking feature of the court is the presence of three large blocks of stone, as shown in the shaded portions of the plan. The stones measure as follows:—

No. I. is 10 feet long and averages 3 feet 10 inches broad. It rests on No. II., which measures 6 feet long and 2 feet 9 inches broad; small stones are wedged between the two

blocks ; at the back of No. I. is a slab of stone embedded in the surrounding masonry. No. III. is 7 feet long, with an



FIG. 2.

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Archaeol.
Glasgow*

average width of 3 feet. It is difficult to offer an opinion as to the use to which these stones had been put, though it is

possible that Nos. I. and II. are the steps of a stair, leading originally to passages within the walls.

The portal of the circular building is apparently at the south-west, but the structural arrangements are largely obliterated, this portion of the structure having been considerably quarried. Excavation revealed a paving which extended over the inner half of the distance between the outer and inner sections of the wall. The breadth of the passage left is 4 feet; the side walls are formed by large stones. At the end of the paving the existing remains indicate that the passage must have contracted on the outward side. Thus, if this be the true entry, then it has apparently been checked before the outside was gained, as is seen in the broch structures.

The ground within the cashel was carefully examined, without being dug, except where one or two stones were showing. The search revealed nothing in the way of foundations of other structures, but it was perfectly evident that the ground had been, at a later period, under cultivation. That the other buildings belonging to the cashel had disappeared is not surprising; the simple type of structures within cashels, being only dry-built with hardly any foundations, could be easily removed. The buildings even may have been of wood, as this was commonly employed. The stones used in the erection of the cashel, and the circular structure, were the blue-grey porphyry that abounds in great blocks over the hill, which abundance has earned for it the name of Leaca Bhreac. On the rocks higher up the hill than the cashel being examined, one block was observed evenly split into two parts, and with a stone wedge dropped in between the sections to keep them apart, perhaps the work of these early builders.

In more or less association with the cashel are five hut-circles—two to the west of it and three to the east. The western are distant by about a hundred yards, the eastern

are only a few yards off. The relation is shown in Fig. 1, and they measure as follows :—(1) 32 feet in diameter, with no visible entry ; (2) $48\frac{1}{2}$ feet in diameter, with portal extending beyond circle ; (3) $45\frac{1}{2}$ feet in diameter, with portal extending beyond circle ; (4) 45 feet in diameter, with portal extending beyond circle and with a chamber in wall ; (5) 42 feet in diameter, with no visible entry. The portals open to the south-east. Circles 2 and 4 were partially dug, but nothing of interest was revealed either in structure or relics. Circle 2 had a quantity of stones at the north side that may have been the remains of an interior hut, but they were in such confusion as to make any satisfactory conclusion impossible. These hut-circles may have been for the accommodation of lay dependants attached to the monastery.

During the progress of the work of examination of the cashel an interesting discovery was made : this was the finding of a short-cist burial in the wall of the circular structure. It had been observed that a line of large stones intersected the rubble a few feet away from the portal ; as on the surface no reason was apparent for this feature in the construction, the rubble was cleared away by the side of this wall, as it proved to be, and a flag was reached ; on this being lifted, a cinerary urn was found in a short cist. The purpose of the wall was then made clear ; it had been erected to prevent the rubble from falling into the cist. The builders had evidently come upon this burial of an earlier period, and left it undisturbed. The cist measures 1 foot wide, and the side stones (east) 1 foot 4 inches and (west) 1 foot 2 inches ; the long axis is north and south (10° off N. and S.). The distance between the covering flag and the stone on which the inverted urn rested is 8 inches. The height of the urn when found was 6 inches ; it is broken, and 2 inches would not have let it clear when whole ; it seems therefore a reasonable inference that the urn was broken at or before the building of the structure, and

assuredly all the urn was not in the cist. The urn is of a cinerary type, without decoration of any kind, and, as far as can be judged, closely resembles in size and shape one found in the Culbin Sands, now in the National Museum of Antiquities. The urn was filled with calcined human bones. No implements were with it.

This cashel represents an almost obliterated page of the annals of our land. What can these walls tell us of the men who laboured within them, or the work they accomplished? Nothing. Its history is forgotten; not even the slightest tradition remains among the people concerning it. The name of the hill that guards it—Tòrr an Dàimh ('the hill of the church')—is the only known memorial, save the record furnished by the cashel itself, that this was one of the first outposts of Christianity in Scotland. The cashel shows itself to be, not a native, but an imported, type of structure: as indicated at the commencement of this article, we must look to the early years of the monastic Celtic Church in Ireland for its origin. We see in the surrounding wall a structure which has degenerated from a wall of defence, as in the pagan structures, to a mere screen from the outer world.¹ The circular structure no doubt served for protection in case of need; like the round tower found associated with the monasteries of the later period of the Celtic Church, that is, from the ninth to the twelfth century, of which perhaps it was the prototype.

As previously stated, these monasteries were first planted within the Dalriadic kingdom, and remains beyond its confines are, in Scotland, exceedingly rare. Some of these Dalriadic sites are as follows:—

Bute. Dr. Joseph Anderson has described one associated with St. Blane's Chapel as follows: 'About 50 yards to the west of the church, a line of cliff forming one

¹ The cashel site was useless as a defensive position, and the wall was clearly not planned with any view to protection.

side of the little valley runs nearly north and south, and along its base is an irregular talus of rocky fragments, mixed up with which are here and there remains of rude dry-built walling, apparently forming parts of roughly constructed chambers of irregular circular and oblong forms. Nearly 100 yards to the north-west, and close under the shelter of the cliff, is a larger dry-built structure much more solidly and regularly built, consisting of a wall about 9 feet thick, enclosing an approximately circular area of about 30 feet in diameter. The wall is still complete in its inner circumference, rising to a height of from 2 or 3 feet to nearly 10 feet at the highest part, and showing an entrance at the south-east side nearly 4 feet wide at the outside, narrowing slightly to the inner side. A massive dry-built wall, about 4 to 5 feet thick, encloses the precinct, including the church and churchyard, as well as the remains of dry-built constructions, and a considerable area around the whole group. Starting from the cliff a few yards to the north of the circular structure, the enclosing wall keeps well out to the eastward of the church till the space enclosed between it and the cliff reaches about 150 yards in width, and then winds to the south till it comes towards the cliff again, at a distance of fully 200 yards to the south of the circular structure. The area thus enclosed is thus approximately half of an oval of 200 yards by 150 yards, bounded lengthwise by the line of the cliff.'¹

Eilean na Naoimh has also been described by Dr. Anderson, and he thus defines it: 'This island is small, not over a mile in length, and uninhabited. To this circumstance the preservation of the remains is due. They consist of a series of small cells built of dry-stone, in the manner in which the cells on St. Michael's Rock, those of St. Fechin's monastery on Ardoilean, and those of the monastery of St. Molaise on Inishmurray are built. There is no cashel on *Eilean na*

¹ *Proceedings of the Society of Antiquaries of Scotland*, vol. xxxiv. p. 308.

Naoimh ; but there is no rule without its exception, and though the fortified enclosure was the rule in places where the natural features of the site required the construction of a stone wall for this purpose, it is probable that when the isolation of the site gave a sense of security to the inmates they would dispense with such laborious efforts.'¹

Kerrera. The cashel on this island has been described as follows : ' Let us row across to Kerrera, to the northern bank. Now this was the populated portion of the shores here, and I do not doubt that the island was of some importance. There is a little flat portion, on which is a burying-ground, called *Cleigh Bhearnaig* or *Cleigh na Bhearn*, the burying-place of the gap or notch. And one sees a peculiar cleft in the little hill there, as if a hatchet had cut it open. We do not imagine this to have been merely a place for burying in, as we see clearly the remains of the houses ; at any rate, I know of no such burying-places among the places here. These are evidently oblong dwellings, and the collection of dwellings is surrounded by a wall. More than this, at the extreme north there is a very solid projecting building which gives the idea of a watch-tower, and just on the point where such a thing would be useful.'²

Iona. There can be little doubt that the monastery founded by Columba on this island was of the cashel type ; but the successive structures erected have no doubt obliterated the traces of the primitive beginning of this, the most famous of Scottish ecclesiastical settlements.

There is no record of the number of these Irish-Celtic monasteries erected within the Dalriadic kingdom, and beyond its confines in Scotland ; and the number even of existing remains cannot be known till a complete archæological survey of Scotland has been made. The examples given are to be taken, therefore, not as forming a list of such structures,

¹ *Scotland in Early Christian Times* (First Series), p. 95.

² *Loch Etive and the Sons of Uisnach*, pp. 83-4.

but as similar structures with which that of Kilpatrick may be compared.

It may be for ever an open question, as to whether or not the monastery of Arran is the Aileach of St. Brendan ; but as far as at present known, Arran presents a strong claim, nay, a stronger claim than any other place, for the honour of having had planted on her shores one of the first ecclesiastical settlements in Scotland, and that at the instance of one of Ireland's most famous saints.

[For examples of primitive Monastic establishments in Ireland, the student is referred to Lord Dunraven's *Notes on Irish Architecture*, edited by Miss Margaret Stokes, London, 1877.]

HISTORIC PERIOD

THE KING'S CAVE

CHAPELS AND SCULPTURED STONES

ON THE EFFIGY OF AN ABBOT AT
SHISKEN: WITH A NOTE ON THE
FORMS OF VESTMENTS ON WEST
HIGHLAND MONUMENTS

THE CASTLES

THE HOLY ISLE

RUNIC INSCRIPTIONS. CELL OF SAINT
MOLAISE



I



2

1. The King's Cave.
2. Fragment of a Bronze Ornament found in the Cave.

THE KING'S CAVE.

By THE EDITOR.

THIS cave, which is supposed to have been a retreat of Robert the Bruce when that monarch was in hiding in Arran—hence the name King's Cave—and was, according to legend, once a favourite residence of members of the Fingalian group, is situated between Machrie Bay and Drumadoon Point.

The cliff, in which the cave forms a sea-worn recess, is composed of a fine-grained, hard, white sandstone, with a belt of red of the same texture interposed (Plate xxxiii. No. 1). The total length of the cave is about 118 feet, that is, taking the measurement to the end of the passage on the eastern side. As this passage is almost blocked with stones, and access is only possible by crawling snake-like over them through the narrow cleft in the rock, an error of a foot or two is possible in this measurement. The greatest width is 44 feet, and the greatest height, from the existing floor level to the roof, is nearly 50 feet.

In January 1909, the work of examination of this cave was entered upon. Before we proceeded with the excavation, a datum line was drawn from the pillar-like buttress of rock which divides the cave to a point within the entrance, that is to say, for 67 feet. This line was divided by cross sections every 10 feet of its length, the sections being numbered from the entrance inwards (Fig. 1).

The surface soil in Section I. was about 18 inches in depth; followed by water-worn stones, mixed with soil of the same

nature as on the surface, and at a depth of 7 feet the cave-bed was reached. Only in some of the crevices of the cave-floor was sand found, and then but trifling in quantity. In this section all that was obtained was two boar tusks,

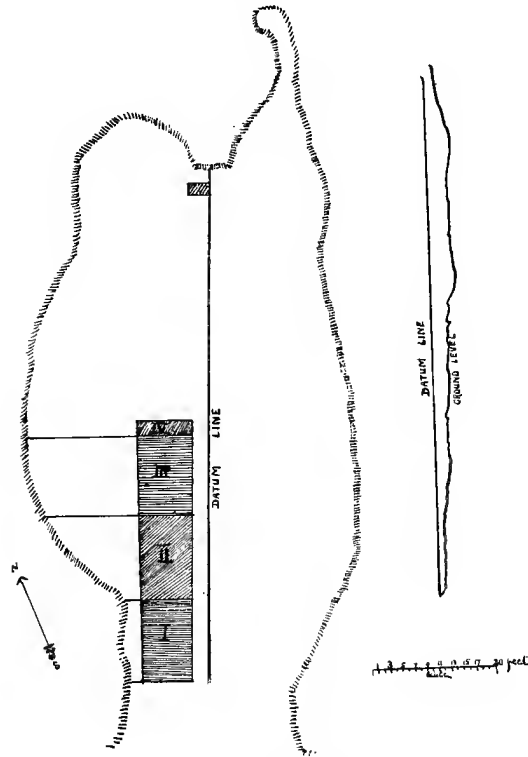


FIG. 1.—Plan of King's Cave.
(The shaded portion represents the sections dug.)

a red deer antler partly cut, and a few bones belonging to these animals.

On work being resumed the second day, it was found that large portions of the soil on the sides of the trench had fallen in, and it required some hours of work to remove this débris, before Section II. could be touched. For the safety

of those engaged in the work, it was found necessary to slope the walls of the trench from 10 or 12 feet at the top to 5 or 7 feet at the foot. This was done with reluctance, as any change in stratification is not so quickly observed in a sloped trench as in a perpendicular, nor was it possible to keep the length quite straight, so large were some of the boulders removed.

Section II. presented the same general features as Section I., except that the surface soil was somewhat less and the bed a few inches higher. This section, however, proved to be the most interesting. Three and a half feet from the surface, resting on a flat slab of stone, was an oblong block of whitish matter, measuring 26 inches long, 17 inches broad, and 4 inches thick ; it was hard enough to be passed out of the trench in one piece. On close examination it was found to be composed of the ashes of wood and peat, mixed with portions of calcined shells and minute fragments of bone. The block, a little from one edge, was evenly bored through ; this circular bore was 2 inches in diameter ; nothing was noted to account for it. At the depth of 6 feet a small portion of a bronze ornament was found, engraved on one side, and possibly is a fragment of a fibula (Plate xxxiii. No. 2). Here, too, were bones of deer and pig ; some of the bones of the latter had been split. Only in this section was found evidence of the cave ever having been used as a place of residence.

Section III. and a small portion of Section IV. contained nothing save stones and earth, and two or three bones near the surface. Four days had been occupied in the work ; the trench had been carried back 32 feet at the width and depth already stated. Never less than ten men had worked strenuously, as men only would work who had come actuated solely by the desire to do their part in obtaining a satisfactory archæological record of their native isle. It was with regret that the conclusion was forced upon us,

that to continue excavating would be only wasted labour, as the chance of adding anything to what was already known was infinitesimal. The argument for this decision may thus be stated.¹

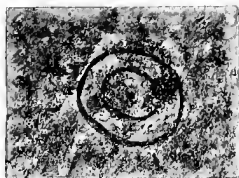
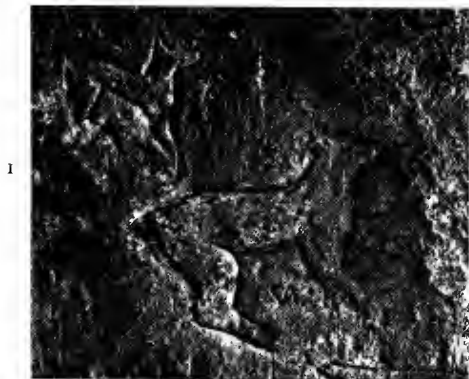
First. The height of the bank at the cave entrance is 15 feet above sea-level, but this bank is an artificial construction made by the late Duke of Hamilton. The natural height is probably only 8 to 10 feet.

Second. When Section I. was dug, the bed was reached at a little over 7 feet ; as the other sections were laid bare it was evident the bed was rising. A hole was dug about 3 feet from the extreme point of the datum line, and the rock was reached at a depth of 14 inches, showing that in 67 feet the incline is, roughly, about 6 feet. When the sea ceased to enter the cave, the tendency would be for the gravel and water-worn stones to slip down and form a bank at the mouth of the cave. This tendency to slip was doubtless the reason which caused the Duke of Hamilton to erect a wall on the face of the bank.

Third. Why was the cave levelled up if artificially done ? From the Church Records of the Parish of Kilmorie we find that during the eighteenth century meetings of the Kirk Session were frequently held in the cave ; and, we may conclude, services also. Again, men still living in Shisken tell how they received a large portion of their education within the cave ; it was the school of the district for a considerable number of years. The uses to which the cave was put, then, are sufficient to account for the artificial filling up.

Fourth. The finding of the fragment of bronze is a fact of no certain significance, as it may have been carried in with the material for filling up. The block of refuse was quite likely to have been left by some troglodyte of a far from early period.

¹ The work of excavation was accomplished by the voluntary labour of a number of friends in this district.



SCULPTURES, KING'S CAVE.

If the soil holds little record of value for the archæologist, the same cannot be said of the walls with their interesting sculptures. These consist of incised figures of horses boldly cut into the rock (Plate xxxiv. No. 4) in the eastern passage or aisle, some distance in: on this wall, but close to the buttress, are engraved deer and concentric circles (Plate xxxiv. Nos. 1, 5, 7), though the latter are almost obliterated by a stalactitic formation. On the buttress, which forms so striking a feature of the cave, are cut a two-handed sword (Plate xxxiv. No. 3), or perhaps a cross—it is difficult to say which—and the figure of a man with hands uplifted bearing above his head some symbol (Plate xxxiv. No. 6). Unfortunately this portion of the cave is much destroyed by the cutting of names, etc., upon it, and though there are traces of symbols, the complete form of them it is now impossible to follow because of pernicious thoughtlessness. On the western wall, at the entrance to the cave, is a finely sculptured group of serpents (Plate xxxiv. No. 2), and on the wall opposite are two triangles with a symbol of some sort within them (Plate xxxiv. No. 8).

At the western side of the entrance to the cave a chair or seat has been cut out of the solid rock. This seat has been much destroyed within recent years by those possessed of the insane craze for mementos, who do not scruple to deface in order to gratify it. In this case it has arisen from belief in the probable fiction, that it was upon this seat that the Bruce sat when he received, from the industry of a spider, the lesson that inspired him with the perseverance necessary for the freeing of Scotland.

James Robertson, in his *Tour in Scotland* in 1768, remarks: 'On the west coast of Arran there are several large caves, but the one called the King's Cave is the largest.' 'There are engraven on the side of this cave the figures of deer, hounds in chase, men of extraordinary stature with bows, swords, and durks, the weapons used in these days.'

The warriors and dogs, as seen by Robertson, have disappeared.

Under the title of 'Fingal's Cave,' Pennant records his impression of the King's Cave. He says: 'The beach is bounded by cliffs of whitish grit stone, hollowed beneath into vast caves. The most remarkable are those of *Fin-mac-cuil*, or *Fingal*, the son of *Cumhal*, the father of *Ossian*, who, tradition says, resided in this island for the sake of hunting. One of these caverns is a hundred and twelve feet long and thirty high, narrowing to the top like a Gothic arch; towards the end it branches into two: within these two recesses, which penetrate far, are on each side several small holes, opposite each other: in these were placed transverse beams, that held the pots in which the heroes seethed their venison; or probably, according to the mode of the times, the bags formed of the skins of animals slain in the chase, which were filled with flesh, and served as kettles sufficiently strong to warm the contents; for the heroes of old devoured their meat half raw, holding that the juices contained the best nourishment.'

'On the front of the division between these recesses, and on one side, are various very rude figures, cut on the stone, of men, of animals, and of a *clymore* or two-handed sword: but whether these were the amusements of the *Fingallian* age, or of after-times, is not easy to be ascertained; for caves were the retreats of pirates as well as heroes.'



1



2

CHAPELS.

1. St. Bride's, Lamlash.
2. Site of St. Bride's, Lochranza.

THE CHAPELS AND SCULPTURED STONES PRIOR TO 1709.

By THE EDITOR.

THE island is for ecclesiastical purposes divided longitudinally, from Lochranza to a point a short distance south of Whiting Bay, the eastern of the two sections forming the parish of Kilbride, the western, the parish of Kilmorie; their length is about twenty-four miles. Both of the parish churches are situated at the southern ends of their divisions. These divisions have continued from a period prior to the Reformation.

KILBRIDE PARISH.

Chapel of Saint Bride (Plate xxxv. No. 1).—Situated about a mile from the village of Lamlass, and to the northward of it, on the slope of a hill, stands the pre-Reformation Chapel of Saint Bride, or Bridget. It is now a ruin. The building measures about 65 feet in length by 24 feet 7 inches in width, measuring over the walls. In the south wall are three doorways and three windows, one of the latter being now built up. In the north wall there is only a single window. The west gable seems more modern than any other part of the building, and had been pierced by a window, now filled in. This wall is considerably off the perpendicular, and may collapse at any time, an event bound to cause large damage to the rest of the structure, especially at the western portion, which is showing signs of considerable

decay. The east gable has also at some time been rebuilt, and its present height is not above the wall-head level of the side walls.

The interior of the church is partitioned off into several divisions, marked 1 to 5 in plan; these divisions are for burial purposes. At the west end of the church, in the north wall, are a piscina and ambry.

The structural details are as follows (Fig. 1):—

Windows.—The openings are finished outside with square lintels, with rough relieving arches over them. A splay is carried round the sides, sill, and lintel. The ingoings are bevelled with flat stone arches inside. The windows have been protected with iron rods.

Doorways.—These are similar to the windows, with slightly bevelled ingoings; they have had iron gates attached to them.

Plinth Course.—As will be seen from the plan, this is simple in design.

The Roof.—This seems to have been high pitched, and slated.

Here and there is to be seen the influence of the First-pointed Period. The structure probably belongs to the fourteenth century. Though the building possesses few features of much architectural worth, this cannot be held to justify its present neglected state. It is the only pre-Reformation church now remaining on the island, and surely on this account it is worthy of being preserved. The western portion, owing to its advanced decay, will soon be beyond hope of preservation unless immediately attended to. The ambry and piscina are almost destroyed by the iron railings that abut on them.

The sculptured stones associated with this chapel are the following:—

Built into the east gable of the chapel is the slab represented in Plate xxxvi. No. 1. As will be seen, the stone bears the date of 1618; at the top there is the coronet of a



1



2



3

SCULPTURED STONES.

1. Monogram Stone, St. Bride's Chapel, Lamlash.
2. Cross, St. Bride's Chapel, Lamlash. (*Photograph by Mr. Neil Mackenzie.*)
3. Cross, Parish Church, Lamlash.

= CHURCH OF SAINT BRIDGET =
 = LAMLASH =
 ARRAN.

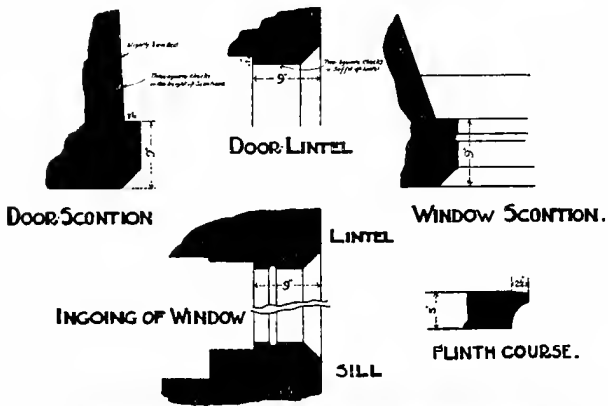
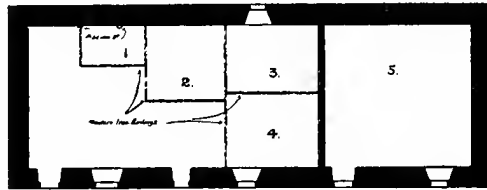
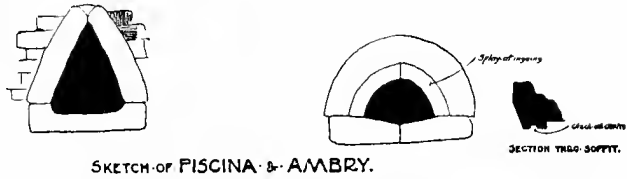


FIG. 1.—Plan of Church.

marquis, the strawberry leaves and alternating pearls being particularly well executed. Below the coronet is an ingeniously worked cryptic monogram; it is that of James, fourth Earl of Arran and second Marquis of Hamilton. The letters represented are—I (James) M H (Marquis of Hamilton) E A (Earl of Arran) D C (Duke Chatelherault). The letters A and C may also indicate Anne Cunningham, the wife of this marquis, and daughter of the seventh Earl of Glencairn. The three cinquefoils of the House of Hamilton are also set forth. Below the monogram is the pious injunction, 'FIR (fear) GOD.' No trustworthy information could be gathered regarding this stone and its relation to the chapel.

Plate xxxvi. No. 2, shows an ancient cross, which is also figured in Stuart's *Sculptured Stones*.¹ A careful search had to be made for this stone, and ultimately it was found, almost entirely buried. If it had not been previously noted, it would certainly have escaped observation. The total length of the stone is $1\frac{1}{2}$ foot, and the diameter of the circular ornamentation is 9 inches. The quatrefoil design is sculptured on both sides of the stone. The size and form of the stone suggest that it had formed part of the decoration of the chapel.

Plate xxxvii. No. 1. Effigy of a warrior clothed in quilted coat reaching to the knees. (This was frequently worn, about the fifteenth and sixteenth centuries, instead of weighty armour.) The head rests upon a pillow; unfortunately the upper portion of the stone is broken, and is too worn about the shoulders of the figure to enable any opinion to be formed regarding the defensive mail for the head and shoulders. The hands are placed together over the breast. A short sword with straight quillons is placed by the left side, on the right foot there is some mutilated sculpture that possibly represents a dog—a design frequently employed in the decoration of such stones. It is difficult to

¹ Stuart's *Sculptured Stones of Scotland*, vol. ii. plate cxxii. (Spalding Club, 1867).



1



2

SCULPTURED STONES.

Kilbride Churchyard.

know with certainty whose gravestone this is, but as James, third Earl of Arran, who died 1609, was buried in Arran, and there is no other site known as his resting-place, this stone may be associated with his name.

Plate xxxvii. No. 2. A slab with rope-work edge. The main part of the design is a cross with the shaft carried to the foot of the stone, the upper portion being much destroyed by some cement-like substance adhering to it. To the right of the shaft of the cross is a sword with multi-lobed pommel and drooping quillons; on the left is scroll-work. The stone is similar to many others to be seen in West Highland churchyards.¹

Plate xxxviii. No. 1. Slab with a shield, an outstretched hand, and a sword.

Plate xxxviii. No. 2. Stone with a shield crossed with a bar; on the upper part are the letters J. H., on the lower E. W., at base a fleur-de-lis. Above the shield are the words, 'Blessed are the dead that die in the Lord.' The date seems to be 1661, but the terminal figure is doubtful.

Plate xxxviii. No. 3 is a beautifully lettered stone with the words round its margins—HRE LYES PATRICK HAMILTOUN · IN CORDAN · WHO DEPARTED THIS PRESENT LIFE THE 15 DAY OF APRILE THE YEARE OF GOD 1676. The stone has two incised panels, with letters in relief; in the upper P. H. and in the lower C. F.

An interesting stone, but of later date, is also to be seen showing a man ploughing with a wooden plough, drawn by a team of four horses—all sadly out of proportion, be it stated.

As there are a number of stones with only their tops showing above the surface, we do not regard the foregoing as a complete list of the sculptured stones of early date in this churchyard, and desire to express the hope that as, from time to time, these old stones are recovered,

¹ See Captain T. P. White's *Archaeological Sketches—Kintyre and Knapdale*; also Graham's *The Carved Stones of Islay*.

proper care will be taken to secure their preservation. It is happily not the province of the archæologist to deal with the condition of graveyards, as this, and most of the others on the island, could hardly be referred to in complimentary terms.

Associated with this churchyard, where it was dug up, is the beautiful devotional cross recently erected in front of the present parish church, through the praiseworthy exertions of Mr. J. B. Sweet. The obverse shows the Corpus Christi passing into a chalice, the arms outstretched upon a cross of the Celtic type. Surrounding the head is a nimbus, and on either side a five-pointed star; below the transverse of the cross is a spray of foliage, probably intended to represent the vine. From the chalice flows a stream of the shed blood to a suppliant, who kneels at the foot of the cross in prayer with hands upturned. The reverse is a square enclosing a diamond with central star; the ends of the square are trifoliated; at the meeting of the upper and side points of the diamond with the square are Latin crosses; a shaft passes from the square to the foot of the stone; both sides of the shaft are filled with ornamentation. The sides of the cross are filled with a particularly well-executed design of leaves. The height of the stone before being placed in the socket-stone was 6 feet 1 inch. There is an opinion held by some of the residents in Lamplash that this cross originally belonged to the monastery on the Holy Isle (Plate xxxvi. No. 3).

Kilmichael Chapel, Glencloy.—Of this chapel there is now no overground structure. Regarding it we read in the *Statistical Account*, ‘A small church or chapel at Kilmichael, in Glencloy, the foundations of which were raised only a few years ago’ (1837).¹

Sannox Chapel.—Of this chapel there are now no remains, the site being occupied by graves. Small portions of the foundations are sometimes got when graves are being dug.

¹ *New Statistical Account—Buteshire*, p. 25.



1.



2.



3.

SCULPTURED STONES.

Kilbride Churchyard.



I



2



3

SCULPTURED STONES.

1. 'St. Michael's' Stone, Sannox.
2. Grave Slab, Lochranza Church.
3. Grave Slab, Lochranza Churchyard.

The only ancient sculptured stone here is a rude effigy, popularly believed to represent Saint Michael, the patron of the chapel. This stone is built into the outside of the wall surrounding the graveyard. Its length is 2 feet $3\frac{1}{4}$ inches by 1 foot $1\frac{1}{2}$ inch wide (Plate xxxix. No. 1).

St. Bride's Chapel, Lochranza.—The site of this chapel is a level portion of ground above the east bank of Balarie Burn, as it issues from Glen Chalmadale, almost opposite to the farmhouse of Balarie. The builders had shown considerable taste in their selection of this site for the chapel, as the spot is one of particular beauty. There is now no overground structure; in fact, almost the entire foundation has been removed. The site was dug over, and some large stones, evidently belonging to the foundation, were discovered. These stones were planed (Fig. 2), and seem to indicate a building of some 30 to 40 feet in length and 20 to 25 feet wide; but it was impossible to obtain absolute accuracy, owing to the scarcity of remains. This site will always be associated with Sir Walter Scott's nunnery, where lived for a time Edith, Maid of Lorn.¹ It need hardly be said that his description is purely fantastic, for the remains are only those of a simple chapel, and there is no historic evidence of a nunnery ever having been here² (Plate xxxv. No. 2).

Chapel, Whiting Bay.—This is the only chapel to the south of the parish church of Kilbride within its area. There is now little of the structure above ground. The existing remains indicate a plain oblong building 20 feet in length and 16 feet wide; the thickness of the wall is 4 feet. Within its girth is a small number of gravestones, but all seem devoid of any sculpture work.

¹ Sir Walter Scott's *Lord of the Isles*.

² Scott's knowledge of Arran seems to have been somewhat limited, or he surely would not have written that from Lochranza—

‘The goat-herd drove his kids to steep Ben-Ghoil’ (Goatfell).

—*Lord of the Isles*, canto v. line 6.

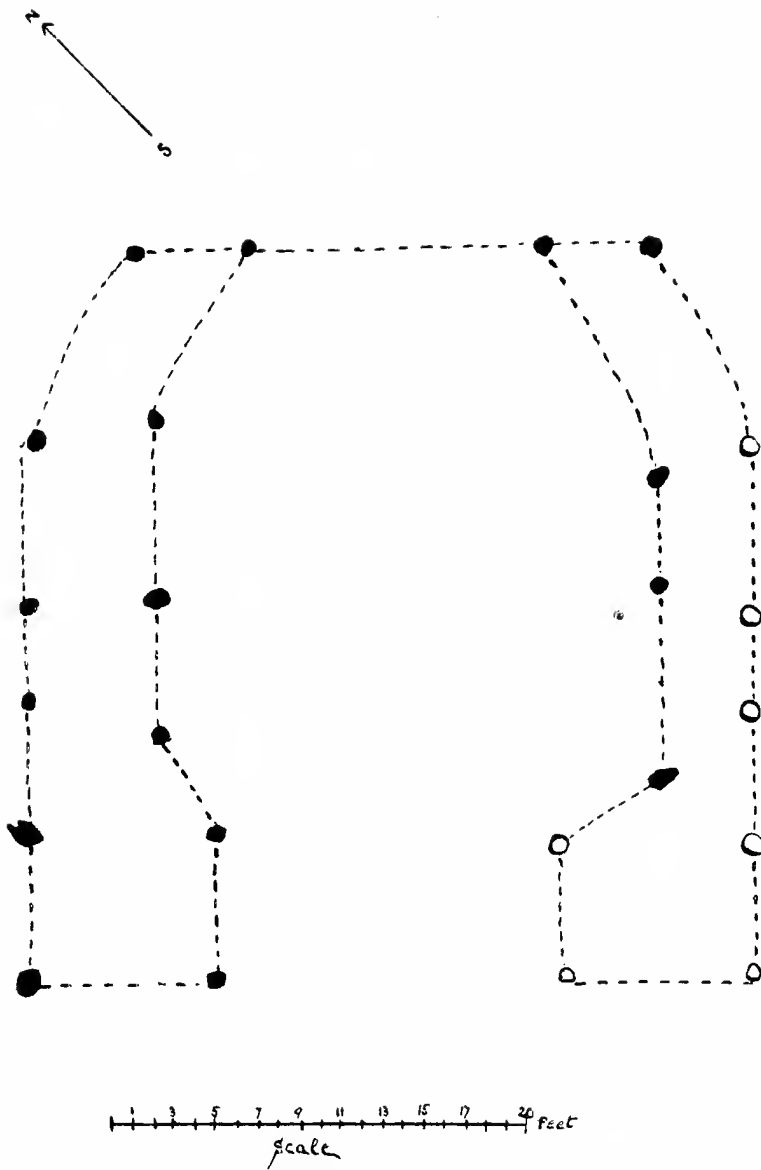


FIG. 2.—Plan of St. Bride's Chapel, as suggested by setting of stones.

PARISH OF KILMORIE.

The parish church is situated near the small hamlet of Lag. The present fabric is modern, replacing the building illustrated (Fig. 3), which was erected in 1785 on the site of a still earlier church. There is some doubt whether this is the site of the pre-Reformation church or not, there being, at

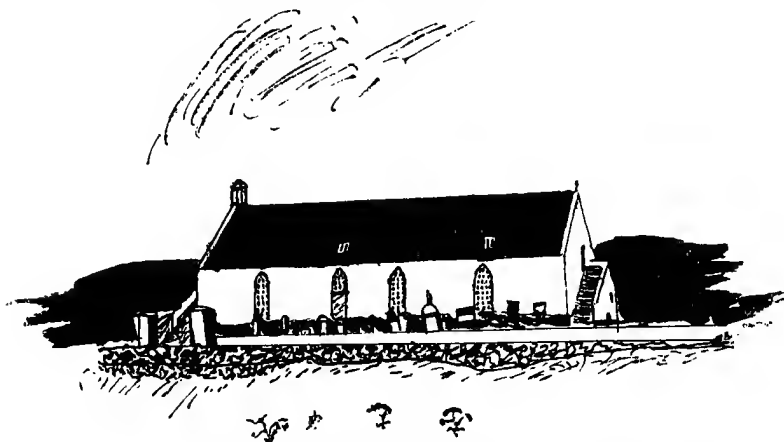


FIG. 3.—Sketch of former Church of Kilmorie, built in 1785.

Slidderie, a site known as that of a St. Mary's Chapel, which may have been the church of Romish times. Around the modern church, it is remarkable to relate, that, on examination, not a single sculptured stone earlier than 1709 was found. Such stones must have *been* there. *Where are they now?*

To the east of the parish church are the following sites of chapels:—

Kilbride, Bennan.—The moss-covered stones that mark the site of this chapel are to be found close to the bank of a small stream, and only a few yards from the shore and far below the present highway. The building seems to have been a simple oblong structure, measuring 33 feet in length

and 18 feet wide. The existing remains show a thickness of wall of 3 feet.

At the junction of the highway, with a road leading to East Bennan, near Levencorrach, was a chapel, of which there are now no remains, the site having been ploughed over.

Kildonan Chapel.—The foundations of this chapel are to be seen on Kildonan Farm. On the roadway to the house there is a beautiful semicircular setting of stones that had apparently formed its apse. Through the indulgent courtesy of the occupier, Mr. A. N. MacNeil, we were permitted to dig into the lawn to ascertain the length of the chapel; this was found to be 27 feet, the width 10 feet. The walls show a thickness of 18 to 20 inches. A few years ago a drain, as chance would have it, was constructed through the building at the junction of the apse and chancel, and accordingly at this point we were unable to observe the construction. About three years ago, four long cists were found 12 yards distant to the east of the chapel site; these were unfortunately built and cemented over before the record of them had been obtained. A little to the south is a spot known as ‘The Priest’s Grave,’ but with no overground marking.

The chapels to the west of the parish church are the following:—

St. Mary’s Chapel, Slidderie.—A short distance from the roadway on the farm of Bennicarrigan is the site of this chapel. It had a total length of about 38 feet and a width of 15 feet. The remains show a semicircular apse 12 feet in length and apparently 8 feet wide at its largest span. Some friends recently dug into the centre of the building and found that it had been roughly paved with undressed stones.

Surrounding the chapel are a few unsculptured grave-stones. In referring to this chapel, the *Statistical Account* states: ‘The only monument of them that lie beneath is a stone, beautifully carved.’¹ A careful search has been made, but this stone could not be found.

¹ *New Statistical Account—Buteshire*, p. 55.

Kilpatrick Chapel.—This chapel was situated at the entrance to Kilpatrick, from the south. The only trace now remaining of it is a small fragment of masonry at the entry to the modern enclosure. There is on the site a holy water ‘stoup’; the stone is an ordinary shore one, with an oblong depression cut out of it. It may be noted that the site of this chapel is beside the way that would usually be taken to reach the cashel, described in a previous chapter. Its name and position suggest some connection with the earlier ecclesiastical structure, though to what extent there was relationship it is not possible to determine. There is a curious legend about this chapel. It was so venerated, that bodies were brought from Ireland to be buried within its consecrated ground; the bodies were not brought singly but in numbers, temporary burial being given, until there were sufficient for shipment. The practice was discontinued after a ship conveying bodies sank in the Irish Channel. It is further added that before being buried at the chapel the bodies were always carried across running water.

St. Molio’s Chapel, Shisken.—Built into the wall of this chapel is the slab described by Mr. F. C. Eeles in the succeeding chapter.

Clachan Churchyard, Shisken.—A roofless building now stands outside the churchyard wall; this was a church built in the year 1805¹ upon the site of an earlier church erected about 1708. In reference to this earlier church, there is an entry in the Kirk-session Records of Kilmorie, under date 23rd December 1708; the extract is as follows:—

‘The Session having seen an address from the inhabitants of the Shesken representing the vast charge & expense they were at in building a preaching house with themselves at a place called the Clachan, wherein they humbly desired supply from the south end of the paroch in regard that all they had according to their ability contribute among themselves was exhausted and that ye had nothing wherewith to

¹ *New Statistical Account—Buteshire*, p. 65.

finish there begun work unless the Inhabitants of the south would help with supply.'

'This the session urged the people to do.'

Of the building erected at 'the vast charge' there is now no trace. Inside the churchyard small portions of the foundations of a building have been got when graves were dug.

Plate XL. shows a grave-slab with floral cross; the shaft is continued the length of the stone; the margins have been decorated, but the design is now much worn. A slab with almost the same design is to be found at the gate, but it is not in such good preservation as the one illustrated. These two stones are the only old slabs now to be observed in Clachan churchyard.

Caibéal Eoin (John's Chapel).—The *Statistical Account* states: 'The ruins of an oratory or cell belonging to a monk called John, and containing the remains of the saint, stand on the farm of Balnacula.'¹ The Ordnance map shows the position of the site. We were unable, however, to find any trace either of the remains of the cell or of the saint; inquiry among the residents in the neighbourhood was barren of result, nobody could give any information regarding the cell.

At Blackwaterfoot is a gravestone with an incised Latin cross occupying about one-third of the length of the stone. The stone does not now perform its original purpose, but performs the more utilitarian office of *a gate support*!

Chapel Sites, Achengallon.—Close to the roadway are the remains of two structures in parallel position. The larger measures inside the walls, east and west, 16 feet, north and south, 11 feet, the thickness of the wall being 4 feet 6 inches; the smaller, east and west, 14 feet, north and south, 9 feet, with a wall-thickness of 3 feet 6 inches. Both the buildings seem to have been dry-built, and, as far as can now be judged, the wall had been of faced stone, with rubble between the inner and outer casings.

¹ *New Statistical Account*, p. 55.



SCULPTURED STONE.

Clachan Churchyard, Shisken.

(Photograph by the Rev. William Mackenzie.)

There are a small number of gravestones, but these are without archæological interest.

A short distance south of Whitefarland, beside the road, is a small burial-ground, but it apparently contains no stones prior to 1709.

Lochranza Church.—The *Statistical Account* states: ‘There is another¹ church at Lochranza, built in 1795, and seated in 1835 to accommodate about 300.’² On the eastern wall of the present church there is, however, a stone bearing the date 1712. As there are some stones in the surrounding churchyard of still earlier date, we may presume there was a previous ecclesiastical edifice on this site.

The sculptured stones are as follows:—

Built into the east wall of the church is an oblong slab with skull and cross bones in relief, and an incised inscription cut round the margins, reading—HEAR · LAYS · CRISEL · FRAZER · SPOWS · TO · THOMAS · WELKINSON · WHO · DEPARTED · THIS · LIFE · THE 5 DAY OF JUNI 1685. (Plate xxxix. No. 2.) This stone was removed from the floor of the church, and inserted into the outer side of the wall, a few years ago.

A few feet in front of the east gable is a narrow slab with a fine design of Celtic knot-work. It was the only stone found on the island with this class of ornamentation. (Plate xxxix. No. 3.)

The only stones, prior to 1709, noted here other than those above described, were two without ornamentation, and having only initials cut and dated—

AL M

A M

1680

P M

1675

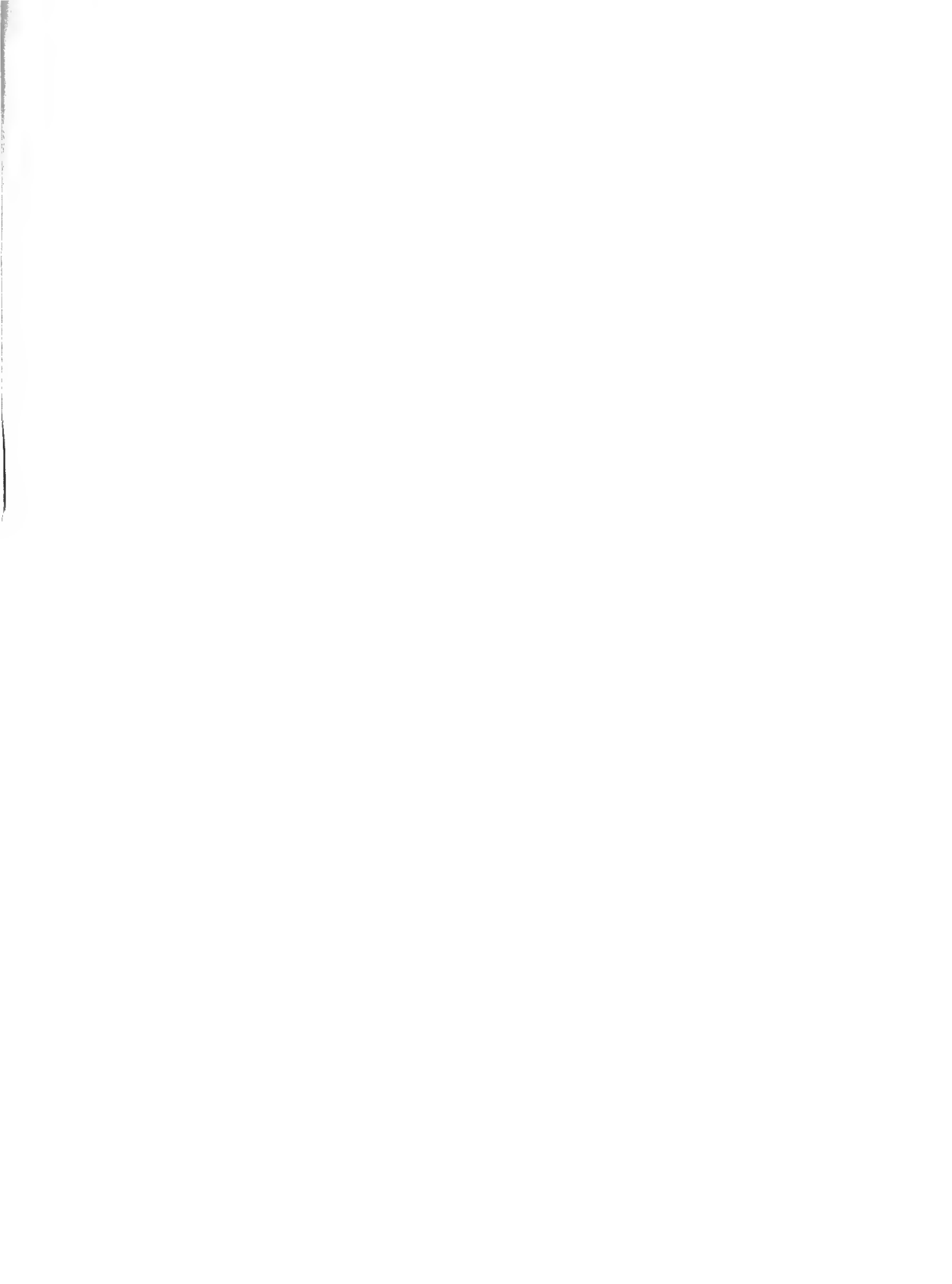
¹ The other St. Bride's Chapel previously referred to.

² *New Statistical Account*—*Buteshire*, p. 65.

From the style of these stones we are inclined to the opinion that their erection is of much later date than the years inscribed on them.

In conclusion, it may be stated that with regard to old sculptured stones Arran is singularly barren of such, if there be no more than we have enumerated. As there is reason to believe that many still lie below the surface, however, it is to be hoped that as they are found, in each neighbourhood, they will be zealously cared for. Sculptured stones are of much value for records of the past, revealing, as they do, the art and technical skill of our forefathers.

It may perhaps occur to some reader that many of the chapels are very small. This is not a feature peculiar to Arran chapels, as there are many similar minute edifices in the Isles and Highlands of Scotland—the reason being that they were intended not for the accommodation of a congregation, but for the use of the clergy and choir. The buildings were in fact but the chancel of a church, the nave of which was the surrounding ground. The outer walls in these small chapels would serve as a screen for the altar. This screening of the altar was a strange survival, or perhaps revival, of Judaism within the church of the mediæval period to which these chapels belong.





I



Sir HUGH DE BAYON, Rector Oulton Suffolk.

2

1. Effigy of a Bishop, Chapel, Shisken.
2. A fourteenth century English brass of a Priest. Showing the Eucharistic Vestments in the form usual in England (and on the Scottish mainland) at that period.

(Kindly lent by the Rev. Percy Dearmer and Mr. Henry Frowde.

ON THE EFFIGY OF AN ABBOT AT SHISKEN : WITH
A NOTE ON THE FORMS OF VESTMENTS ON
WEST HIGHLAND MONUMENTS.

By F. C. EELES, F.R.HIST.S., F.S.A.SCOT.

ON the west side of the chapel at Shisken is a monumental effigy which was taken from Clachan churchyard and built into the wall on 9th July 1889. It is traditionally said to be a statue of St. Molio, though it really represents a mediæval ecclesiastic. The figure is that of a priest in the eucharistic vestments, viz.—amice, alb, chasuble, and fanon or maniple, the girdle and stole not being visible. It is in high relief, and is shown standing in a plain trefoil-headed niche or canopy. At the right side of the effigy is a crosier, or pastoral staff, which points to the priest having been an abbot. In the Lowlands of Scotland, or in England, the general style would indicate the early part of the thirteenth century as the date, but in this remote Highland district the same style would point to a much later period. There is little doubt that an abbot of the Cistercian house of Saddell, in Kintyre, is represented. Dempster mentions an abbot named Thomas, who flourished *c.* 1257, as having been a man of some eminence, and it is just possible that it is intended for him¹ (Plate xli. No. 1).

The vestments represented exhibit some noteworthy peculiarities, which are to some extent shared by other West Highland effigies of priests ; these, however, are mostly

¹ R. Keith, *An Historical Catalogue of the Scottish Bishops*, 2nd edition, Edinburgh, 1824, p. 422.

of considerably later date. The chasuble, though of the thin unlined type which fell in numerous and graceful folds around the wearer, is much shorter than is usual in effigies of this period; indeed, it is shorter than most of the chasubles of a much later date. It is gathered above the elbows in many folds, leaving the forearms entirely free. Strings or cords inside each shoulder, attached to the vestment at intervals of an inch or so, and then tightened, would produce this result—a result not dissimilar in its effects from that obtained in later times by cutting away the sides of the vestment. The chasuble is very pointed in front. No orphreys are shown.

The maniple is long and narrow, of the kind usual in mediæval times, and it is worn on the wrist, not upon the upper part of the forearm, as became customary later, especially on the Continent.

The alb is full, but has very tight sleeves—a feature usual in West Highland representations of it. No apparels are shown, though this is no proof that these were not used, as they were sometimes painted on effigies.

The amice presents in an extreme form a striking peculiarity found in some (but not all) other West Highland effigies of ecclesiastics. The amice itself is invisible, but has a huge and almost square apparel, which stands erect round the back of the head, reaching nearly up to the ears. No part of the outside is visible from the front, and the apparel slopes outwards instead of inwards towards the top. The appearance can only be likened to that of the corresponding Armenian vestment—the *vakass*.

The peculiarity of this West Highland form of amice apparel is evident when one remembers that the form of amice almost universal throughout Western Europe in mediæval times could be turned up over the head, like a hood, and had a long shaped apparel which was attached on all its four sides to the amice. The amice itself hung round the

neck of the wearer, outside the chasuble: its folds were visible in front, but the rest was hidden by the apparel, which encircled it somewhat after the manner of an 'Eton' collar, only at a greater distance from the neck.

The crozier is of a fairly early type, and the head appears to have been carved in imitation of a rope. The crook is turned inwards.

The West Highland effigies of ecclesiastics appear to have been much neglected by liturgiologists, and the present writer is unaware of any critical description of them from the ecclesiological standpoint. There are numerous examples of these figures in Iona, Islay, and Kintyre, generally in low relief. Illustrations of them may be found in J. Drummond, *Sculptured Monuments of Iona and the West Highlands*, Edinburgh, 1881; R. C. Graham, *The Carved Stones of Islay*, Glasgow, 1895; and T. P. White, *Archæological Sketches in Scotland*, 2 vols., Edinburgh, 1873. Labouring under the disability of having been unable to examine personally a large number of monuments scattered over an extensive and inaccessible district, the writer feels that it were presumptuous to attempt to discuss them. The present, however, seems to be a fitting occasion on which to note, for the benefit of the student, the more important characteristics of a group of effigies presenting such striking peculiarities, some of which are shared by the figure which is the subject of this notice.

In most cases the chasubles shown on these monuments are ornamented with the Ψ -shaped orphrey, characteristic of Gothic vestments in England and the neighbouring parts of the Continent. But the orphreys branch into the Ψ form not only above, in the usual way, but also below, in a manner sometimes found in England, though rarely. Some of the figures (*e.g.* at Kilkivan and Saddell) show the groundwork of the chasuble richly adorned with ornamentation of the characteristic West Highland mediæval type, but as Captain

White points out, the orphreys themselves are plain. In every case the chasuble appears to be made more or less stiff and close-fitting, and it hangs absolutely without folds; to allow the use of the arms, the sides have been cut away from above the elbow in every case, and in two instances in Islay (Graham, 17 and 24) from the shoulders. The arms of the figures, from and including the elbows downwards, are thus visible outside the chasuble. In each case the chasuble ends in a very definite point in front.

Now, on the Continent, in the sixteenth and seventeenth centuries, the introduction of stiffer materials and heavy embroideries caused the chasubles to be cut away at the sides.¹ And this cutting away gradually increased till the 'sandwich-board' modern forms of the vestment were arrived at, in some of which the garment is almost in two pieces, only just connected upon the shoulders. But soon after this reducing and stiffening process commenced, the Ψ -shaped orphrey disappeared, the point of the chasuble was rounded off in front and behind, and in many cases the bottom of the vestment became nearly square. Here in the West Highlands, however, we have a cut-down and stiffened form of vestment, which retains the Ψ -shaped or Υ -cross orphrey, and also the pointed front. This remarkable fact seems hitherto to have escaped the attention of liturgiologists.

It may be that the small front of the West Highland chasuble, as seen, not only in the later effigies, but also in

¹ This reduction in size went on to a limited extent in this country. Its beginnings may be seen in a chasuble of the ordinary Gothic type, but with somewhat curtailed sides, shown on an incised slab at Oathlaw, Forfarshire, illustrated and described by the present writer in the *Proceedings of the Society of Antiquaries of Scotland* for 1908-9. That it went on to a fairly definite extent in the sixteenth century is shown by the old full chasubles being spoken of as 'veterum more ampla et lata' in an Aberdeen cathedral inventory of 1549 (*Registrum Episcopatus Ecclesie Aberdonensis*, Edinburgh, 1845, vol. ii. p. 189). The Ψ -cross form of orphrey went out of use when the chasuble began to be cut down, and it was superseded by the Latin cross behind and the upright stripe in front, a form of ornamentation which had existed side by side with the other since the early part of the fifteenth century.

the Shisken example, was not a fresh introduction, as in the case of Continental practice of the Renaissance period, but rather a survival of an earlier chasuble of another form. This is suggested by the similarity in outline between the front of the Shisken chasuble and those of the later ones. The primitive chasuble was very full and long all round; it was not unlike an extinguisher. For the wearer to use his arms, it was necessary for him to gather it up, and put them out from underneath the folds. In earlier times, it would seem that some lifted it up in one large gathering, and put both arms out together in front, while others extended one arm on each side, raising the vestment in two portions, and leaving a large part hanging down in the front. It is the latter method which became universal in Western Christendom, but the former came to be the rule in the East. Traces of it, however, are to be found in the West. In Celtic MSS., and on Celtic stones,¹ ecclesiastics are represented with both hands coming out in front from below a vestment which seems to be a chasuble of what would now be called the Eastern type. In pictures of the eleventh and twelfth centuries,² Western chasubles sometimes appear very short in front, but exceedingly long and full behind, a sort of compromise between the two forms. It is suggested, therefore, that in the West Highlands the Celtic—and Eastern—tradition of putting both hands out from below the chasuble in front together, was strong enough to modify the mediæval chasuble to the extent of making it very small in front; that in course of time the back was reduced in size; and that the tendency to stiffen and curtail

¹ *E.g.* at Eassie, Invergowrie (No. 1), St. Vigeans (Nos. 7 and 11); see J. Romilly Allen and Joseph Anderson, *The Early Christian Monuments of Scotland*, Edinburgh, 1903, pp. 218, 268, 271.

² *E.g.* in the representations of bishops in the scene of the coronation of Harold in the Bayeux tapestry, and in an illumination in a twelfth-century MS., reproduced by Mr. L. G. Wickham Legg in his *English Coronation Records*, Westminster, 1901, pp. 15 and 30.

the vestment, which spread over Western Europe in the sixteenth century, thus found congenial soil, but one in which local tradition was still strong enough to retain a peculiarly distinctive shape and ornamentation.

The accompanying illustration (Plate XLI. No. 2), inserted for comparison, shows the normal mediæval chasuble in the English form, from an English brass of the fourteenth century. In it will be seen the large full chasuble falling in many folds, with the arms coming out at each side. All through the following century the chasuble did not differ widely from the form here shown. The stole-ends are visible below the chasuble, and the amice is an apparelled amice of the usual kind, such as was worn all through the later Middle Ages throughout England, and very largely elsewhere.¹

As in the Shisken example, the albs in the other West Highland effigies are very full, but have unusually tight sleeves, very narrow at the wrist; they have apparels on the skirt only, and not in all instances.

The maniple or fanon in effigies of this group is always worn on the wrist, as at Shisken, and not higher up the arm, as became customary on the Continent after chasubles had been cut away at the sides.² It is generally small and narrow.

Only in one instance hitherto described is the stole visible

¹ Briefly, the eucharistic vestments (varying considerably in shape, material, etc.) are—(1) the alb, a long linen vestment descended from the Roman *tunica*, with coloured patches of rich or embroidered stuff on skirt and wrists; (2) the girdle, a later addition to the albe; (3) the amice, a kind of hood of linen placed on the head and then turned down round the neck, also a later addition; (4) the stole, a very long narrow silk vestment, descended from the *pallium* of the later Roman Empire, worn round the neck and hanging down with the two ends in front; (5) the maniple or fanon, a vestment like a miniature stole worn on the left wrist, originally a towel; and (6) the chasuble, the outermost vestment, a cloak-like garment with no other opening save a hole for the head to go through, descended from the Roman *paenula*. The standard authority on the subject is J. Braun, *Die Liturgische Gewandung*, Freiburg im Breisgau, 1907; but for a short and popular account see Dearmer, *The Ornaments of the Minister*, London, 1908, and for a detailed description of English vestments, the same writer's *The Parson's Handbook*, 7th edition, London, 1909.

² The Oathlaw figure referred to above has the maniple near the elbow.

(Eileanmor, Drummond, plate LXIX.), and in that case it is very long, reaching almost to the hem of the alb.

The amices represented in these figures vary, and are mutilated in some cases, but the ordinary form seen in other localities does not seem to occur at all. As far as can be gathered, little is visible of the amice itself, and the apparel is high, more or less, and stands up close to the neck. In two examples, both from the south of Argyllshire and at no great distance from Shisken, a very similar form to that of the Shisken effigy occurs. One of these is on a particularly fine figure at Saddell, and the other is at Kilkivan (White, i., plates XLI. and XVIII.). It may perhaps be suggested that these amices had their stiff, short, and high apparels so fastened on as to considerably overlap the edge of the amice itself, and that the amice was tied very tightly, and turned down off the head before the chasuble was put on: this would produce the effect seen in the more extreme examples among these effigies. But the question is in need of further investigation; indeed, the careful student of ecclesiastical vestments will find a profitable field for investigation in these little-noticed effigies of West Highland ecclesiastics.¹

In conclusion, a word as regards the date of these effigies. Early forms of ornamentation survived in the West Highlands until a very late period. Not only mediæval forms, but even interlaced ornament of a kind, survived into the seventeenth century. Unfortunately, not one of the

¹ In a recess in the wall on the north side of the nave of the collegiate church of St. Duthus, Tain, in eastern Ross-shire, there is a small effigy of a priest in low relief, which has several features in common with the West Highland effigies. There is the usual border round the edge of the chasuble and also round the neck; the orphrey not only branches downwards on the lower part of the chasuble, but the upper branches of it also turn downwards instead of going over the shoulders. No amice is shown. How the chasuble is finished below the shoulders, and how the upper branches of the orphrey end, the worn condition of the effigy makes it impossible to say. The forearms of the figure, in tight sleeves, are exposed below the chasuble, which is considerably cut away at the sides, although it is not without folds. No apparel is shown on the alb, and no maniple is visible, but there is a long narrow stole sharply splayed at the ends.

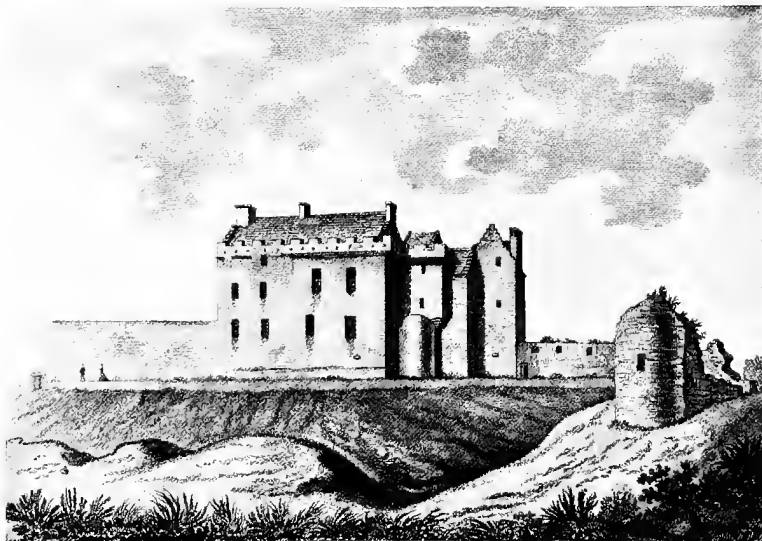
monuments, hitherto described, with effigies in eucharistic vestments, is dated. But, as far as can be gathered, they were executed between the middle or end of the fifteenth century and the Reformation. Probably the majority are of the first half of the sixteenth century, or even earlier. Only the Shisken figure bears definite evidence of much earlier date, and it must be considerably earlier. There must be a big gap between the date of it and that of even the earliest of the other effigies which have been illustrated, and which form the subject of this notice. One can only hope that further search in the lonely churchyards of the West Highlands may produce effigies of intermediate types, the study of which might help in fixing the approximate dates of the whole series.

The writer's best thanks are due to the Rev. Percy Dearmer and Mr. Henry Frowde for the loan of the block illustrating the more usual mediæval form of the vestments.

[That this effigy has no connection with Molaise, the hermit saint of the Holy Isle, there can hardly be any doubt. St. Molaise became abbot of Leighlin in Ireland, and there he died (see *Acta Sanctorum*). Local tradition has it that the effigy represents the saint, and it is perhaps not difficult to see how the popular idea has arisen. The confusion is between the names *Maol-Iosa* (contracted form *Molio's*), 'The tonsured for Jesus,' and *Molaise*, *Mo-* (a suffix of endearment) *las* or *laise*, flame or brightness, a poetical phrase indicating 'My dear one' or 'My bright joy.' The term *Maol-Iosa* was very fitting for the effigy in question, when the name of the ecclesiastic represented had been forgotten. The *sound* of the names in speech is not so widely different as to prevent misunderstanding. Briefly, then, the stone that was with haste lifted from Clachan churchyard and set in cement in the wall of the chapel is but the monumental effigy of an unknown saint or sinner.—En.]



I



2

BRODICK CASTLE.

1. Brodick Castle, 1909, from the S. E.
2. Brodick Castle, 1772, from the S. E. (from a drawing by Grose).

THE CASTLES.

By CHARLES E. WHITELAW, I.A., F.S.A.(SCOT.)

THERE is nothing more interesting or more enlightening among the works of man than the buildings erected by him. They illustrate not only his skill in construction and his taste in decorative art, but they form a key to his mode of living and the nature of the environment that had so much to do with the moulding of his character. In this respect they serve to create one of the elements that combine to form history.

The families holding property in the island of Arran were never numerous, and the value of the land was not probably at any period high, therefore it is not to be expected that the buildings they occupied should be numerous or large.

The castles surviving to the present day are only three in number, and it is questionable whether there were ever any others, but if there were, they cannot have been more than mere keeps or watchtowers of small dimensions.

The most important in size and state of preservation is—

BRODICK CASTLE.

Situated on an eminence dominating the north side of Brodick Bay, this castle forms a striking landmark, largely owing to considerable additions made in 1844, with which, however, we need not concern ourselves. The buildings surmount a rocky plateau, and were originally defended on the south and south-east by a high and steep bank which falls away a short distance from the foot of the castle walls. A broad wet ditch enclosed the castle on the north side, it also

surrounded a courtyard of considerable dimensions, with walls rising to a height of two stories.¹ These outer defences were evidently removed in the transformation of 1844, as they are shown in *Grose's Antiquities*,² and we are further informed that the new tower fell in 1845, having been built on old walls of insufficient strength.³

¹ M. Martin, *A Description of the Western Islands of Scotland*, London, 1703, p. 222. Note that Martin in his description makes a mistake as to the points of the compass, his south and west should apparently be north and east, etc.

² Francis Grose, *Antiquities of Scotland*, London, 1797, vol. ii. p. 127.

³ *The Ayr Observer*, June 4, 1844, p. 1 (Brodick Castle).—‘We have to record, with very sincere pleasure, that a princely addition to this ancient and picturesque fortress was commenced on the 25th May by his Grace the Duke of Hamilton and Brandon, in order to render it a suitable abode for his son, the Marquis of Douglas and Clydesdale, and his amiable and illustrious consort, the Princess Marie.

‘The great antiquity of this residence, and the many interesting events connected with it, must be well known to the antiquary and topographer.

‘A portion of the edifice still remains in its pristine state, in good habitable condition; and it gives us the liveliest gratification to think that the restoration of this fine relic of antiquity has fallen into the hands of the Duke of Hamilton, whose exquisite taste in architecture and the fine arts is too well known to require notice or panegyric from us.

‘Having seen the plans on the ground, we are enabled to state that the arrangements for the extensive addition, so auspiciously commenced upon Saturday, partake of all the magnificence and grandeur of Scottish castles of the olden time. The noble and bold simplicity of the exterior will harmonise most gracefully with the sublime and romantic scenery which surrounds this delightful residence, and it is strictly in keeping with that portion of the building which has stood the test of time and the hands of the destroyer.

‘The proceedings of Saturday will not soon be forgotten in Arran. On that auspicious day, as we have already said, the foundation stone of the great tower was laid with masonic honours by the Princess Marie, Marchioness of Douglas and Clydesdale, in presence of the Marquis and a party of friends, accompanied by a large body of the tenantry. About one hundred workmen in the employment of our townsman, Mr. Thomas Brownlie, the contractor for the building, were drawn up in rank and file, and escorted the Marquis and Princess to the spot, when James Gillespie Graham, Esq., the eminent architect, deposited a hermetically sealed bottle in the foundation stone, containing all the coins of Queen Victoria, an Edinburgh Almanack of 1844, a newspaper of the day, and a variety of other articles provided by the Marquis and the Princess. We hope the late privately printed account of the arrival of the illustrious couple at Hamilton Palace was not forgotten, although we did not observe it. After the stone was laid, a solemn and appropriate prayer, offered up by the Rev. Mr. Stewart, and the pouring of corn, wine, and oil on the stone—the usual masonic emblem of plenty—a royal salute from the battery announced the close of the ceremony; and the procession retired in the same manner, to the melodious sounds of

The old portion of the castle consists of a main block, rectangular in shape, of from three to four stories high, finished by battlements and crow-stepped gables. Attached to the east end of this block is a group of three small square staircase towers, also with crow-stepped gables, and the whole terminates to the east in a one-storied building, designed as a battery for light artillery.

The original entrance is at the east end, between the battery and the main building, and is reached by a short flight of steps, at the foot of which is an old 'loupin' stane.'¹ The entrance opens into a vestibule, and this conducts to the main building, the door to the powder-magazine of the battery, and the stair leading to the gun platform. The doorway of the main building gives access to a passage, and from this open the two staircase towers communicating with the upper stories and three basement chambers of the rectangular block, originally kitchen and stores. These chambers have a plain waggon vault of stone, and some of the doorways are of pointed form. It may be mentioned that the staircase towers inter-communicate with each other. Each of the upper floors has four rooms and several wall chambers. Unfortunately, the whole house has been completely modernised, and the only original fixtures remaining are several of the old iron-studded oak doors.

spirit-stirring music, re-echoed from the glens of mighty Goatfell. The noble Marquis afterwards entertained his friends at dinner in the castle; and a numerous party assembled in Mrs. Jamieson's inn to celebrate the event. The workmen were also regaled with a substantial repast; and the whole proceedings terminated most joyfully.'

Ayr Observer, 25th February 1845.—'On Saturday night or early on Sabbath morning the tower of Brodick Castle fell with a terrible crash. The old castle had been injured by the late storms, and several of the lintels had been rent. Workmen were employed in repairing the damage—no fewer than sixteen persons being working on it on Saturday last. Providentially the fall occurred during the time when no one was about it. The tower was, in the judgment of scientific men, too heavy for the old building on which it was erected.'

¹ A stone with steps cut in it to assist a horseman to mount, a necessity in the days of body armour or the later ponderous jackboots.

The top story of the eastmost tower is remarkable in respect that it contains a chamber with a plain stone vault of pointed form, which enters at a lower level off the passage,

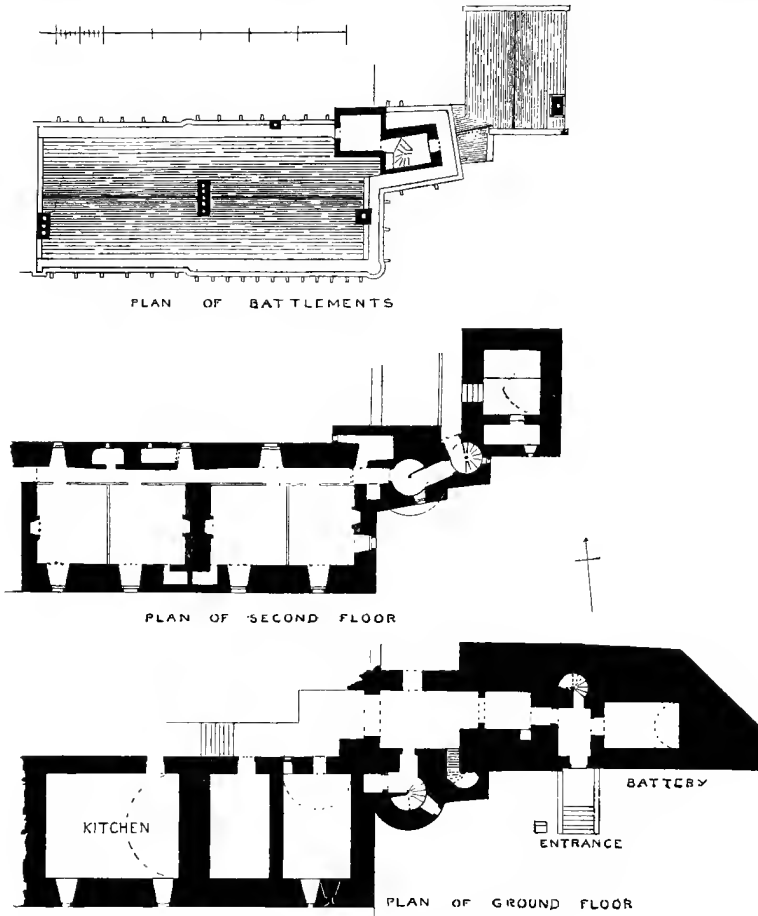


FIG. 1.—Plans of Brodick Castle.

and in turn gives access at a higher level to a curious small mural chamber. The main staircase tower finishes with a cape-house which opens into a second smaller cape-house or guard-room, giving access on to the battlements.



1



2

1. Lochranza Castle, 1909, from the N.W.
2. Lochranza Castle, 1772, from the N.W. (from a drawing by Grose).

The battery has a remarkably thick wall, about 12 feet, except on the south and least accessible side, where it measures only 4 feet 6 inches. The plain vaulted chamber was doubtless the powder-magazine, but in more recent times it was used as a prison. A wheel stair communicates with the gun platform. This is not only embrasured for guns, but is looped also for muskets, while near the south-east corner of the main block is a widely splayed gunhole of the ordinary type.

The castle may be divided, chronologically, into three sections. First, the larger staircase tower, the eastmost half of the main building, and probably the lower portion of the westmost half. The upper portion of the western half is evidently of later date, as is shown by the different design of the parapet and a vertical join between the walls for a certain distance down. This section may be put down as belonging to the sixteenth century. At the same time it must be noticed that part of the ground floor is built in a manner different from and better than the rest of the building; this indicates a still earlier date. Perhaps this portion represents a fragment of the building destroyed in 1455. Second, the small square eastmost tower, which is not later than the beginning of the seventeenth century. Third, the battery, which is probably also of the seventeenth century.

Within the castle there are very few memorials of the past, the only thing worth noting being the stocks, formed of two heavy square oak beams with iron hinge and hasp; the openings for the ankles are in the lower beam, and are $3\frac{3}{4}$ by $3\frac{3}{4}$ inches.

There is little mention of the castle in history. Robert the Bruce captured it in 1307; it was demolished by the English under the Earl of Ross in 1450.¹ It was burnt and

¹ T. Pennant, *A Tour in Scotland*, London, 1776, vol. ii. p. 195.

destroyed during a feud in 1528.¹ The castle was razed to the ground and the neighbourhood plundered by an English expedition under the Earl of Lennox in 1544.² The castle was garrisoned about 1646 by the soldiers of the Commonwealth, who added considerably to it. They dismantled their fortifications before leaving, but without harming the parts required for habitation.³

LOCHRANZA CASTLE

This castle is situated at the north end of the island, and occupies the extremity of a long narrow gravel spit jutting out to a considerable distance from the west side of the loch.

The building consists of an oblong main block 66 feet long by 35 feet wide, with a small square tower projecting from the south-west corner, 15 feet 6 inches in length by about 16 feet 6 inches in width.

The approach is on the west or landward side. Facing this, on the ground floor, is the present entrance, defended from above by a stone bartizan projecting on corbels. With direct access to the entrance, a circular stair turns off on the left and leads to the floors above. The southern portion of the ground floor is occupied by a single large apartment lit by one small window. The southern extremity of the apartment is partitioned off, to form a stone-roofed chamber lit by two loops and subdivided to form a vestibule to a long straight mural stair; this leads to the first floor, and to a small chamber, with a hatch in the ceiling, 5 feet 11½ inches by 20 inches, opening on the dais floor of the hall above. A small sink and drain are to be seen in the chamber, which evidently served as a rudimentary butler's pantry.

The ground floor of the south-west tower is evidently the

¹ Pitcairn, i. p. 139.

² *History of the County of Bute*, by J. E. Reid, Glasgow, 1864, p. 71.

³ *Ibid.*, p. 91.

dungeon, as is shown by the fact that the door is only 2 feet wide, and secured on the outside by a sliding bar. This chamber is about 7 feet 6 inches square by 9 feet 4 inches high to the vaulted ceiling, while the floor is 2 feet lower

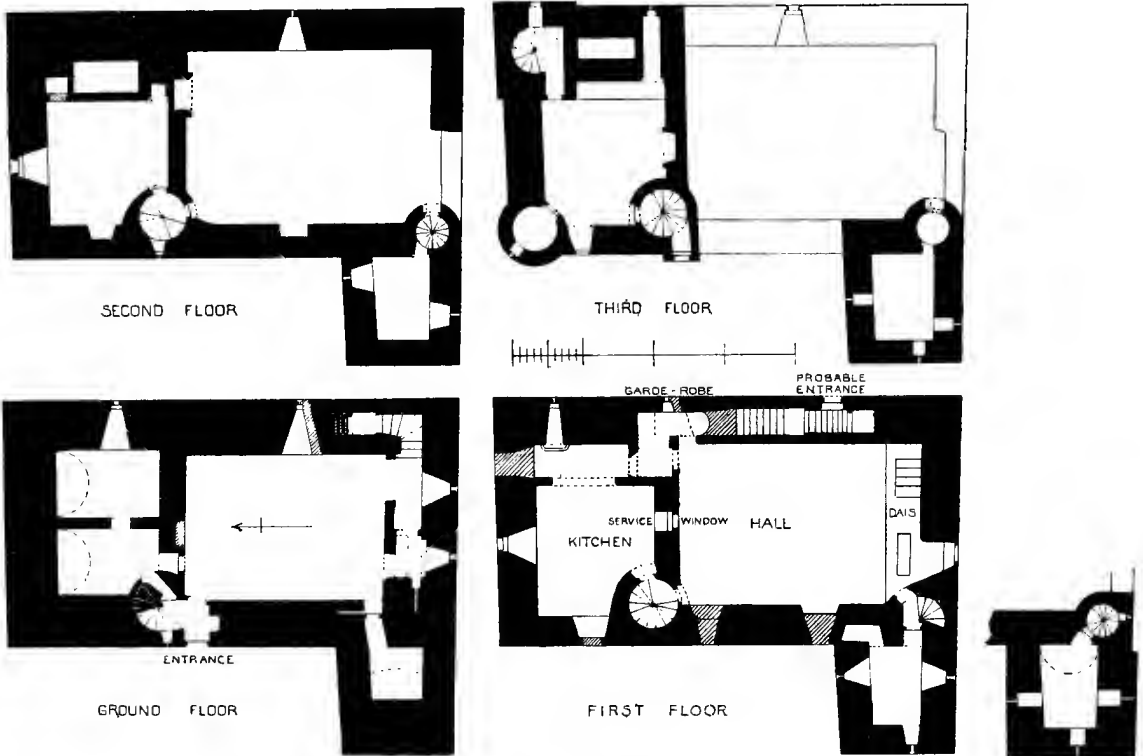


FIG. 2.—Plans of Lochranza Castle.

Note.—These drawings show the castle previous to the fall of the N.E. corner.

than that of the adjoining apartment. At the north end the ground floor is formed into two vaulted chambers, with a door of inter-communication about 4 feet high. On the east front is a door entering directly on to the straight staircase, evidently a subsidiary or private entrance to the apartments of the first floor, provision evidently having been made for

closing the access up or down the stair as desired. The top of this stair has been closed up at a later period, and a wardrobe formed on the other side; the dotted lines on the plan show the position of partitions indicated on the floor and ceiling, but now removed.

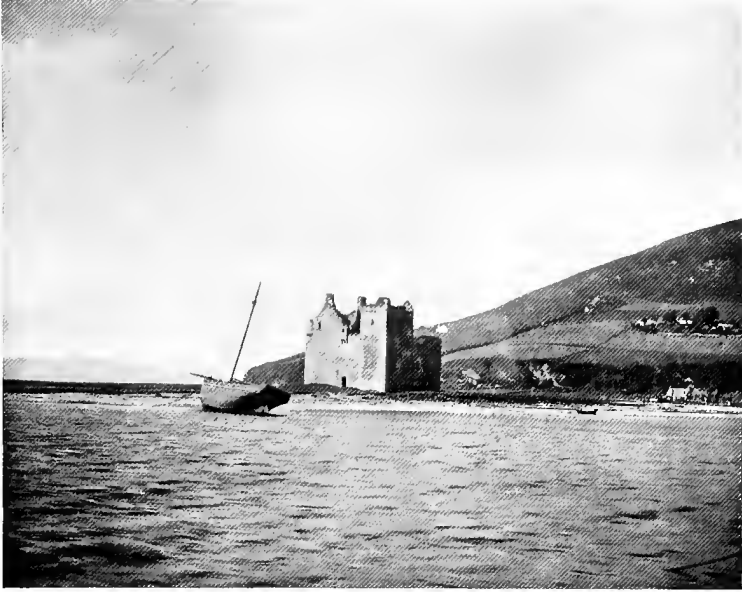
The first floor consists of three apartments. At the south end is the hall, 34 feet 6 inches by 23 feet; it was lit by three windows, and had originally a timber floor, except across the south end, where the dais was raised in stone 2 feet higher. The fireplace, having been built up, is not now visible, but it must have been on the dais near the south-east corner, as is suggested by the presence of flagstones, which are still in position and extend over 5 feet. Off the south-west corner of the dais opens a circular stair leading from this level to the upper floors, and to a chamber in the small square tower. The north end of this floor is occupied by the kitchen with a service opening to the hall, a large fireplace, and a sink and drain at the window.

The second and third floors were, as mentioned, reached by two circular stairs.

The south-west tower contains a vaulted chamber at a higher level than the main building, and was finished by a battlemented walk, now inaccessible, but indicated by the gutter outlets still visible along the north side; the south-west angle was carried up probably as a watchtower.

The north-east angle of the building was also carried up to form a tower, and was provided with a separate staircase. Unfortunately, about thirteen years ago, a storm undermined this portion of the building, and the whole corner fell out, carrying away all the upper works.

It will be noticed that several windows and the head of the straight staircase have been built up, apparently with the object of using the building as a store. In some places the dressed jamb-stones had previously been removed. I would suggest that this alteration most probably took place during the eighteenth century.



1



2

1. Lochranza Castle, from the S.W.

2. Lochranza Castle (interior view of Hall, looking South, showing remains of dais).

Some trifling repairs have been executed, but much more requires to be done if the remains are to be preserved from further dilapidation.

As in the case of Brodick Castle, very little is known regarding the history of this building, but that it occupies a very early site is shown by Fordun, writing about the end of the fourteenth or beginning of the fifteenth century. He mentions two royal castles in Arran—Brethwyk and Lochransie.¹ Lochranza Castle was held by John de Monteith, Lord of Arran, who in 1433 conferred it, with the lands adjoining, on Sir Duncan Campbell of Lochaw. Between 1445 and 1450 Ronald McAlister was keeper and tenant. By grant of James II. the castle and lands passed to Alexander, Lord Montgomery, whose grandson in 1488 was keeper of Brodick Castle, and in the following year of Rothesay.

Like Brodick Castle, Lochranza must have passed through considerable vicissitudes, for it is evident that the existing building is no earlier than the latter half of the sixteenth century, as indicated by comparison with similar structures the age of which can be gauged by definite information.

It is most unfortunate that in this case, as in many of our most interesting buildings, there has been no proper supervision of the structure exercised, nor have the necessary repairs been done which would, at a small outlay, have ensured its permanent preservation.

KILDONAN CASTLE.

This castle is situated at the south end of Arran, on a rocky plateau on the seacoast. It is defended on the east or seaward side by a cliff of no great height, on the south by a small gully, and on the north evidently by a small courtyard defended by another small gully. The west and landward side was

¹ Skene's *Translation of Fordun*, vol. ii. p. 39.

probably defended by a dry ditch now filled up. The building is oblong, 28 feet 5 inches by 22 feet; it possesses no architectural features of interest, and is unfortunately in a very ruinous condition.

The entrance door appears to have been situated at the

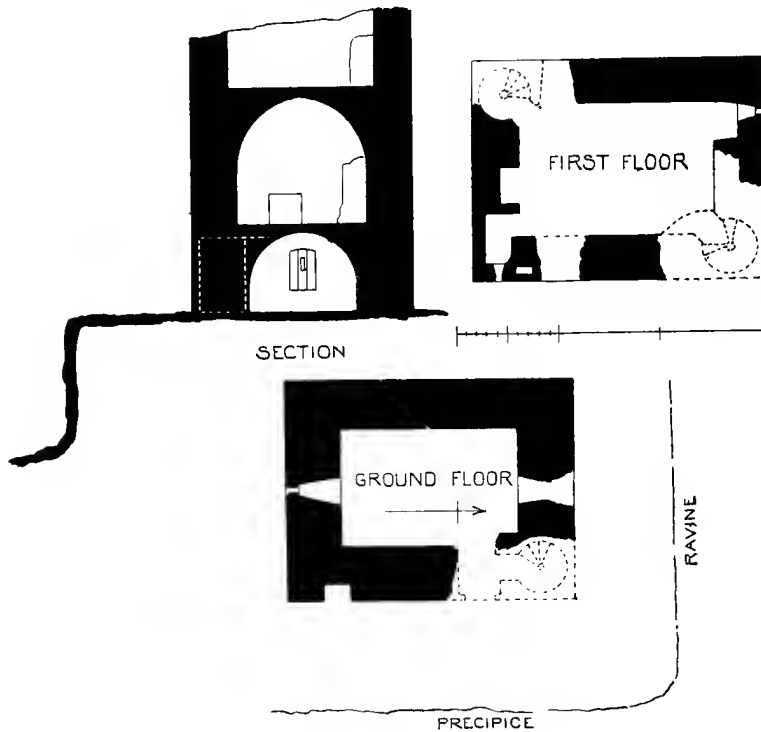


FIG. 3.—Kildonan Castle.

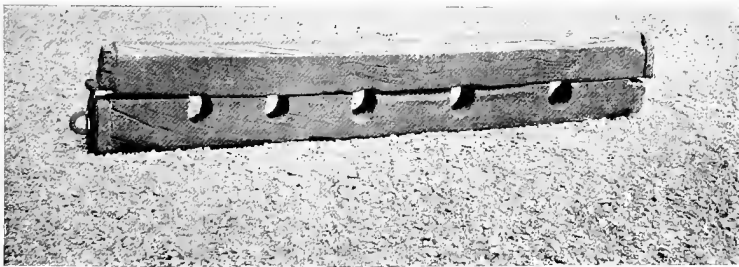
Note.—These drawings show the castle previous to the fall of the S.W. corner.

north-east corner; from this a circular stair led to the first floor, and thence another circular stair at the diagonally opposite corner led to the upper floors. This arrangement added to the defence of the structure, and is often met with elsewhere.

The ground floor has walls 6 feet thick, and is covered by



I



2

1. Kildonan Castle, from the South.
2. Stocks, Brodick Castle. (7 feet $1\frac{1}{2}$ inch long, 1 foot $1\frac{1}{2}$ inch high, 5 inches thick.
The lower beam is $\frac{1}{2}$ inch higher than the upper.)

a waggon vault roughly built of thin stones. It is lit by narrow slits in the north and south walls.

The first floor or hall is covered by a slightly pointed barrel vault 13 feet high, and similar in construction to the other. It had a fireplace in the south wall; and was lit by two small windows in the side walls. There was also a guard-robe in the south-east corner.

The second floor was probably similarly vaulted, and covered with stone slabs forming the roof. The walls of this floor and of those below are 4 feet 6 inches thick.

There is absolutely no history preserved of this structure, nor can its date be fixed, even approximately. Nothing more definite can be said than that it was erected between, say, 1300 and 1500 A.D.

This castle is unfortunately in a very bad state of repair, and, notwithstanding representations made on several occasions to the representatives of the proprietor, nothing has been done. In consequence, a large portion at the south-west corner fell away about eight years ago, carrying with it most of the first floor vaulting. Unless something is done soon, other portions, now most insecure, will also fall.

I am largely indebted for the material composing this article to *Castellated and Domestic Architecture of Scotland*, by M'Gibbon and Ross, Edinburgh, 1887, vol. iii. I have also to express my thanks to Mr. Thomas Ross, F.S.A.(Scot.), and Mr. Hippolyte J. Blanc, R.S.A., for kindly lending me plans for reproduction; to Mr. Vernon Constable, A.R.I.B.A., for taking specially the photographs reproduced in this article; and to the local representatives of the Marchioness of Graham, for kind assistance.

THE HOLY ISLE.

By THE EDITOR.

HISTORY provides very little information regarding the settlement made on the Holy Isle, or, as it was formerly called, Lamlach or Molas Isle, by St. Molaise, or Molingus, or Lasrian, the missionary to Arran of the Celtic Church, who came thither about the year 680 A.D. The influence of this saint must have been considerable, as from his time the isle has been regarded as a revered place.

About the beginning of the thirteenth century, Reginald MacSommerled, *Rex Insularum*, is said to have erected a monastery on the island. A structure here was described by Dean Monro of the Isles, in the year 1594, as 'ane Monastery of friars which is decayit.' The accepted site of this monastery is close to the farmhouse. With the view of ascertaining if any remains of the found of the monastery could still be traced, the writer went to the Holy Isle in May 1908, but, unfortunately for the purpose of examination, the site of the monastery was under crop; on some of the furrows traces of mortar could be observed; in the depression between the furrows grey slabs were visible, evidently the covering-stones of graves, this place being considered by the natives of Arran the principal burying-ground prior to the year 1790, about which date interments ceased. Inquiry brought forth the information that crops have been grown on this graveyard since 1835.

In the early days of November the work of examination was resumed, and at the place where most mortar was seen, digging was commenced. Only a little over two feet from

the surface a foundation was got in the position shown on the ground-plan (Fig. 1); this was laid bare, and revealed a solid mortar-built circular found, 22 feet in diameter. A fairly wide trench was dug round this base, going somewhat deeper than the base itself, but not the slightest indication

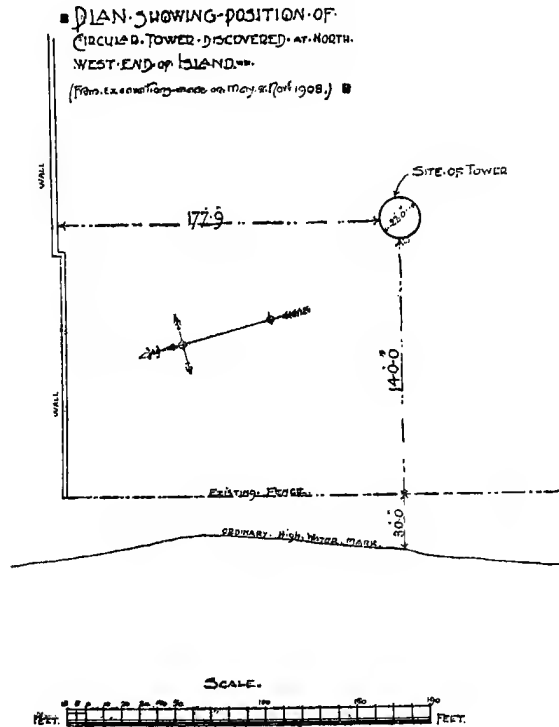


FIG. 1.

could be got of any other building ever having been attached to it. The surrounding field was carefully examined, but no trace of any further building could be discovered. It may have been that the monastery was built of wood, as we know some of the early Scotie monasteries were, or was a dry-built structure; in either case all trace could easily be obliterated.

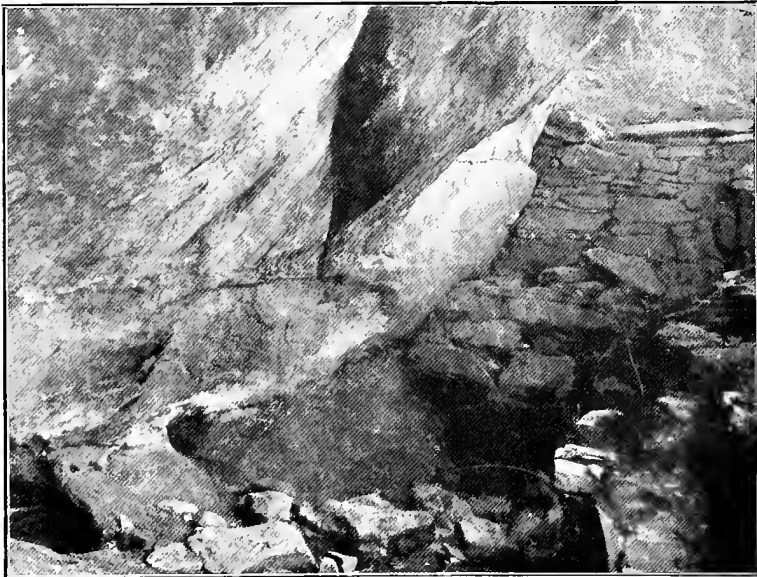
In the twelfth century, Somerled, it is stated, erected a fortress on the Holy Isle. With that building, I venture to believe, the circular foundation discovered should be associated, and not with its monastic contemporary. In defence of this statement, reference to *Letters and Papers of the Reign of Henry VIII.* may be made. There we find a navigator (L'Artigue) giving the following account: 'To know the commodities of the West side of Scotland, you must pass by the foreland of Saynt George and the first town that you shall find is called Saynt Jhon Deir (French original, St. Jean de Ayr). Four leagues thence is Mellache (Lamlash). Describes Mellache (a port which can float a hundred great ships, and is only defended by two small towers, one beside the haven and the other on the isle that makes the port).' The date of this account is 1543. The small defence tower on the isle, noted by L'Artigue, and the fortress erected by Somerled, are we not justified in concluding to be one and the same? A small fragment of the wall of this tower, supported by two aged trees, stood until December 1879, when they were blown down. In digging for the foundation, several pieces of stone were discovered that had been thickly coated with a green glaze or glass. None were seen in the found, but some were picked up around it. Similar glazed pebbles have been found occasionally in connection with other early buildings, but their origin is not understood. A fragment of a circular ornament of shale, rudely cut, was also got. Above the monastery site, built against the cliff, are some thick walls of red sandstone; what this structure can have been is difficult to determine. The remaining parts look like fifteenth or sixteenth century work. No information could be obtained regarding this building.¹

After the unsuccessful search for the remains of the

¹ Robertson, in his *Tour*, states: 'Near the north end (Holy Isle) there are the remains of an old chapel, built after the Gothic taste.' This is likely to be the structure he refers to. (*Robertson's Tour through Some of the Western Islands of Scotland*, 1768. MS. Society of Antiquaries of Scotland.)



1 (S. A.)



2 (S. A.)

SAINT MOLAISE'S CELL.

1. Stairway into Cell.
2. View of South Wall.

monastery, attention was directed to the cave, or cell, as it proved to be, of St. Molaise. The cell is situated about one mile from the monastery site, and occupies a position on the hillside about twenty-five feet above the present sea-level. The cave was found silted up with soil almost level with the approach. The soil near the entrance being removed, a stone was laid bare; beneath, still another. It was considered that they formed part of a stair (Plate XLVI. No. 1), and, on the soil being removed, the surmise proved correct; it was seen that the lowest step rested upon paving. A volunteer party was made up, and the work was proceeded with on succeeding days, till the entire cave was emptied of the accumulated soil. It was only when this had been

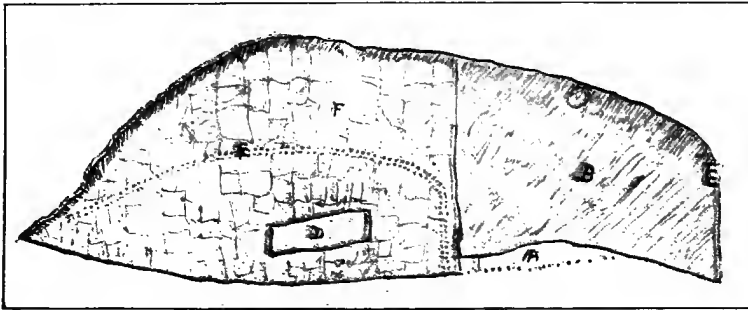


FIG. 2.—Ground Plan of Cell.

A, Stair. B, Rock Floor. C, Fireplace. D, Altar Stone (?). E, Drain. F, Paving.

done that the full value of the discovery could be realised. Here, before us, was the cell as occupied by the saint, complete, but for a part of the face wall, which had fallen in, and a few courses of the side walls.

The cell, of which Fig. 2 shows a ground-plan, is $38\frac{1}{2}$ feet long by 13 feet at the widest part, that is, close to the foot of the steps. The cell is paved from the middle to the north-east corner, or for about 26 feet. In this paving is set a large stone raised but little above the paving; it measures 5 feet 11 inches in length by 1 foot 8 inches in depth; the

ends lie almost north and south. Some of the paving having got shifted, an examination was made of the rock below, and a drain was found cut out of the solid rock ; it passes out under the flags at the foot of the stair. At the south-west end of the cell the work of excavation presented features of interest different from that of the earlier work done. When about three feet of soil and loose stones had been removed, a deposit of black matter was reached, in which were considerable quantities of shells, mostly of limpet and oyster. Then occurred about two inches of black sand without any shells. This was followed by more black refuse, with very large quantities of the shells observed higher up ; and the full significance became obvious, when a number of bones were found that had been split to extract the marrow ; the mass was simply kitchen refuse. Most of the bones were those belonging to domesticated animals.¹ When the rubbish had been removed, a fireplace was brought to view ; the accumulation from a higher elevation had evidently slipped down over it. It may here be mentioned that the greatest thickness of deposit was round about the wall at this end of the cave ; it gradually tapered away towards the pavement. The fireplace is built with a portion going under the south wall ; attached to the wall had been uprights, with a flat stone on the top ; unfortunately, the weight of earth above had caused this portion of the fireplace to collapse. The vent is made between the courses of stone forming the wall.

We may accept the fact, that, when St. Molaise, or some successor, occupied this cell, the north-east portion was used for devotional purposes, the south-west as the domestic part. The wall at the south end of the cave (Plate XLVI. No. 2) reaches a thickness of 3 feet 5 inches, and this,

¹ A collection of these bones was given to Professor Thomas H. Bryce, who kindly made a thorough examination of them. They proved to be mostly fragments representing ox, sheep, pig, and deer. Most of the bones were those of young, immature animals.

as well as the face wall, is dry-built ; the stone employed is sandstone and basaltic rock ; both are found abundantly in the neighbourhood. The wall, from the stair to within a few inches of the north end, had fallen almost completely into the cell ; the reason of the collapse is very easy to understand, as soil-slips are by no means infrequent from the almost perpendicular hill-face at this end of the cave. One such soil-slip occurred only a short time ago, when a ton or two of earth fell into the cell, and a large boulder was left resting on what should have been the wall, but, as a matter of fact, it lay upon the soil which probably had been driven before it. This fallen wall has been rebuilt, so as, in the meantime, to prevent soil and loose stones from tumbling into the cell. The ancient wall was probably built up till it met the overhanging rock, this being indicated by the relation of such stones as still retained their original position ; these conformed to the bend of the rock. This being the case, the height of the wall from the paving to the ledge of the rock would be from 8 to 10 feet.

The Runic inscriptions cut in the cave will be referred to separately.

Scores of crosses made by pilgrims to this revered spot can still be traced on the rock ; but, alas ! too often has the modern penknife been employed, in vulgar ignorance, to cut initials detrimental to the older relics of pious visitors.

At one time steps most likely led from the low ground to the cell, but, owing to the large quantity of fallen soil and stones, all trace of them has been obliterated.

The discovery of this cell is interesting from an archaeological point of view, but hardly less so as a memorial of one of the devoted band of men who risked their lives upon the sea in frail coracles, that they might bear the message of peace to the Western Isles of Scotland.

At a short distance from the cell, on the low ground,

there rests an almost circular rock of sandstone (Plate XLVII. No. 2); the top of it has been levelled, and four seats cut on the sides. At the south side of the rock, steps lead up to the top, the steps being fashioned out of rock; at the north end a handgrip is cut on the upper edge, and lower down a foothold has been made. The diameter of the top is 7 feet,



FIG. 3.—Incised Cross on 'Judgment Stone.'

and the circumference at the middle of the rock 31 feet; the height from the highest point to the ground is 7 feet 1 inch. On the east face a curious cross with a ring top is cut (Fig. 3); also there may be seen, by careful scrutiny, some pilgrim crosses. What was this stone used for? At present, the title given to it locally is 'St. Molaise's Table.' In Wilson's *Prehistoric Annals*, it is referred to as the 'Saint's Chair.'



1 (S. A.)



2 (S. A.)

1. Saint Molaise's Well, Holy Isle.
2. 'Judgment' Stone, Holy Isle.

On making inquiry, we were told by a man who came from the west side of Arran that his mother had always called it the 'Judgment Stone.' The island may, on account of its special ecclesiastical associations, have formed sanctuary. If so, at this 'Stone' the claimant for the privilege of sanctuary may have stated his case. Ecclesiastics were known to act also as judges, before the establishment of Crown courts of civil jurisdiction. The term, 'Judgment Stone,' is probably the correct appellation. At the lower side of the remarkable rock just described, there is a rudely chiselled stone with a shallow circular depression, probably used for 'holy water.' It suffered some injury about two years ago by some vandals removing and throwing it upon the rocky shore, from which it is separated only by a narrow path; it is now carefully restored to its original situation.

A few feet away from the 'Judgment Stone,' if we may so call it, is the Well of St. Molaise (Plate XLVII. No. 1). This well, until comparatively recent times, was much resorted to on account of curative properties attributed to it, through its having been blessed by the saint.

We venture to think that the primitive cell, the 'Judgment Stone,' the holy water font, and the well, form, in their conjunction, as interesting a group associated with the name of an early saint as exists in Scotland.

Between the monastery site and the cell there is a cave known as 'The Smugglers.' This cave was partially excavated, and the fact revealed that it had also been used for ecclesiastical purposes, a number of crosses being observed cut on the walls, one showing much care and art in the execution. This cave would be occupied by some anchorite, probably of the period of the dawn of Christianity in pagan Scotland, when the Gospel light was only as isolated points of illumination in primitive monastic cloisters and hermit cells.

These hermits' cells or, more accurately, caves are numerous over Scotland, particularly on the eastern coast; the hermits called them their deserts, and, after the manner of the apostles of old, they withdrew themselves at times from the world of men to these places for meditation and prayer.



RUNIC INSCRIPTIONS ON CELL OF ST. MOLAISE.

***RUNIC INSCRIPTIONS IN THE CELL OF
ST. MOLAISE.**

By **DR. ERIK BRATE**, Lektor, Member of the Royal
Academy of Antiquities, Stockholm, Sweden.

OF the four Runic inscriptions in the Cell of Saint Molaise, Holy Isle, Arran, Nos. I., III., IV. are cut on a narrow projecting ledge of rock above a stone set in the floor, which Mr. Balfour takes to be the foundation of an altar; No. II. is cut on the slope of the rock that forms the roof of the cell. Only No. I. is quite clear. Nos. II.-IV. are all of them partly injured, partly of uncertain reading, because of the difficulty in distinguishing the writing from natural furrows and crevices. This difficulty accounts for the differences in the transcriptions given by Sir Daniel Wilson in his *Pre-historic Annals of Scotland* (8vo, 2nd edit., vol. ii., London, 1863, pp. 280 and 281); a transcript of No. II. by the same author in G. Stephens' *The Old-Northern Runic Monuments* (vol. iii., Copenhagen, 1884, p. 414); and finally, the results attained by the editor of this book, Mr. J. A. Balfour, who, having received a letter from me expressing doubts as to the reading of several runes, went particularly to clear up the ambiguities by examination. Having had no opportunity of seeing the inscriptions myself, I have only been able to form an opinion from examining the excellent photographs and paper casts that Mr. Balfour placed at my disposal.

The runes I give in capitals, in accordance with the way in which Mr. P. M. G. Kermode has transcribed the Manx Runic inscriptions in his great work, *Manx Crosses* (London, 1907), and, indeed, the runes of Holy Isle, Arran, have much

in common with those in the Isle of Man; whereas, for their purport and the presumptive haphazardness of their carving, the inscriptions are more akin to those on the walls of the central chamber in the Mound of Maeshowe, Orkneys (*vide* James Farrar, *Notice of Runic Inscriptions discovered during recent Excavations in the Orkneys*, 4to, Edinburgh, 1862).

The shape of the runes indicates the Norse nationality of the writers, which is corroborated by linguistic particulars of the inscriptions—to wit, the use of one kind of R throughout, whereas in Swedish and Danish there were two R's, and the diphthong *ei*. That the character strokes of R join the middle of the stem does not occur but in a comparatively late period of Runic writing. I should think the inscriptions likely to belong to the twelfth century.

Inscription No. I. is: AMUDAR, evidently a man's name, *Amund*. The nasal sign is dropped before D, as usual in Runic inscriptions. The AR is the ending of the nominative. The length of the inscription is 5 cm., the height of its runes 2.5 cm.

No. II. is 62 cm. in length, and the height of its runes is now 16-21 cm. The beginning of the inscription is clearly a man's name, UIGLÆIKR, Old Norse *Vigleikr*, to which reading no objection can be made. The dot of G is clear, and the shape of the rune tolerably so, already in the transcription forwarded to Professor G. Stephens by Sir Daniel Wilson. Of R the lower half of the stem is missing, but the character stroke well visible on the paper cast.

The second word I take to be STALLR. There is some little doubt as to the character stroke of T, but T is very likely to be correct instead of I, *st* being a frequent combination of sounds, and on the cast there is indeed a trace fitting to the character stroke of T. The R seems doubtful on the photograph, but the cast establishes this reading to be correct. STALLR must be a surname of Wigleik's. B. Kahle, 'Die altwestnordischen Beinamen,' p. 252, in *Arkiv*

for *nordisk filologi*, vol. xxvi., Lund, 1910, quotes Old Norse *Stallr* as a surname twice from the *Diplomatarium Norvegicum*, viz., Hallvarðr Stallr DN vol. i., 453, and Kráki Stallr vol. ii. 278, both from the fourteenth century. According to Vigfusson's *An Icelandic and English Dictionary*, Oxford, 1874, *stallr* means—(1) any block or shelf on which another thing is placed; (2) a pedestal; (3) a stall, crib; (4) the step of a mast, but which of these significations *stallr* has as a surname Professor Kahle fails to explain.

The rune after has not the shape of any ordinary rune, which no doubt depends on wear. What is left is a stem and a very distinct character stroke, jutting out from the middle of it in an oblique direction upward to the right, half the height of the upper stem. Round the starting-point of the stroke there is a little hollow, which is the only thing Sir Daniel Wilson brings into account, reading an \mathfrak{H} of the Manx rune type, and totally disregarding the character stroke. Mr. Balfour is inclined to read a corresponding stroke on the left side of the stem, but this would not give us any known rune either, nor is there any sufficient trace of it on the cast and the photograph. Some part of the rune is worn away. As for the upper part of the rune, \mathfrak{R} might be thought of, but below there is no trace of its character stroke; but for all that, the rune does not seem likely to have been any other than \mathfrak{R} . After this \mathfrak{R} both Sir Daniel Wilson and Mr. Balfour read another \mathfrak{R} , which the photograph and the cast do corroborate.

The following rune Mr. Balfour reads \mathfrak{F} , which seems correct; the two character strokes do not reach the height of the stem, and an \mathfrak{F} of that form now and then occurs in Swedish Runic inscriptions. Sir Daniel Wilson has overlooked one of the strokes. After \mathfrak{F} , Sir Daniel Wilson and Mr. Balfour agree in reading \mathfrak{N} , which is correct, and then \mathfrak{A} , which reading is somewhat doubtful, only the upper half of the stem being preserved. Next rune is \mathfrak{S} , and the

last one I, as Mr. Balfour states them to be. Sir Daniel Wilson took the last rune to be A.

Putting an interrogation after the runes of uncertain reading, I am inclined to read the inscription as follows:—

UIGLÆIKR STALLR R(?)RF(?)NA(?)SI

The groups of runes, UIGLÆIKR and STALLR I have already explained above as a man's name, Old Norse *Wigleikr* and its surname *Stallr*. The Æ resembles A, only the bar is crossing the stem of the rune. The rest of the inscription must contain some abbreviation, so many consonants being crowded, and three R's close together. I should like to suggest RR to signify *r[æist] r[úmar]*, 'cut the runes,' and FNASI, *f[rá] N[æsi]* 'from Ness,' the homestead of Wigleik Stall. Cp. *Manx Crosses*, p. 73: [A. B. erected] this [cross] to the memory of Ofeig, his father, but Gaut, the son of Bjorn, of Cooley, made it. In St. Michael, Isle of Man, there is still a farm bearing the name of Cooley. Thus I suppose Wigleik may have felt inclined to tell in what place he lived. It is true, we might expect NÆSI, with the bar crossing the stem of the rune like Æ in UIGLÆIKR, and that no crossing can be traced now, but it may have been worn out. Old Norse *Næs* is a frequent local name. By the Old Norse in Scotland it was used as an abbreviation of *Katanes*, Caithness, and so the coast of Scotland was called as seen from the Isle of Man, but *Næs* here probably means some Old Norse settlement in the vicinity of Holy Isle, or in Norway itself, if the cutters were seafaring people, accidentally visiting the cell of St. Molaise, as may well be the case.

No. III., in two lines running from the right to the left, is much damaged, the beginning of both lines being lost or greatly injured. About three-fifths the height of the runes there is a distinct Latin F at the left end of the upper line, which has probably no connection with the runes.

The upper line is 5 cm. in length, its runes are the same height. The runes are perhaps LANOI. Mr. Balfour gives the authority for the first rune being L; the character stroke at the top is not very well discernible on the photograph, although possible, and on the cast there is but a faint shade of the whole upper half of the rune. AN he reads as well as I do, and so he does o, only with an additional stroke to the left, in which he must be mistaken. The last rune he reads I, and the cast shows no character stroke. What word this has been, I cannot imagine.

Although there are a great many vertical furrows as far to the right as the upper line goes, I believe they are no remnants of runes. But to the left of the deep hollow, just below the Latin F of the upper line, there are five runes running from the right to the left, likewise 5 cm. in height, and covering a space of 5 cm. in length. They seem to be OLATH_R. The fourth rune is now certainly TH, a segment of a circle being attached to the upper part of the stem; but OLATH_R giving no meaning, I suppose there has been originally a similar segment attached to the lower part of the stem, which would afford the rune B and the well-known Old Norse name *Óláfr*, written OLABR, 'Olave.' In the Manx inscriptions the rune B often corresponds to Old Norse *f*, e.g., OULAIRB: LIUTULBSUNR, ULB 77 Ballaugh, THURLIBR, HABRS 108 Braddan. The two segments of the rune B are separated by an interstice at the middle of the stem in this inscription, as in many other inscriptions; as a rule they join close to each other.

No. IV. likewise consists of two lines, but running from the left to the right. Both lines are much injured and worn.

The upper line has a length of 8·5 cm., the height of its runes is 3 cm. to the left, and gradually diminishing into 2 cm. to the right.

The three words of the upper line are separated by

colons, and the two last words are RAIST : RU, which means, 'cut the runes,' RU being an abbreviation of RU[NAR]. The name of the cutter precedes, consisting of five runes, and the final R : of that name is distinct on the photograph, according to which the name seems to be INAKR. On the paper cast I discern the final R of the name, but only the stems of the other runes. An Old Norse name INAKR does not exist, but there is perhaps a dot on the middle of the rune I, which changes it into an H of the form used in the Manx Runic inscriptions. That dot seems possible on the photograph, and at least not impossible on the paper cast, but cannot be said to be certain. If that dot is assumed to be real, the name is HNAKR, which has indeed an Old Norse appearance. But I cannot quote this name from other sources, whereas the name *Hnaki* occurs all over the North. The name HNAKR is perhaps originally a nickname; Old Norse *hnakkr* is a variant of *hnakki*, 'the occiput,' and parts of the body often gave rise to nicknames, if odd in any way. Thus Old Norse *hvirfill*, 'the crown of the head,' is a nickname without any explanatory determinative.

The lower line is cut immediately below the upper line, but extends 2·5 cm. farther to the left, and probably 20 cm. more to the right, its whole length being 32 cm. Its runes are deeply cut, and much higher than those of the upper line, viz., 4 cm. to the left and rising into 5 cm. to the right, and their interspaces are much greater—on an average 1 cm., sometimes 1·5 cm. This difference of size and habitus of runes makes it probable that they were cut by another man than the upper line.

The number of runes was probably seventeen, but out of that number only three are pretty certain. As a rule, only a little piece from below is visible of them.

Of rune 1 very little is left, but 2 being R, 3 U, and 4 probably L, I take 1 to have been an H of the Manx type, so as to get the beginning of the common name *Hroll[fr]* as

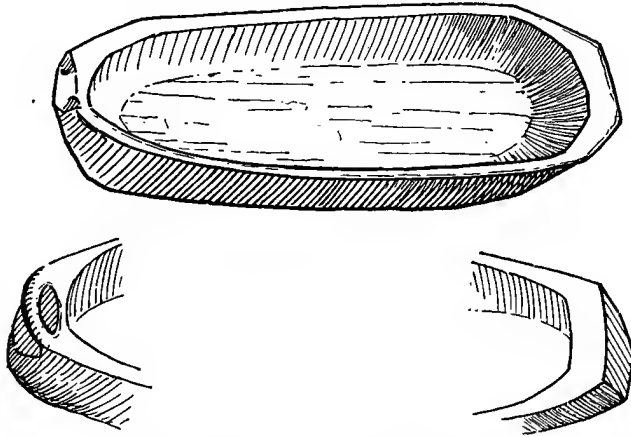
the name of the cutter. Next clear rune is the last but four, and is R, the initial rune of R[AIŠT], *raist*, the past tense of the verb 'to cut.' Of AI a third from below is preserved, of S nothing at all, because that rune consists in a stroke from the top of the line, and does not reach so far below, but the rune is indicated by an interval of 2·5 cm. between I and T, of which latter the whole stem is visible.

The inscription has had a similar meaning as the line above, and is simply an announcement that the man Hrol[fr] cut the runes. What has been between *Hrol[fr]* and *raist* we cannot make out; it was probably an information of whose son Hrol[fr] was.

As far as they can be deciphered and understood, all the four inscriptions consist of names, in three cases with the remark that the bearer cut the runes. The cutters had no other object than many tourists nowadays, to immortalise their names in a remarkable place.

WOODEN VESSEL FOUND AT TÒRR RÌGH MÓR.

IN the boat-house at Dubhgharadh Lodge there is carefully preserved, in a glass case, a wooden vessel, found eight years ago in the peat-moss at Tòrr Rìgh Mór. Since it was dug up by Mr. Matthew McAlister of Torbeg, it has split up considerably, and only an approximate idea can now be had of its original shape. Happily it was measured and a sketch made of it at the time of finding: the discovery was re-



Wooden Vessel found at Tòrr Rìgh Mór.

ported to the Society of Antiquaries of Scotland by the late Mr. Patrick Murray. From the *Transactions*¹ of that Society, we find that this trough-like vessel measured at its extreme length 4 feet 5 inches and the width was 20 inches. The inside measurements at the top were 3 feet 6 inches long by 17 inches broad. The bottom was from 2½ inches to 3½ inches thick,

¹ *Transactions of the Society of Antiquaries of Scotland*, vol. xxvi. pp. 582-3.

and the sides tapered to about 1 inch at the top. The vessel is rudely hewn out of a single piece of a tree ; the marks of the tool with which it was fashioned can still be clearly seen. There was a handle at one end ; it became detached at the time of finding.

There is considerable doubt as to what the original use of this vessel may have been ; it seems too short to have been utilised as a canoe, yet in shape and in having a single handle it corresponds to a type of Irish canoe ; these, however, are usually 8 to 12 feet in length. It may have been a *Ciste-Mhairbh* ('chest of the dead') for a child ; coffins hollowed out of the trunks of trees have not unfrequently been met with. At present the Dubhgharadh example is a unique specimen, and any suggestion as to its use must be merely conjectural.

A HEALING STONE.

THIS venerable and interesting relic of past days can be traced as having been in the possession of the family of the present owner (Mr. Robert Crawford) for over two hundred years ; its antiquity is, however, probably very much greater. Unfortunately there is no record extant of how the stone came into the possession of the family.

The stone is rock-crystal. One side of it is flat and oval, measuring 48 mm. by 35 mm., the other is egg-shaped, the extreme thickness is 10 mm.

There is no information available of when the stone was last called upon to exercise its healing qualities, but tradition says, that when it had been used and a cure effected, care had to be taken by the person in whose possession it was, for as soon as he crossed the threshold of the house wherein the act of healing had been done, the first living thing that came in the line of his path died ;

it was customary, therefore, to make such arrangements as to ensure that only a member of the humbler animal kingdom should be sacrificed. On one occasion this precaution had not been taken, and the first living things to be met with by the bearer were a man ploughing with a team of four horses; the man and horses dropped dead at once. A mound is pointed out in Scorradaile where they lie buried just as they fell.

The stone has been fractured slightly at one end, having accidentally fallen into a fire. From the style and shape of the stone, it is quite probable that at one time it formed part of a reliquary, and the virtue ascribed to it may, in the first instance, have been due to its association with the relics of some saint.

The only other Healing Stone we have been able to trace is the one described by Martin, as follows:—‘ I had like to have forgot a valuable Curiosity in this Isle, which they call *Baul Muluy*, i.e. *Molingus*, his Stone Globe; this Saint was Chaplain to *Mack Donald* of the Isles, his Name is Celebrated here on the account of this Globe, so much esteemed by the Inhabitants. This Stone for its intrinsick value has been carefully transmitted to Posterity for several Ages. It is a green Stone much like a Globe in Figure, about the bigness of a Goose Egg.

‘ The vertues of it is to remove Stitches from the sides of Sick Persons, by laying it close to the Place affected, and if the Patient does not out-live the Distemper, they say the Stone removes out of the Bed of its own accord, and *e contra*. The Natives use this Stone for Swearing decisive Oaths upon it.

‘ They ascribe another extraordinary Vertue to it, and ’tis this—the credulous Vulgar firmly believe that if this Stone is cast among the Front of an Enemy, they will all run away, and that as often as the Enemy rallies, if this Stone is cast among them, they will lose Courage, and retire.

They say that *Mackdonald* of the Isles carried this Stone about him, and that Victory was always on his side when he threw it among the Enemy. The Custody of this Globe is the peculiar Privilege of a little Family called *Clan-Chattons*, *alias Mack Intosh*, they were ancient Followers of *Mack Donald* of the Isles. This Stone is now in the Custody of *Margaret Millar* *alias Mack Intosh*, she lives in *Baellmanich*, and preserves the Globe with abundance of care; it is wrapped up in fair Linen Cloath, and about that there is a piece of Woollen Cloath, and she keeps it still lock'd up in her Chest, when it is not given out to exert its qualities.' ¹

A further legend regarding the 'healing stone' of St. Molaise is still told on the island. It was the practice of this saint to take the stone with him when he went to visit the sick. When he entered the room in which the afflicted person lay, he laid the stone upon the floor. From its action was indicated what should happen. If it remained stationary the sick person recovered, if it rolled out of the door, their death was certain.

ARROW-HEADS OF 'CORRIEGILLS' PITCHSTONE.

IN the Cairn-burials of Arran and Bute,² it had been noted by Professor T. H. Bryce that flakes of 'Corriegills' pitchstone were almost invariably found in the deposits; but the reason was not then obvious, as no worked implement of this stone had been obtained. The solution of the problem why these flakes had been put beside the dead, has, however, been forthcoming. Among the various articles found in Arran, and kindly exhibited to the writer

¹ Martin's *Description of the Western Islands of Scotland*, London, 1703, p. 225.

² See *Proceedings of Society of Antiquaries of Scotland*.

by their owners, were two arrow-heads of 'Corriegills' pitchstone,¹ and a third was found last year (1909) during peat-digging in Tormore Moss, and given to the writer by the finder. These specimens clearly demonstrate that the use of pitchstone as a substitute for flint was at least not unknown in Arran and Bute. The flakes had evidently been placed in the sepulchral deposits as flint flakes were in other districts.

In connection with 'Corriegills' pitchstone arrow-heads, it may be well to recall the observation made by Robertson in his 'Remarks made in a Tour through several of the Western Isles and West Coast of Scotland,' 1768.²

'Arran—Elf Shot.—About half a mile to the north-east side of Kilbride there is an uncommon kind of rock. It is, upon comparing, the same in substance as that with which the ancient inhabitants tipped their arrows, many of which the natives even now frequently find in the island. They have an absurd and superstitious notion that they are shot by infernal spirits, and will affirm that they have stuck so fast in the shafts of their spades that it required much force to disengage them. They call this stone the Elf-shot stone, supposing that it is from the cows receiving a wound by this stone that they become elf shot.'

THE 'SERPENT MOUND,' MOINECHOILL.

SITUATED close to the farmhouse of Moinechoill, and easily seen from the String Road, is the 'Serpent Mound.' It is commonly believed that this mound is artificial, and is a memorial of some ancient form of worship. So often were we told of this, that we felt it to be a duty to make an

¹ These have generously been gifted to the National Museum of Antiquities, on their importance being shown.

² *Proc. Soc. Antiq. Scot.*, vol. xxxii. p. 18.

examination of the mound, though acquainted with the fact that the Geological Survey had noted it as being one of a number of eskers to be seen in this locality.¹ In April 1909 the mound was visited, and dug into at several points, and the opinion confirmed that the mound is natural, and owes its interesting form to Nature alone.

CATALOGUE OF OBJECTS FOUND IN ARRAN.

PLATE XLIX.

1. Stone axe, 110 mm.² in length; width of cutting face, 59 mm.; thickness, 30 mm. Found at Bennan, 1904. Property of Dr. Neil Fullarton.

2. Stone axe, 135 mm. in length; width of cutting face, 56 mm.; thickness, 32 mm. Found at Bennan, 1906. Property of Dr. Neil Fullarton.

3. Stone axe, 117 mm. in length; width of cutting face, 54 mm.; thickness, 55 mm. Found at Leacamhór, Clachaig, 1904. Property of Dr. Neil Fullarton.

4. Stone axe, finely worked, 88 mm. in length; width of cutting face, 56 mm.; thickness, 21 mm. Found near Lamdash. Property of Miss M'Bride.

5. Stone axe, 97 mm. in length; width of cutting face, 43 mm.; thickness, 21 mm. Found at Bennan, 1908. Property of Dr. Neil Fullarton.

6. Stone axe, 126 mm. in length; width of cutting face, 52 mm.; thickness, 25 mm. Found at Clachaig.

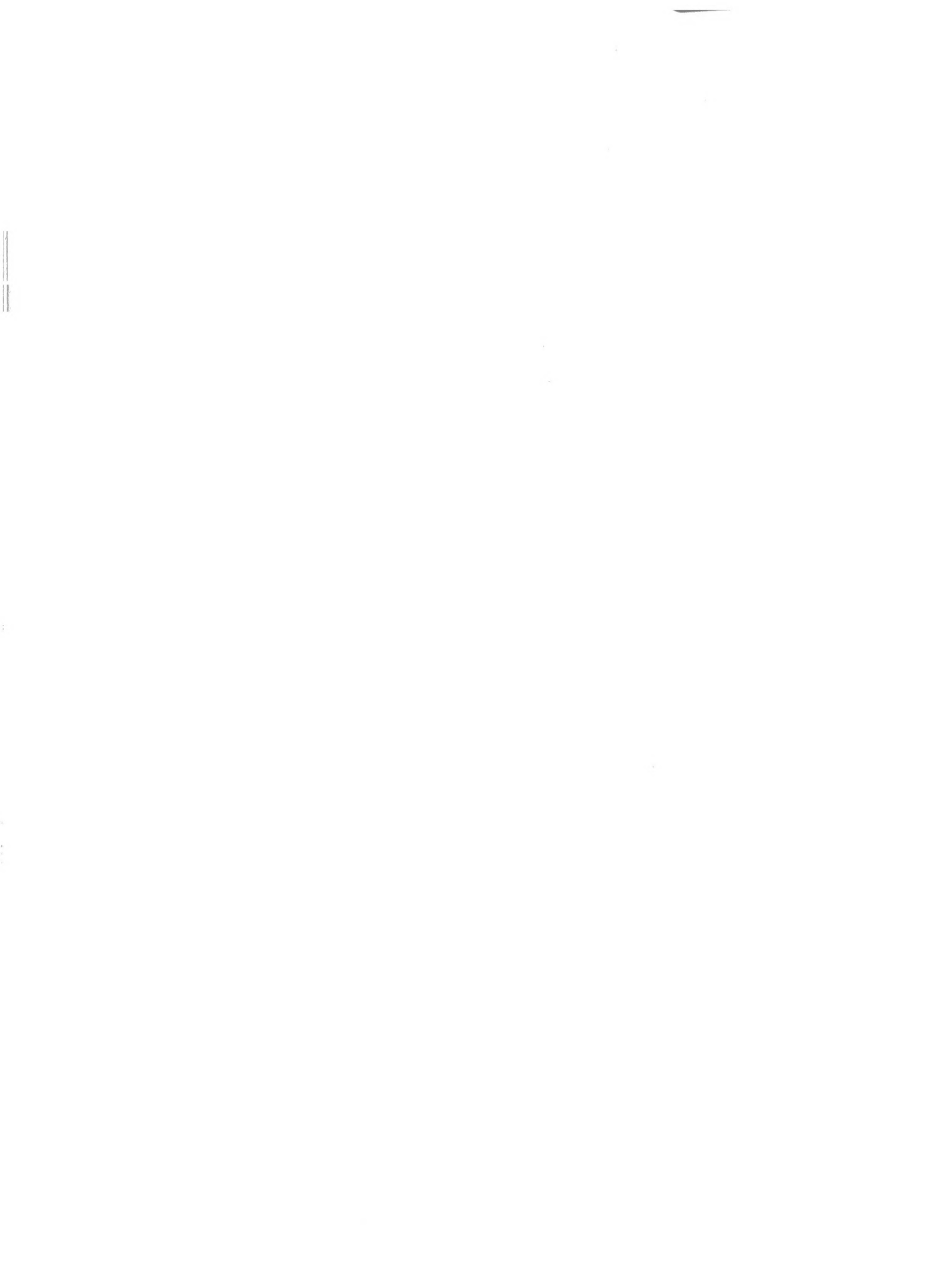
7. Stone axe, 177 mm. in length; width of cutting face, 64 mm.; thickness, 23 mm. Found at Clachaig. Property of J. R. Thomson.

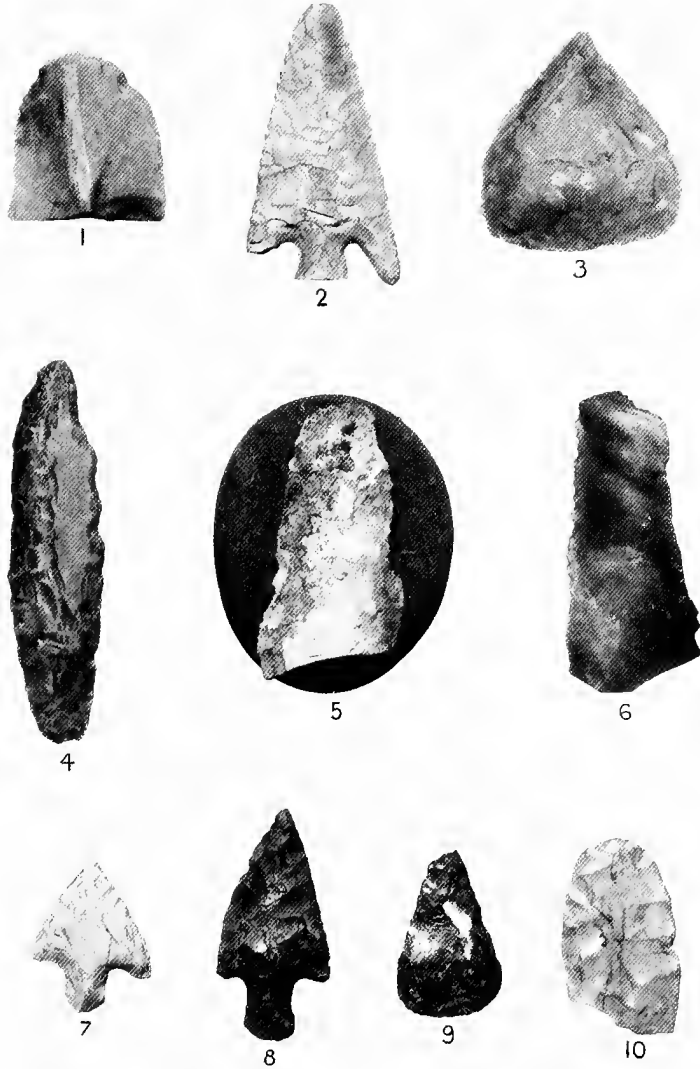
¹ For particulars see *Memoirs of the Geological Survey: North Arran and South Bute*, p. 136.

² 1 inch = 25·399 millimetres.



STONE IMPLEMENTS.
Axes.





STONE IMPLEMENTS.
Flint Arrow-heads, Scrapers, etc.

PLATE L.

1. Grey flint implement, use uncertain. Found Tormore Moss.

2. Arrow-head of flint, 50 mm. in length; width across barbs, 25 mm.; length of barb, 9 mm. (one barb is broken, and a small portion of the point); greatest thickness, 5 mm.; length of stem, 7 mm. Found at Corriecravie. Property of John Cook.

3. Leaf-shaped arrow-head of cherty flint, 40 mm. in length; greatest width, 35 mm.; thickness, 11 mm. Property of Professor T. H. Bryce.

4. Flint-knife, 67 mm. in length; breadth at centre, 17 mm.; thickness, 5 mm. Found at West Bennan. Property of Dr. Neil Fullarton.

5. Water-worn pebble, with calcined flint implement, as found in short cist, Achancairn, March 1909.

6. Scraper of black flint, found at Tormore Moss. To be presented to National Museum of Antiquities.

7. Flint arrow-head, with stem, length, 26 mm.; greatest width, 22 mm.; stem, 9 mm. Property of Professor T. H. Bryce.

8. Brown flint arrow-head, with stem, length, 41 mm.; greatest width, 20 mm.; stem, 11 mm. Property of Professor T. H. Bryce.

9. Corriegills pitchstone arrow-head. Presented to the National Museum of Antiquities.

10. Portion of a flint implement, found at Corriegills. Property of Archibald Cook.

PLATE LI.

1. Stone ball, 70 mm. in diameter, with 4 disks, 57 mm. in length. Found about 14 inches below the surface when

widening the road at Dippen, 1891. Property of Peter Jenkins.

2. Whorl stone, 34 mm. in diameter; bore, 10 mm.; thickness, 8 mm. Found at Kingscross (1).

Whorl of sandstone, with an irregular diameter of about 40 mm.; bore 10 mm. Found at Kingscross (2).

Whorl of usual type, one of many examples seen. The specimen illustrated was found near Lamdash (3).

PLATE LII.

1. Bronze palstave, length, 155 mm.; greatest width of cutting face, 49 mm.; length of fastening groove, 68 mm.; depth, 19 mm. Ornamented with a triangle above fastening groove. Found at Corriecravie, 1909. Property of Alexander Mulholland.

2. Bronze palstave, length, 120 mm.; greatest width of cutting face, 60 mm.; length of fastening groove, 72 mm.; depth, 20 mm. Found at Corriecravie, 1909. Property of Alexander Mulholland.

THE ROYAL SCOTTISH MUSEUM.

Arrow-head of white flint, with barbs and stem. Found at Tormore. Noël Paton Collection. (Information supplied by Mr. D. J. Vallance.)

NATIONAL MUSEUM OF ANTIQUITIES.

Objects of Stone.

Two leaf-shaped arrow-heads (flint). Presented by W. Ivison Macadam, 1887. (AD 548-557.)¹

Leaf-shaped arrow-head (flint), from Gleann Rìgh. Presented by James Todd, 1890. (AD 902.)

¹ The letters and figures in brackets indicate the reference in Catalogue of the Museum.



1



1



2



3

STONE IMPLEMENTS.

1. Stone Ball.
2. Whorl Stones.



1



2

BRONZE PALSTAVES.

Axe of felstone, $9\frac{1}{2}$ by $3\frac{1}{2}$ inches, from Clachaig. Presented by A. Bryson, 1856. (AF 2.)

Hammer of mica schist, 3 by $2\frac{1}{4}$ inches. Presented by the Duchess of Hamilton, 1864. (AH 30).

Sinkstone of gritty sandstone, with four grooves. Presented by W. Ivison Macadam, 1892. (AX 50.)

Lower stone of pot quern of sandstone, 1 foot in diameter, from Glenkil. Presented by W. Ivison Macadam, 1887. (BB 82.)

Core of ring of cannel-coal, found with others at Whiting Bay. (FN 13.)

Arrow-head of Corriegills pitchstone, found at Corriegills, finely worked. Presented by Archibald Cook, 1909.

Arrow-head of Corriegills pitchstone, roughly chipped. Presented by Professor T. H. Bryce, 1909.

Flint knife, $2\frac{3}{8}$ inches in length by 1 inch in breadth, and about $\frac{1}{8}$ inch in thickness at the thickest part, is finely worked to shape, with almost straight edges, and a regular convexity towards the median line on one side, the other retaining the original flat surface of the flake, scarcely altered by secondary working. Found at Whiting Bay, 1870. Presented by John Hendry, 1899.

Oval knife-like implement, or elongated scraper of flint with knife-like edge, $3\frac{3}{8}$ inches in length by $1\frac{1}{2}$ inch in breadth, worked to a sharp edge along the sides, and to a round, scraper-like edge at one end. Found at Torlin. Presented by Professor T. H. Bryce, 1902.

Axe of greenstone roughly smoothed, $8\frac{1}{8}$ inches in length by $2\frac{3}{4}$ inches across the cutting face, oval in section in the middle of its length, and tapering to a bluntly truncated conical butt. The cutting edge is nearly semicircular, and uninjured. Found at Clachaig. Presented by Professor T. H. Bryce, 1902.

Roughly made knife or side-scraper of flint, being a flake struck from the outside of a nodule, and retaining the chalky surface of the nodule on one side, measuring $2\frac{1}{8}$ inches in length by $1\frac{1}{8}$ inch in breadth, and trimmed to a sharp edge on one side only. Found at Clachaig. Presented by Professor T. H. Bryce, 1902.

Leaf-shaped arrow-head of flint, $1\frac{1}{4}$ inch in length by $\frac{3}{4}$ inch in breadth. Found at Slidderie. Presented by Professor T. H. Bryce, 1902.

Knife or side-scraper of flint, $3\frac{3}{8}$ inches in length by $1\frac{5}{8}$ inch in breadth, flat on one side, convex on the other, which is the rough chalky exterior of the nodule from which the flake was struck, worked to a sharp convex edge on one side only. Found at Slidderie. Presented by Professor T. H. Bryce, 1902.

Polished and perforated hammer of hornblendic gabbro, $3\frac{3}{8}$ inches in length by $2\frac{1}{4}$ inches in greatest breadth and $1\frac{3}{8}$ inch in thickness, the perforation $\frac{3}{4}$ inch in diameter, nearly straight through, but drilled from both sides, and with a somewhat uneven junction in the centre. Found at Tormore. Presented by Professor T. H. Bryce, 1902.

Elongated oval flake-knife of brownish flint, $2\frac{5}{8}$ inches in length by 1 inch in greatest breadth, made from a slightly bent flake, thickest at the end which shows the bulb of percussion, and thinning and narrowing towards the other end, which is slightly rounded off. The under side of the flake remains flat and unworked; the upper side is worked from the edges towards a median ridge so as to produce a convex surface with sharp edges all round, except at the end with the bulb of percussion. Found at Tormore. Presented by Professor T. H. Bryce, 1902.

Knife of blackish flint, $2\frac{1}{4}$ inches in length and $\frac{1}{2}$ inch in breadth at the base, and tapering to the point. It is worked

from both sides to a ridge nearer the one side than the other, and giving a slight convexity to the upper surface. The under side, which is almost flat, is also worked over, and the edges finely finished. Found at Tormore. Presented by Professor T. H. Bryce, 1902.

Triangular flake of flint, the base and one side unworked, the other side, which is slightly convex, partially chipped to an edge. Found at Tormore. Presented by Professor T. H. Bryce, 1902.

Flake-knife of grey cherty flint, $2\frac{1}{2}$ inches in length by $\frac{3}{4}$ inch in breadth, made from a ridge flake slightly bent, and showing the bulb of percussion at one end, the other tapering to a point. At the butt end the ridge on the back has been chipped off for about half an inch, and the edges worked all round, the rest of the surface of the flake on both upper and under sides being left unworked. Found at Tormore. Presented by Professor T. H. Bryce, 1902.

Fourteen beads of lignite, in the form of thin, circular, flat-sided disks, with small perforations in the centre, varying from about $\frac{3}{8}$ to $\frac{3}{16}$ inch in diameter and less than $\frac{1}{16}$ inch in thickness. Found at Brownhead. Presented by Professor T. H. Bryce, 1902.

Three flint implements, viz., a fabricator, $3\frac{3}{8}$ inches in length and somewhat triangular in section, and two flake-knives with slight secondary working. Found at Tormore. Presented by Peter McKenzie, 1908.

Pottery.

Whorl of burnt clay, $1\frac{1}{4}$ inch in diameter, rudely made, of irregular form, from Gleann Righ. Presented by James Todd, 1890. (BE 237.)

Portion of rim of large cinerary urn, ornamented with projecting parallel bars, rudely sloping lines, and zig-zag

ornamentation, from Glencloy. Presented by Dr. Jamieson, 1863. (EA 79.)

Urn, $5\frac{1}{4}$ by $5\frac{1}{2}$ inches, of food-vessel type, found near Whitehouse, Lamplash. Presented by the Duchess of Hamilton, 1863. (EE 26.)

Urn, 6 by $6\frac{5}{8}$ inches, ornamented with impressed zig-zag lines, imperfect, from Shisken. Presented by James Todd, 1887. (EE 58.)

Urn, $7\frac{1}{2}$ by 7 inches, and four flint flakes, from Circle No. 2; urn, 5 by 7 inches, flint flakes, and portion of bronze, from Circle No. 4; flint flakes, portions of teeth, unburnt bones, etc., from the Stone Circles, Tormore. Presented by the Duke of Hamilton, 1863. (EP 7-21.)

Urn of cinerary type, 12 by 11 inches, with scrapers and worked implements of flint, which appear to have been burnt, from Balmichael. Presented by the Duchess of Hamilton, 1863. (EQ 5-14.)

Portion of a round-bottomed urn of dark-coloured paste, without ornamentation, but showing part of the lip, and having two flat projecting ears like those of a quaich underneath the rim, on the outside circumference. Found at Torlin. Presented by Professor T. H. Bryce, 1902.

Portion of a round-bottomed urn of dark-coloured paste, without decoration, showing a slightly everted lip, and having on the outside circumference underneath the rim a flat projecting ear like that of a quaich. It measures $4\frac{1}{4}$ inches in height, and if complete would have been about 5 inches in diameter. Found at Clachaig. Presented by Professor Bryce, 1902.

Urn of reddish paste, round-bottomed, the upper part contracting upwards like a sloping cover from the shoulder to the neck, from which the brim rises perpendicularly. The total height of the vessel is $3\frac{1}{2}$ inches, the greatest width at

the shoulder slightly exceeds 6 inches, and the diameter of the mouth is $3\frac{7}{8}$ inches. It is ornamented on the sloping upper part, and in a band below the shoulder, with parallel lines placed alternately horizontal and vertical groups of four or five each, the lines being formed by short dashes, as if with the end of a twig or some pointed instrument. Found at Clachaig. Presented by Professor T. H. Bryce, 1902.

Urn of dark reddish paste, flat-bottomed, and of the food-vessel type, 5 inches in height and 6 inches in diameter at the mouth, the rim slightly bevelled. Underneath the brim, and at about equal distances between it and the shoulder, are two slight horizontal mouldings, the spaces between being ornamented with bands of a chevrony pattern, the lower part sloping regularly from the shoulder to the foot, ornamented with short markings, as from the teeth of a comb, disposed in oblique lines. Found at Clachaig. Presented by Professor T. H. Bryce, 1902.

Urn of coarse black paste, round-bottomed, 4 inches in height and 5 inches in diameter at the mouth, undecorated, but having a very slight shoulder about $\frac{3}{4}$ inch below the rim, with two flat projecting ears resembling those of a quaich. Found at Slidderie. Presented by Professor T. H. Bryce, 1902.

Urn of reddish paste, flat-bottomed, and of food-vessel type, 5 inches in height and 5 inches in diameter across the mouth, the lip bevelled and slightly everted, a slight moulding at the shoulder and another halfway between the shoulder and the rim, both emphasised by narrow bands of angular markings impressed on the upper side of the one and the under side of the other, with their points alternating in opposite directions, and the whole surface from rim to base covered with a chevrony ornamentation. The bottom of the urn presents the very unusual features of being formed with a

slightly raised border, and the circular space within it is ornamented with a tri-brach of three rows of impressions of an angular form, with the angles pointing away from the common centre. Found at Brownhead. Presented by Professor T. H. Bryce, 1902.

Objects of Metal.

Leaf-shaped spear-head of bronze, $3\frac{1}{6}$ inches long, with remains of loops, and with rivet-hole, from Claoinéud. Presented by Charles Browning, 1889. (DG 54.)

Four penannular armlets, with slightly expanded extremities (weighing 484, 394, 355, and 210 grains), found at Ormidale, Brodick. Treasure Trove, 1864. (FE 10-13.)

Bronze dagger-blade, $9\frac{1}{4}$ inches in length by 3 inches broad at the base, tapering with almost straight edges to a point. Two rivets remain on the base of the blade, and behind and between them are the indications of two other rivet-holes. The blade is flat, but is traversed longitudinally by three convex mouldings, one forming a midrib, the other two running from the exterior edge of each of the two rivets at the base, and parallel to the edges of the blade, till they die out towards the point.

Two portions of a gold fillet, apparently part of the mounting of the dagger. They are of thin gold, ornamented with parallel flutings. Found at Blackwaterfoot. Presented by Thomas Wallace, 1902.

Objects of Wood.

Wooden mallet, found in Tormore Moss. Presented by Peter McKenzie, 1908.

Human Crania.

Cranium, presented by the Duke of Hamilton. (ET 54.)



STONE AXE.

Kelvingrove Museum, Glasgow.

[From a drawing by Mr. J. MacNaught Campbell.]

CORPORATION OF GLASGOW, KELVINGROVE
MUSEUM.

PLATE LIII.

Stone axe, basalt, $6\frac{1}{8}$ inches in length ; breadth of cutting face, $2\frac{1}{2}$ inches ; thickness, $1\frac{5}{8}$ inch. Found at West Bennan.

Cinerary urn, described on page 129, Plate XXI. (A).

Cinerary urn, described on page 130, Plate XXI. (B).

(From particulars furnished by Mr. J. MacNaught Campbell.)

PAISLEY FREE LIBRARY AND MUSEUM.

Stone hammer, length, 7 inches ; greatest width, $2\frac{1}{4}$ inches ; thickness, $1\frac{1}{2}$ inch ; bore, 1 inch in diameter ; distance from bore to point of hammer, $3\frac{1}{2}$ inches. Found near King's Cave, 5 feet below surface of peat.

(From particulars furnished by Mr. James Eggleton.)

THE CLAIM OF THE NATIONAL MUSEUM OF ANTIQUITIES OF SCOTLAND

“In pleading with the Scottish public for the augmentation and enrichment of our Museum by donations of all kinds, however slight and trivial they may seem to the Donors, we plead for what is not any longer the property of this Society, but what is now the property of the Nation. The Museum has been gifted over by the Society of Antiquaries to the Government. It now belongs, not to us, but to Scotland ; and we unhesitatingly call upon every true-hearted Scotsman to contribute, whenever it is in his power, to the extension of the Museum, as the best record and collection of the ancient Archæological and Historical Memorials of our Native Land.

“ We call for such a central ingathering and repository of Scottish Antiquities for another reason. Single specimens and examples of archæological relics are in the hands of a private individual generally nought but mere matters of idle curiosity and wild conjecture ; while all of them become of use, and sometimes of great moment, when placed in a public collection beside their fellows. Like stray single words or letters that have dropped out of the Book of Time, they themselves individually reveal nothing, but when placed alongside of other words and letters from the same book, they gradually form—under the fingers of the archæologist—into lines and sentences which reveal secret and stirring legends of the workings of the human mind and human hand in ages of which we have no other existing Memorials.”—*Sir James Y. Simpson's Anniversary Address to the Society of Antiquaries of Scotland*, 1861.

[A considerable number of articles of antiquarian interest have been found in Arran, in recent years, and lost through thoughtlessness ; this fact coming to our knowledge during the preparation of this volume, we think it right to reprint here the Claim of the National Museum of Antiquities.—ED.]

ARRAN PLACE-NAMES

Amended Form

Achadh a' Mhuilinn
Achaleffen
Achamòr
Achancairn
Achancar
Achangallon
Achanhew
Achariach
Aird Bheinn
Allt na h-Àiridh
Allt an t-Sluic
Àr nan Rón

Baile Meadhonach Glen
Balgown Hill
Balmichael
Bànleacainn
Beinn Bhàrran
Birican
Boglaich
Bealach an Fheadain

Calumcille
Caisteal Fhinn
Clachaig
Clachan Glen
Claoineud
Cleitean
Cnocan a' Choilich
Cnoc Sìth Bheinne

Ordnance Map

Achavoulin
Auchaleffen
Auchmore
Auchencairn
Auchencar
Auchagallon
Auchenhew
Auchareoch
Ard Bheinn
Allt na h-Airidhe
Allt ant Sluice
Aird nan Ron

Ballymeanochglen
Cnoc Ballygown
Ballymichael
Balliekin
Beinn Bharrain
Burican
Boquille
An Cumhann

Columbkille
Caisteal an Fhinn
Clauchog
Clauchan Glen
Cloined
Cleiteadh
Knocken Kelly
Cnoc Shieveina

<i>Amended Form</i>	<i>Ordnance Map</i>
Coille Mhór	Coillemore
Coire an Lochain	Coirein Lochain
Coirechaim	Corrichiam
Corriegills	Corrygills
Crò	Craw
Doire-nan-each	Dereneneach
Dubhgharadh	Dougarie
Earrann Beag	Urin Beg
Gleann Rìgh	Glenrie
Gleneasdale	Glenashdale
Glenlaogh	Glenloig
Glen Sherraig	Glen Shurig
Glen Skaftigil	Glen Scaftigill
Goirtein Alasdair	Gortanallister
Kilmorie	Kilmory
Lag	Lagg
Lagan	Laggan
Lag a' Bheithe	Lag a' Bheith
Largie Beag	Largybeg
Largie Meadhonach	Largymeanoch
Largie Mór	Largymore
Lean a' Chreamha	Lean a' Chreamh
Leanamhór	Lennymore
Loch an Deabhaidh	Loch na Davie
Loch na h-Iubhraidh	Urie Loch
Loch Tana	Loch Tanna
Maodal Uaine	Madadh Lounie
Marg na h-Eaglais	Margnaeglish
Moinechoill	Monyquil
Peighinn	Pien
Penriach	Penrioch
Port na Feannaige	Port na Feannaiche

<i>Amended Form</i>	<i>Ordnance Map</i>
Port na Lice	Port na Leacach
Sgrìbhinn	Scrivan
Shennachie	Shannochie
Sithean	Sheeans
Slidderie	Slidderie
Struithe Rocks	Struey Rocks
Shedag	Shedog
Shisken	Shiskine
Taobh Bheinn	Tighvein
Tarnacreige	Tarnacraig
Ton-ri-gaoith	Thundergay
Torlin	Torrylin
Tòrr a' Mhaolainn	Torr Mhaoile
Tòrr nan Uan	Torr nan Uain
Tòrr na Braoileig	Torr na Baoileig
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MAP TO ILLUSTRATE
THE ANTIQUITIES ON
THE ISLAND OF ARRAN

Scale of Miles
0 1 2 3

○ PREHISTORIC PERIOD
□ PROTOHISTORIC „
× HISTORIC „

Red line through map shews division of Parishes



