

I.

ON THE AGE OF THE BURGHS OR "BROCHS" AND SOME OTHER PRE-HISTORIC REMAINS OF ORKNEY AND CAITHNESS. BY SAMUEL LAING, Esq., M.P., F.S.A. Scot.

Dr Daniel Wilson, in his "Prehistoric Annals of Scotland," observes of the Burgs, or so-called Pictish Round Towers: "These remarkable buildings can hardly be viewed with too great interest by the Scottish archaeologist. They are the earliest native architectural remains which we possess, the cromlechs and stone circles being at best only rudimentary and symbolic or representative forms of architecture. They constitute, therefore, a most important element in our national history, supplying very definite facts relating to an ancient era of which we have received no other information in any degree so trustworthy."

The counties of Orkney and Caithness afford the best chance of obtaining trustworthy data respecting these structures, as they have been very numerous in these districts, and the progress of agriculture has not yet completely obliterated either the burgs themselves, or the numerous relics of the early people by whom they were inhabited.

In Orkney alone the remains of upwards of forty-five burgs are known, and doubtless many still remain undiscovered, as several have been found during the operations of trenching and deep ploughing where their existence had been previously unsuspected.

During a short residence two years ago at Keiss Castle, in Caithness, I had an opportunity of making some explorations which throw considerable light on the question of the comparative antiquity of this class of remains; and during the past autumn a visit to some of the principal burgs in the mainland of Orkney, in the company of Mr George Petrie, who is well known as the best authority on the antiquities of his native county, gave me much additional information.

The Keiss discoveries are minutely described and figured in a little book on "the Prehistoric Remains of Caithness"* which I published last year, mainly from the opportunity which it afforded of conveying to the scientific world the valuable remarks of Professor Huxley on the human skulls and skeletons, some of very peculiar type, which were found in the kists, with extremely rude weapons and implements of the native sandstone. As the originals of this collection are now deposited in the Museum of the Society of Antiquaries of Scotland, and my recent visit to Orkney has enabled me to add several objects of considerable interest to this national collection, and to record some further facts bearing on the same question, I propose in the present paper to state shortly what appears to be most material.

As regards the Keiss collection, it may suffice to say shortly, that the two most important points established by it were these :—

I. That a ruined burg which had been grassed over and converted into a green mound, gave clear proof of successive occupation down to a comparatively recent period by the superposition of pavements at different levels, the addition of walls of different structure, and, in one instance, by the conversion of a massive doorway into a rude fire-place and chimney. That the rare instances in which objects of bronze or iron were found came, as did all the specimens of finer pottery, from the upper level ; while the great mass of relics, including all those of the lower levels, consisted of articles of stone and bone of extreme rudeness, and of excessively coarse hand-made pottery, the whole bearing a striking resemblance to the type of the Danish Kjökkonmöddings, and affording a strong contrast to the polished and highly finished celts, hammers, arrow-heads, and other weapons and implements of stone (often of flint and other stone foreign to the district), which have been often found in these northern counties. (See Plates V.* to X.)

The food of these early burg-dwellers pointed to the same conclusion of extreme rudeness, having consisted mainly of limpets and periwinkles from the adjacent beach ; or the bones, generally split to obtain the marrow, of

* Prehistoric Remains of Caithness, by Samuel Laing, Esq., M.P., F.G.S.; with Notes on the Human Remains, by Thomas H. Huxley, Esq., F.R.S., Professor of Natural History, Royal School of Mines. Williams and Norgate, London and Edinburgh, 1866.

a fauna consisting mainly of red deer (sometimes of gigantic size), *Bos longifrons*, horse, goat, hog, dog, fox, whale or grampus, *Alca impennis*, lesser auk, cormorant, shag and solan goose, with, singularly rare, fish bones.

Similar results were obtained from the exploration of other shell-mounds or middens in the same immediate neighbourhood, not proved to be connected with burgs, but evidently of the same period, for full details of which I must refer to my book, and to the collection in the Museum of the Society.

II. A series of kists on the shore at Keiss, about half a mile from the burg and other mounds, were clearly identified by their contents as of the same period. They consisted of large unhewn flag-stones set on edge, forming extended kists about 5 feet 10 inches long; roofed but not paved; built on the natural surface of the old beach terrace, with a small mound of stones or sand over them (in one instance, supposed to be the grave of a chief, with a regular cairn enclosed by a circular retaining wall 18 feet in diameter); and the whole covered over to the depth of 5 or 6 feet by what may have been either wholly blown sand, or partly an artificial mound and partly blown sand.

Eight of these kists, opened by me in 1864, contained portions of extended and unburnt skeletons, comprising six skulls, nearly complete, which are minutely described by Professor Huxley in the book referred to, and are now deposited in the Society's Museum. Several of the skulls and pelvis are of very unusual type, considered by Professor Huxley to present some remarkable analogies with that of the Australian savages; and one skull in particular is instanced as one of the most degraded European skulls hitherto discovered.

In several instances, limpets and periwinkles had been buried with the dead in these kists; and in the only two kists the skeletons in which were certainly male, stone weapons and implements were found of the same extremely rude type as the rudest specimens from the middens.

Of these, one,—an oval rolled sandstone from the beach, showing evident signs at one end of having been used as a hammer or pounder, was found with the skeleton No. 7 of Huxley's Memoir (Plate VII. No. 6); and fifteen, comprising a sort of rude battle-axe, fig. 3; spear-head, fig. 2; arrow-head, fig. 6; and several knives or scrapers, &c., figs. 1 to 11, Plate VI., came from the kist No. 8, which was surmounted by the circular

cairn, and conjectured to be that of the chief. In addition, five stone articles, viz., three chipped circular plates, and two blocks with circular holes not pierced through, were found among the stones of the cairn immediately above the kist.

Since I left, two other kists have been opened in the same locality from which stone weapons were obtained—one by Mr Anderson of Wick, containing two spear-heads (see Plate VII. Nos. 1, 2); two arrow-heads, (Plate VII. Nos. 3, 4); a stone hammer abraded at both ends, Plate VII. No. 10); and a piece of chipped quartz apparently used as a chisel with a deer's horn handle (Plate VII. Nos. 7, 8), which are figured in my book at pp. 18 and 19, and the originals are at the Anthropological Society; the other by Messrs Mitchell and Gill, which contained three similar stone weapons, now in the possession of Professor Ogston of Aberdeen.

In addition, six stone weapons, viz., two spear-heads, a sandstone knife, quartz chisel, and hammer, of precisely the same type, and figured in my book at pp. 31 and 32, were found in one of a number of similar kists at the foot of the great mounds, described by me as the Birkle Hills, about a mile from the other kists.

We have thus a series of five kists from which thirty-one stone weapons or implements have been obtained (exclusive of five others from the cairn outside the kists), all of the native stone of the district, and of the same type of the rudest stone period.

There can be no doubt of the facts, for in two instances I found the weapons myself *in situ* in kists which had never been previously opened or disturbed, and in three other instances the weapons were found under precisely similar circumstances by independent observers.

During the present autumn I had an opportunity of spending two days near Keiss, and, by the kind permission of his Grace the Duke of Portland, I was enabled to dig some more trenches at the burial mound at Keiss. The Duke's factor, Mr Gray, was present during the excavations, and gave me every assistance.

We only succeeded in finding two skeletons, one of which was almost entirely decomposed, having been buried in the sand without any kist, and the other was considerably decayed, and the skull had been crushed by the falling of one of the covering stones. The kist in which the skeleton lay was of the same construction as those described in my book,

but shallower and slighter, and the foot stone was wanting. No weapons were found in it, but several limpet shells, some of which were so intermixed with the bones of the hand as to make it probable that the body had been interred with a handful of limpets for food. A small portion of the skull of a boar, very much decayed, was found in the sand about one foot above this kist.

From the number of trenches dug without finding kists, it is evident that they are not so numerous as I had been led to infer from the regularity with which the first nine or ten kists had been found. In other respects, a minute examination of the mound confirms the conclusions previously drawn. The kists are all found at the same level, viz., that of the natural soil or raised beach, which forms the terrace of the present coast line at about 6 feet above high-water mark. The interment seems to have taken place on this beach before any sand had accumulated on it. Cairns of stones had been piled over some of the kists, and on others it seems as if a grave mound of sand had been piled up, and some large stones placed on it. The graves had all been disposed in a row parallel with the shore, and the whole had been subsequently covered up by drift sand, which towards the top alternated with thin layers of vegetable soil or peat mould.

The mound was evidently partly artificial, consisting of a row of kists surmounted by cairns or small heaps of sand and stones, and partly natural, consisting of blown sand and surface soil. The kists all lay nearly north and south, and the heads of the skeletons were generally to the south, though sometimes this position was reversed.

At the site of the cemetery near Stromness, Orkney, I obtained some evidence illustrating the discovery of the stone kists at Keiss. At this spot, which is called the "Monker House," and has been the site of an ancient chapel and burying-ground, there has been a burg. Mr Petrie and I traced a portion of the circular wall, a section of which is shown in the low cliff, a few yards west of the present cemetery. About half of it has been carried away by the wasting of the coast line, and the old chapel and cemetery have been placed on the green mound formed by the ruins of the burg. In digging graves in the present cemetery quantities of bones and teeth are turned up from the ancient midden of the burg, and I obtained a specimen of a rude hand-comb. On the out-

skirts of this midden, at a depth of 3 or 4 feet below the surface, the grave-diggers occasionally came upon large flag-stones, which proved to be the roofing stones of kists containing extended skeletons, similar to those found at Keiss. I had no opportunity of examining one of these kists, as they could not be got at without disturbing recent graves; but a very respectable man, who has charge of the cemetery and digs the graves, and whose father had been grave-digger before him, gave me a minute account, which I had no reason to doubt, as he had no motive to mislead and no idea of what was expected from him, and his account was fully confirmed by another workman who had assisted him.

They describe the kists as from 5 feet 6 inches to 6 feet in length, formed of a head and foot stone, and generally three stones on each side, consisting of rude unhewn sandstone flags set on edge, roofed over with similar flags, but never paved, and containing extended skeletons, of which they had merely noticed that the bones seemed very old and the skulls were very thick. They had never heard of anything being found in these kists, but no search had ever been made.

I am not without hope that on some future occasion some of the kists may be minutely examined, and skulls obtained from them. In the meantime they confirm the evidence of the Keiss kists, that this mode of burial was resorted to, at any rate occasionally, by the earliest inhabitants of the burgs. The level of the Stromness kists, relatively both to the foundation of the burg, to the terrace of the coast line, and to the present surface, is the same as that of the Keiss kists, and distinctly below that of the old chapel and cemetery. We opened a kist or vault, not of flags set on edge, but built of rudely squared stones, which had apparently belonged to the mediæval cemetery, in the green mound some feet directly above the remains of the circular wall. This did not contain any skeleton, but it afforded another clear proof of secondary interment on the ruined site of an ancient burg. This stone grave must have stood at least 6 feet higher than the level of the stone kists similar to those of Keiss, which I conclude with great confidence to be those of the primitive inhabitants, and coeval with the burg.

Doubts have been expressed whether the weapons from the kists at Keiss were really artificial, but it would be a waste of words to refute such assertions, as an inspection of the originals cannot fail to satisfy

any competent observer that, however rude, they have all been fabricated or selected by man, and were buried with the dead as articles which had been used in life, or were intended for use in another world. If any doubt could have existed as to the artificial character of some of the rudest specimens from the chief's kist, it must disappear when exact parallels of the same type are produced from other localities, such as the underground house at Skail to be presently mentioned, and when the whole series of thirty-one articles from four different kists in the same locality is viewed together, forming a progression from the rudest flakes or scrapers, and oval beach stones whose use as hammers is only attested by the abrasion at their ends, up to the weapons in Professor Ogston's collection, which are not much inferior to the spear and arrow-heads of existing tribes of Esquimaux. In order to assist members in forming an opinion of the whole collection as a series, I have arranged on the table the whole of the originals in the Society's Museum, together with the woodcuts of those taken from the originals at the Anthropological Society, and drawings of the natural size taken by myself from those in the possession of Professor Ogston.

The discovery of these rude stone weapons in kists tended greatly to confirm the inference that the burgs are of remote date. When rude weapons and implements are found in middens and refuse heaps, it may be contended that, if finer articles are wanting, the reason is, not that they did not exist, but that they were more carefully preserved. But when weapons, bearing marks of use, are buried with the dead, in graves upon which a good deal of labour has been expended, it can scarcely be doubted that they represent the real type of the age to which they belong, and give a standard of its progress in civilisation.

Hence the inference is strong that the original inhabitants of the burg at Keiss must have been rude savages, anterior to the comparatively civilised people of the bronze period, who burned their dead, and buried the ashes in sepulchral urns, under the tumuli still so numerous in the same district.

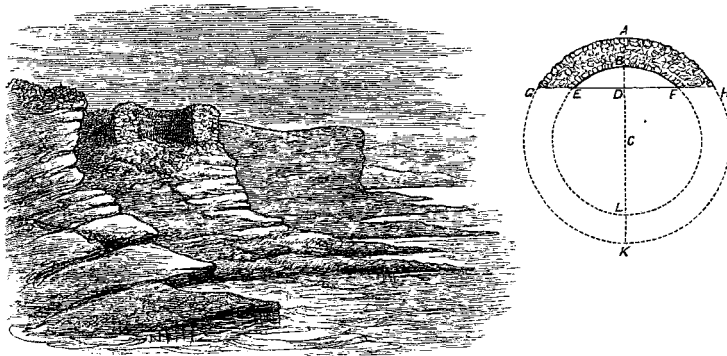
It would be unsafe, however, to draw any positive conclusion from a single instance, and accordingly I availed myself of the opportunity of a short visit to Orkney during the past autumn to obtain some further data respecting the age of the burgs, which I succeeded in doing mainly

owing to the valuable assistance kindly given me by Mr George Petrie, who accompanied me on my tour, and can answer for the correctness of the facts stated.

First, as to the age of the burgs.

I will mention two instances which seem to me conclusive of great antiquity.

At Breckness, near Stromness, part of a burg remains in the face of the cliff, the rest having been carried away by the action of the sea. The curvature of the remaining wall shows that this burg has been originally a circle of 44 feet inner diameter, and the thickness of the wall is 12 feet, so that the outer diameter has been 68 feet. Of this about 15 feet only remain, and upwards of 50 feet have been carried away. Now, the burg stands on solid sandstone rock, and it is apparent that before 50 feet of



Ruined Burg at Breckness, and Ground Plan.

the rock were wasted away here, the point of Breckness must have extended at least 50 feet farther out, and probably more. The *minimum* time, therefore, that can have elapsed since the building of this burg must be sufficient to allow for the wasting away of 50 feet of a shore line consisting of solid sandstone cliffs of the height of 30 or 40 feet, in a locality where no perceptible change has taken place in the memory of the existing generation. Those who know the slow rate at which a solid rocky coast is wasted away, must feel that such facts as are exhibited by

the section of the burg and cliff at Breckness are altogether incompatible with any theory that assigns the origin of burgs to a recent period.

This instance is not a solitary one, for in many other cases, and even in sheltered situations and on inland lakes, a large part of the circle of Orcadian burgs has been carried away by the wasting of the coast line, but the section exposed at Breckness is so striking that it is unnecessary to refer to others.

I subjoin a sketch made on the spot, showing the actual appearance of this burg, and a ground plan showing how much of it has disappeared. (See the drawing, p. 63.)

The burg of Okstro, near Birsay, affords another conclusive proof of great antiquity.

A few years ago, Mr Leask, the tenant of Boardhouse, in deep ploughing and levelling the surface of what seemed to be a natural hillock, came upon graves. Mr Petrie fortunately had an opportunity of examining these graves while they were entire, and found them to be ordinary stone kists of the bronze period, containing urns filled with ashes and burnt bones, and in one or two instances bronze ornaments were found in the kists. Below the kists, which were about 3 feet deep in the soil of the mound, Mr Petrie came upon traces of solid masonry, and upon clearing away the mass of stones and rubbish to the foundation, the complete circular wall of the burg was disclosed as it is now seen. About 6 feet in height of this wall is standing; the diameter has been 60 feet, and the structure is very solid and massive. Here, then, is a burg which, to judge from the analogy of the burg of Mousa and other more perfect specimens of the same class, must have originally been a circular tower some 60 feet high, and which must have undergone the following changes since its original foundation:—

1st, It must have been completely ruined and thrown down, so that only 6 feet of the original wall remained standing. 2d, This mass of ruin must have remained mouldering in the air long enough to become covered with at least three feet of vegetable soil, and to be converted into such a green mound as concealed the remains of the burg at Keiss and most of the Orkney burgs of the present day. 3d, In this green mound pagans of the bronze period must have buried sepulchral urns containing the ashes of their dead.

The first mentioned instance of the burg of Breckness possesses peculiar value as a gauge of the true age of these remains. There is no question here of the duration of stone and bronze periods, and whether they have or have not coincided with similar periods elsewhere, but the evidence is conclusive that the age of the burg is the period required for the wasting away of between 50 and 60 feet of a coast line of hard sandstone cliff. If we knew the rate of retreat of such a line of rocky coast, we could fix the *minimum* limit of the age of the burg. Unfortunately, there are no data from which I could venture to assign any precise rate of waste of such a cliff as that of Breckness, but there can be no doubt it is extremely slow. Many castles exist, perched on precipitous rocks overhanging the sea, where we can prove from historical records that no very sensible change has taken place for centuries.

A careful examination of the ancient foundations of the outer sea walls of such castles as Dunottar, or still better, of those on the Caithness coast on the margin of hard sandstone cliffs of the same geological formation as at Breckness, such as Dunbeath, Girnigo, Ackergill, and Buchallie, would possibly give some clue to the extent to which the cliff has receded in seven or eight centuries. The last-named castle, then named Lambaburg, is famous for the exploit of Sweyn, the great Orkney sea rover, who was afterwards killed at Dublin, who being besieged there by the Earl of Caithness, let himself down by a rope over the precipitous face of the rock, and swam in his armour to the shore without being perceived. This occurred about the year 1150, and the ruins remain as Torfæus described the castle 700 years ago, built on a precipice above the sea.

I may add that the burg at Breckness is not exposed to the full force of the Atlantic, being partly sheltered from the west by the point of Breckness, and that the rock is a very hard and homogeneous sandstone of the Devonian formation.

So much for the antiquity of the burgs. As regards their successive occupation, Mr Petrie is of opinion that there is scarcely one in Orkney which does not afford clear proofs of subsequent additions by later inhabitants. I may mention one in particular, near the manse at Harray, which shows almost the same adaptation of the interior as I described at Keiss, by the erection of loose rubbly walls, clearly distinguishable from the ancient massive masonry, forming chambers and divisions inconsistent

with the original structure, and also by the superposition of a second pavement about 18 inches above the first. In fact, we know from history that the burgs were occasionally occupied by the Scandinavians, as Torfæus mentions that Erling having carried away the mother of Earl Harold in the twelfth century, seized the strong burg of Mousa in Shetland, in which he was ineffectually besieged by Harold.

It is clear, however, that the Scandinavians did not build any of the burgs, for the following reasons:—

1. We have the authority of the best Danish antiquaries, such as Münch and Worsæ, for the non-existence of any such structures in Scandinavia itself.

2. Torfæus records the building of several castles or strong-houses by the Scandinavians in Orkney, such as those of Kolbein in the island of Weir, of Sweyn in Gairsay, &c. From his description of these, and from the remains of some of them which exist to the present day, they were of a totally different character from the burgs, with square rooms, large banqueting halls, and altogether more like the mediæval castles of the rest of Scotland.

3. The local names given by the Scandinavians imply the existence of the burgs as remarkable objects when these names were given. Thus we have Burrey, Burness, Burwick, signifying the island, point, or bay of the burg, and numerous other instances. The evidence even goes further, and proves that many of the burgs had been already ruined and converted into green mounds, or "howes," before the Scandinavian names were given. Thus we have How, Maeshow, Ingashow, Dingshow, &c. The name of Okstro already mentioned, where the sepulchral urns were found above the ruins of a burg, is doubtless an abbreviation of Oksterhow.

We have, therefore, historical evidence, independently of that afforded by an examination of the burgs and their contents, for the two facts, of great antiquity of the original structures, and of successive occupation.

This makes it very difficult to decide on the age of the burgs, from the nature of the relics found in connection with them, as it is evident that articles of bronze and iron from subsequent dwellings or graves must often be so intermixed with the genuine relics of the original occupants, as to be certainly confounded with them by ordinary observers, and not

always distinguishable by the most accurate investigation. However, having now seen a large number of the objects collected from the Orkney burghs, I am enabled to give a general account of them, and to compare them with those which I collected myself at the burgh of Keiss.

1. With a few exceptions, the whole of the articles consist of implements of stone, bone, and deer's horn, and of coarse hand-made pottery of the same rude type as those from Keiss, which are deposited in the Museum, and described and figured in my book on the "Prehistoric Remains of Caithness." Oval beach stones used as hammers; sandstone flakes used as knives, scrapers, and chisels; stone mortars, querns, cups, and lamps; bone pins or bodkins, awls, and chisels; handles of bone or deer's horn; whorls or large beads of stone, bone, and baked clay, constitute nine-tenths of the remains. In fact, the description which I gave of the remains from the Harbour Mound at Keiss only requires to be modified in the following respect:—Rude querns, of which none were found at Keiss, are so common as to leave little doubt that they must be relics of the original occupants, who must, therefore, have been acquainted with grain; a form of bone comb bearing a rude resemblance to a human hand, which was not found at Keiss, is so commonly found among the remains of burghs in Orkney as to constitute one of the typical forms; cups and implements of whale-bone, are common in Orkney, which is easily explained by the frequent stranding of whales on these islands.

2. The fauna and food of the inhabitants seem to have been generally the same as those at Keiss, of which a full collection is deposited in the Museum. There is no equally complete collection of the fauna of the Orkney burghs, but I have recognised the following:—

Red Deer—Common, and often of large size.

Ox—Always the short-horned species, apparently *Bos longifrons*.

Horse—Bearing marks of fire, and evidently used as food.

Pig—Apparently the wild boar, from the large size of some of the tusks.

Goat or Sheep—In all cases where I have seen the horns, they have been those of goats.

Dog—Very rare.

Fox—I have seen one jaw only.

Whale—Common.

Fish—I have seen a few vertebrae of large cod, but remains of fish are singularly scarce.

Birds—I have seen bones of the wild swan, solan goose, curlew, and, I believe, in some instances, of the *Alca impennis*, or great auk, which was discovered by Professor Owen among the remains from Keiss.

Shell Fish—Limpets, periwinkles, mussels, cockles, and the ordinary shell fish from the adjacent shore, are common, and have evidently been the staple food.

3. The general absence of certain remains, which might have been looked for, constitutes a peculiar feature common to the burgs of Keiss and Orkney. Celts are either totally wanting or extremely rare. Weapons, such as lance or arrow heads, are also singularly scarce. I have seen no instance from any burg in Orkney, and very rarely from any of the ancient graves. Fish-hooks, harpoons, and any sort of fishing or boating tackle, seem also to be entirely wanting. Foreign stone seems to have been unknown, or extremely scarce. All implements are made of the native sandstone, or such stones as could be obtained on the beach, with a very few exceptions of celts made of serpentine and other rocks not known to exist nearer than in Shetland. These are of finer workmanship, and may be of later date than the original occupation. I have seen no trace of any ornament in the pottery, but a zig-zag pattern is occasionally, although rarely, traced on handles and combs of bone. (See the accompanying sketch of a bone-handle found at the burg of Harray, p. 70, fig. 1.)

4. The finer forms of polished stone, such as hammers, axes, chisels, &c., with well-defined forms, holes or sockets for the insertion of handles, grooves for attachment, &c., seem to be entirely wanting, and the transition is abrupt from the rude implements of stone and bone to the few specimens of bronze and iron which are occasionally found among the upper debris. These consist generally of brooches, pins, armlets, and rings, and are commonly tasteful in form and ornament, and have no appearance of great age or rudeness. They are generally of small size, but otherwise fair specimens of the ordinary bronze period. The few fragments of iron which have been found are, as far as I have heard,

always associated with the upper debris, or in situations where they may be reasonably presumed to be of later origin. In one unique instance, at the burg of Okstro, some fragments were found of a vase of dark red Samian ware. This doubtless came from one of the graves with sepulchral urns of the bronze period, already described as made above the ruins of the old burg. It had evidently been considered a valuable object, as there were several holes in it which had been drilled for the purpose of mending a fracture.

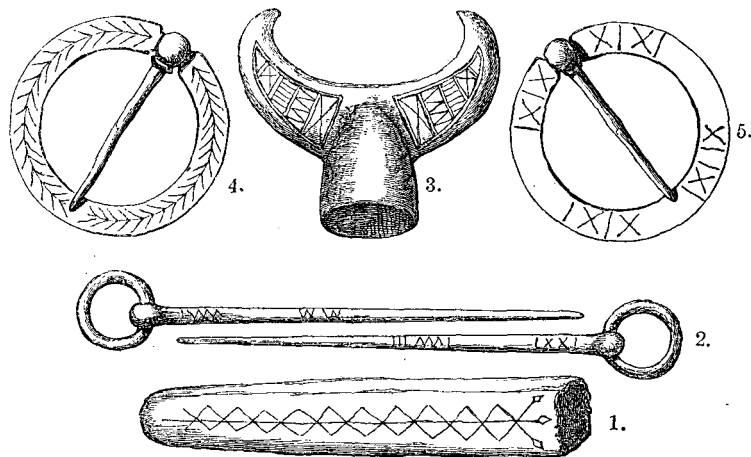
The finer specimens of stone, such as beautifully polished celts, and flint arrow-heads chipped with wonderful precision, and known as elf-bolts, are not wanting in Orkney, and I have seen several specimens; but as far as I can learn, they have always been found on the surface of the soil, or at a very small depth below it.

As regards the bronze articles, one of the most interesting questions connected with the burgs is to determine whether they are in all cases of secondary introduction, or in some, at least, relics of the original inhabitants, and if so, whether of native manufacture or imported. As far as my own limited experience goes, they have been found in situations which confirm the inference of their being derived from secondary occupations; but I have heard of one or two instances which, if correctly reported, would lead to the opposite conclusion. It is no doubt strange that, if the original occupants were sufficiently civilised to use bronze ornaments, all their other relics should be of the rudest forms of native stone and bone; but on the other hand, it is singular that some rare fragments of bronze are almost invariably discovered in the debris of such burgs as have been excavated, and it would seem to be stretching the theory of secondary occupation too far to assume it in every instance. The question, therefore, must remain open to be determined by further research, though I think it may be safely assumed that, if the original burg-dwellers were really acquainted with bronze, it must have been in rare specimens derived from occasional intercourse with more civilised races to the south, and not the product of any home manufacture or regular commerce.

Something may be gathered from a careful examination of the patterns or ornaments of the bronze articles found in burgs, and comparison with those of the well-known bronze periods in other countries,

as to which I am enabled to point out one very remarkable coincidence.

Subjoined is the figure of a bronze pin found in clearing out the burg at Okstro, now in the possession of Mr Leask of Boardhouse. (See the annexed woodcut, fig. 2.)



Engraved Bone Handle (1), Bronze Pins (2), Lake Crescent (3), and
Bronze Brooches (4 and 5).

The figure of one of the so-called "Lake Crescents," from the Swiss pile villages of the bronze period, given by Desor "Les Palafittes ou constructions lacustres," p. 66, from a figure by Keller on the third report, "Mitthulungen der antiquarien gesellschaft," shows precisely the same pattern (woodcut, fig. 3). A bronze brooch from another Orcadian burg close to the manse of Harray, in the possession of the Rev. Dr Traill, shows nearly the same pattern, but with the zig-zag modified into a fern leaf or herring bone, fig. 4.

The coincidence of the pattern is too remarkable to be accidental. Either the *ww* or the *x* might be the result of accident, but the alternation of the two combined, with enclosing lines, must be designed, and represent the same class of artistic ideas or religious symbols.

As regards the "Lake Crescents," the general opinion is, that they are religious symbols or talismans; and the adoption of the crescent as a symbol of the moon, or moon-goddess, is so obvious that it has been used by all nations who worshipped the powers of nature. Wherever the influence of Phœnician commerce penetrated either directly or indirectly, some ideas must have been diffused of a sun or Bel worship, symbolised by the circle, and that of the moon, or female principle, known as the Goddess Astarte, and symbolised by the crescent. In fact, we know that such ideas had penetrated into Scotland and found expression in many of the symbols engraved in rocks and standing stones as well as in popular rites and superstitions. The only thing like a conjecture that I can offer as to the possible meaning of this pattern so curiously repeated in an island of the Orkneys, and a pile dwelling of the Canton of Zurich, is that the WW is the well-known Egyptian hieroglyphic for water; and that the female principle in creation, known as the Moon, Astarte, or Aphrodite, was in Phœnician mythology connected with the ocean, so that the zig-zag might have some possible reference to Venus springing from the sea, which would make it a very appropriate pattern, either for a talisman in the form of the moon, or for articles like the brooch and pin of female attire. This however is, of course, mere vague conjecture, and thrown out simply to indicate the path by which, as facts are multiplied, it may be possible to establish coincidences between the bronze period of Britain and that of other countries, and even to trace back to a common origin in the East the influences which gave rise to a certain class of symbols and ornaments. While upon this question of symbols, it is worth remarking that in one or two instances, combs, with finely-cut teeth on both sides, exactly resembling the comb which with its case is a well-known symbol in the Scottish sculptured stones, have been found in Orkney, but they are always either wholly or partly of bronze, while the common bone comb of the burghs, which bears a rude resemblance to a hand, is totally dissimilar.

A most important addition to our knowledge of the prehistoric population of Orkney has been made by the discovery of what is commonly known as the "Underground House of Skail." The appellation is not very correct, as the structure in question is not subterranean, like so many of the Picts' houses and Weems, but has been built on the original

surface, though completely covered up, firstly by the accumulation of its own midden, and finally by blown sand. It consists of a long winding passage, which has been roofed over by large flagstones, at a height of about 3 feet, so that it could only be entered in a stooping position, into which open several chambers, which have apparently been separate huts. They are nearly square—about 20 feet each way, with upright walls about 7 feet high and one foot thick, but with the angles rounded off, and the walls, which are perpendicular at the sides, converging inwards at the angles. Several cells and recesses are built into the walls, or project from them, which may have been closets, or in some instances sleeping-places, and each chamber has had a fire in the centre, defined by a square space paved with large hearth-stones, and enclosed by low upright flags. There was some appearance of the chambers having been partially roofed by jaw bones of whales, some fragments of large jaw bones having been found on the floor. The oil colour sketch of the most complete chamber by Mr John Cairns, artist, and presented by him to the Society's Museum, gives a very correct idea of its structure, and I exhibit a sketch taken on the spot, giving an idea of the general appearance.

On the whole, the appearance of the chamber was not unlike that of the interior fittings and arrangement of the burgs, when the later or secondary additions common in the latter have been removed. Two chambers had been completely excavated, together with the passage and portions of the entrances to other chambers, by Mr William Watt, a relative of William Watt, Esq. of Breckness, residing at Skail, to whose zeal the scientific world is indebted for the discovery and exhumation of this interesting relic of antiquity. A great part of the labour of excavation was done by his own hands, and every relic carefully preserved and its position noted. I enjoyed the advantage of visiting the spot, and seeing Mr Watt's collection, in company with that gentleman and Mr George Petrie.

The following are the principal results :—

The midden, which had accumulated in and around the building to the depth, in some places, of as much as eight or ten feet, consisted principally of ashes, intermixed with shells and splintered bones. The number of implements of stone and bone found in the midden and in clearing out the building, was quite extraordinary. I should think there must have

been several hundred objects, which showed unequivocal proofs of having been wrought or selected by human agency.

The general type of these objects was the same as that of the burgs, but with some points which call for special observation, and which seem to show a higher antiquity.

1. There was no trace whatever of any metal, and the care with which several pieces of bone had been wrought to a sharp cutting edge, goes far to negative the possession of any other cutting material, either of metal or flint.

2. The number of oval sandstone pounders and of sandstone flakes adapted for knives or scrapers was so great, as almost to lead to the supposition that there must have been a manufactory of these articles. Hundreds of these flakes lay about in every direction, with the cores from which they had been struck, illustrating in the most complete and interesting manner not only the origin and use of many of the objects that I had obtained at Keiss and seen in the Orcadian burgs, but generally the wonderful analogy which had existed between the sandstone flake period in these sandstone districts, and the flint flake period in these districts so well known to antiquarians, where flint is abundant.

The description in Mons. Boucher de Perthe's book of the process by which he proved the artificial character of the flint remains at Abbeville, might apply almost *verbatim* to these sandstone flakes, as to whose artificial character there could be no doubt, from their being found in such large numbers inside a dwelling, often with marks of use, and in junction with the abraded pestles and mortars which had been used in their manufacture.

Here were the original flakes, with the cores from which they had been struck at a single blow, each showing the point where the blow had been struck; others, again, showing a second or third blow, detaching smaller flakes from the original ones, sometimes to modify its form and bring it to a better edge, and sometimes to give a better hold for the finger or thumb in working. The process had evidently been this: A rolled oval pebble of hard sandstone from the beach had been selected and held upright on a flat stone, while, by a dextrous blow given by another similar oval stone used as a hammer, a flake had been detached. The first flake was almost always of the oval or circular form, found in the

chief's kist at Keiss (see Plate VI. No. 9), and it presented a sharp edge, well adapted for flaying hides, cutting flesh or blubber, or even for cutting fresh bone and horn. The chief difference between the flakes of flint and sandstone is this, and it results from the nature of the material: the flint comes off in long flakes, and admits of being worked up by a number of small chips into a variety of shapes: the sandstone comes off in oval or circular flakes, and can only be worked to the extent of two or three blows, and therefore into the simplest and rudest forms.

This process of striking sandstone flakes explains the reason why such oval beach stones, often abraded at the end, are found so commonly and in such numbers in all old buildings of this period. I am satisfied from what I saw at Skail, that scores of stones which I rejected at Keiss, as showing no unequivocal proof of human agency, had really been selected and stored up, and that many flakes which I then supposed to be natural, were really artificial.

I believe also that the collection at Skail explains what had often puzzled me, viz., the use of the large blocks of stones with a circular hole not pierced through, which looked like abandoned attempts to manufacture querns. Two such stones stood on the floor of one of the chambers at Skail, with numerous oval pestles, flakes, and cores lying about, so that it seemed as if the lower end of the oval core had been placed in this hole to steady it, while the blow was struck on the other end with the pestle. The use of the round stone plates so frequently found in this class of old dwellings was also made apparent, as they were found associated with the stone urns or cups of which they had been the lids. In one case a stone cup was found with a circular lid, each showing traces of a red pigment. In another instance the cup and lid were triangular. No doubt the smaller plates were also used as lids for the jars of rude pottery, of which the remains are frequent.

There were no querns, although these articles are so common in the ruins of burghs. From the large number of stone mortars, cups, and other incidental remains of stone found at Skail, it is highly improbable that some specimen of querns should not have been found had such existed. Should the absence of querns be confirmed by further investigation, it would tend to establish an important distinction between the remains at Skail and those of the Burghs.

4. In like manner whorls, which are tolerably common in the burghs, were wanting. There were several beads of bone and teeth, and some tusks of boar pierced with circular holes, but they were all evidently ornaments.

5. The peculiar hand comb was also wanting. The nearest approach to a comb was a piece of bone cut into two prongs, like a two-pronged fork.

6. No spear or arrow heads were found, with the exception of two doubtful specimens of very rude arrow-heads of hard stone. The only remains which appeared to have been used as weapons were some stone clubs about 18 inches long, which seem to have been carefully selected from the beach, and were piled up in one of the recesses in the wall with some very large oval beach stones of the sort used as hammers, and one very remarkable specimen of a rude stone axe or hatchet, made by roughly chipping a piece of clay slate into a form somewhat resembling a butcher's cleaver. There were also a number of round sling-stones, and one which had been ground on one side to a triangular point. Apparently all the weapons had been held in the hand without any shaft or attachment. In the extreme rudeness of their type, they corresponded very exactly with those found in the chief's kist at Keiss.

7. Among the specimens is a fine one of the stone block, like that from the Birkle Hills at Keiss (see fig 2, p. 50). It exactly resembles a ship's block cut out in stone, and agrees with mine in having a triangular notch at one end transverse to the central groove. Three or four more of these peculiar blocks have been found in connection with Picts' houses in Orkney; and what is singular, they are found in Ireland, Scandinavia, and in the lake-dwellings of Italy, showing a wide range for a very peculiar form of stone implement. It has been conjectured by Scandinavian antiquaries that these stone blocks were used as sinkers for nets, but this scarcely seems probable as regards the specimens from Orkney and Caithness. There is no proof that the people by whom they were made used nets. In fact, the presumption is strongly the other way, from the scarcity of remains of fish; nor is it likely that so much pains would have been bestowed on mere sinkers, when an abundance of natural stones, equally well suited for the purpose, could have been picked up on the beach. Moreover, the block from Skail is too large and heavy for a row of such blocks to have been used as sinkers. It has more the appearance

of having been attached to a thong, and swung round, so as to be used as a weapon, like the flail stone of which mention is made in some of the early Irish annals.

8. The fauna appeared to be the same as that of the burgs, but with one remarkable exception, viz., in addition to the small straight horns of *Bos longifrons*, there were several large ox horns which, from their size and curvature, must have been those of *Bos primigenius*, of which specimens have been found in the peat mosses, though, as far as I am aware, not before in connection with any ancient dwellings in Orkney or Caithness. One horn, now exhibited, was nearly 12 inches in circumference at the base, and had been upwards of 2 feet long.

9. Human remains were found in three instances. A skeleton nearly complete was found in cleaning out the middle hut or chamber, in sand about three feet above the floor. I saw the skull, which is in Mr Watt's possession, and I hope he may be induced to forward it to the National Museum of the Antiquaries of Scotland at Edinburgh. It was of fair size, but of a low type, with receding forehead and prognathous jaws. The most marked features were the prominence of the frontal sinuses, the very deep notch at the root of the nose, and the projecting nasal bones, which stood out at a high angle.

A fragment of lower jaw and other human bones were found, with animal teeth and bones, below the pavement of one of the chambers.

Several long bones of ox and deer were found in one of the recesses, among which were some human bones of the leg and arm. Upon one human femur, now exhibited, there are two scores or notches, apparently made by a stone knife, like those frequently seen on the bones of large animals. The evidence points strongly to cannibalism having been occasionally resorted to.

There are two of the circular stone balls in Mr Watt's collection, about the size of an apple, elaborately carved into a series of projecting conical points, of which there are several specimens from the ancient dwellings in other parts of Scotland in the Society's Museum. These are remarkable, as they show more skill in working stone, and, altogether, more refinement than might be inferred, from the extreme rudeness of the other remains.

There are also two large bone pins of peculiar form, with a central hole

as if for suspension, which are of hard and polished bone, and better wrought than any of the other articles of bone or iron.

There is not the slightest trace of any pattern or ornament upon any of the articles of stone or bone found at Skaill, or upon any of the numerous fragments of urns and pieces of pottery.

Of celts found in this underground house I have the following note:—

Two or three extremely rude—merely beach stones, ground roughly to a sort of edge at one end. Of these one large specimen is produced, which was found in the recess with the stone clubs.

One of serpentine, about 5 inches long—very rough, but with a tolerable edge.

One of white quartz, about 3 inches long.

One of black basalt or trap, the same length.

And one a very small polished celt, only $1\frac{1}{2}$ inch long, bevelled to a fine edge.

A tracing of the latter from the original is exhibited. It is the only article in the whole collection which, as far as I can judge, gives evidence of some intercourse with a more civilised people.

10. Among the miscellaneous articles in Mr Watt's collection, is the lump of the large bone of a whale, which bears some rude resemblance to a human figure, with two small holes apparently for eyes and a large one for a mouth, which has been conjectured to be an idol. It is believed to be quite unique, and has evidently been intended for suspension round the neck or against a wall.

The discovery of an extensive manufactory of sandstone flakes, as to which no one who visits Skaill can entertain the least doubt, throws great light on the age and character of all the remains in which flakes of this sort are found, and affords an interesting supplement to the chapter of primæval history which treats of the analogous character of flint flakes, which has been traced up to the remotest antiquity.

As regards these sandstone flakes, having obtained the clue to their manufacture from the remains at Skaill, I am enabled to extend the evidence of their existence to several other localities.

Among the specimens which I have deposited from the Museum, in addition to those from Skaill, are several from the kists and middens at Keiss; two from the midden of an old burg, below the site of the present

cemetery near Stromness; one of a different sort of sandstone, from a midden exposed in a section of the low cliff about 200 yards west of the landing-place at the Muckle Ferry, Sutherlandshire; and two, of a micaceous schist, from a raised beach strewn with shells, split and burnt bones, and the usual refuse of a midden, above the Ferry House at Nigg, opposite Cromarty.

Those from the Muckle Ferry and Cromarty were picked up by me in the course of a few minutes' search, while waiting for the ferry-boat, which, however, was sufficient to enable me to recognise the same class of objects in the middens as those with which I was familiar in Caithness and Orkney, viz., shells and split bones, and teeth, showing the action of fire; of deer, ox, horse, pig, and goat or sheep.

The flakes in question, which are on the table, show, I believe, clear marks of abrasion from use, and of the blows by which they have been struck from the core. At any rate, being found in middens, and with the abundant evidence of precisely similar objects being found in houses, kists, and middens in Orkney and Caithness, I feel no doubt that they are artificial.

The small disc from Cromarty is a curious counterpart of the disc found in the chief's kist at Keiss; and the three knives or scrapers, one from the Muckle Ferry, one from Cromarty, and one from the midden of the burg at the cemetery near Stromness, are precisely the same class of articles as the oval or circular knives or scrapers (Plate VI. figs. 9 and 10), from the chief's kist. One of the flakes from Skail is also almost a facsimile of one from the chief's kist, figured No. 7, as a spear-head.

I may add another instance, which shows in a striking manner the composition of these middens over a wide area, and the fact that the primitive inhabitants used such hard stone as they could find in their respective districts for the purposes for which flint was used, when the inhabitants obtained that material on the spot, or by intercourse with other countries. In digging the foundation of a house at St Andrews two years ago, near the margin of the cliff, the workmen hit upon an ancient midden, the remains from which were carefully collected by Mr Walker, the Curator of the Museum at St Andrews, who has written an account of them, which will be shortly published in the "Annals and Magazine of Natural History."

In going over the collection with Mr Walker, I found the animal remains identical with those of the middens I have described, and in the same state, viz., with the bones split, and showing the action of fire. Several fragments of rude pottery were also discovered, and an urn nearly complete, which, like those from the northern middens, showed no trace of any pattern or ornament. The remarkable feature in the collection was, however, that it contained a considerable number of pieces of the ironstone nodules, common in the soft sandstone of St Andrews, of which at least a dozen had been obviously roughly ground or chipped into shape for human purposes. Most of the other specimens had probably been similarly ground or chipped, but so roughly that no reliance could be placed on their artificial character, except from the fact that they were found in association with the others in the midden. But as to some of them there can be no doubt.

There is here, therefore, a strong confirmation of what I have inferred from the other remains, viz., that a series of middens of the same type, and characterised by the same class of animal remains, and rude pottery and stone and bone implements, exists throughout a considerable part of Scotland; but that in each district the primitive people used the stone, whatever it happened to be, of the district.

Thus the type of the stone implement differs according to the material, flint affording the means of fashioning knives, arrow-heads, and celts into finished and really elegant forms; while those who had to work with hard semi-crystallised sandstone, were limited to such sharp-edged knives or scrapers, and rude lance or arrow heads, as could be struck off by one or two blows, or roughly ground; and those who had no hard stone except ironstone nodules, were still worse off, and had to resort mainly to grinding, in order to get implements which, after all, were very blunt and imperfect.