

CHAPTER V.

CULTURE AND CIVILISATION OF THE STONE AGE PEOPLE.



WHEN man started on his career as an intelligent utiliser of nature's forces, he had recourse to methods and practices unique in the history of the organic world. By means of his special monopoly as a toolmaker, he manufactured a variety of implements, weapons, and tools, by the use of which he established a supremacy over all other animals. These inventions, being virtually the products of an intelligent mind, have one important characteristic which is of inestimable value in the study of archæology—viz., that they disclose the technical skill and teleological purpose of their manufacturers. In other words, the progressive phases of man's intelligence have been stereotyped in the material world by corresponding changes in his handicraft works. Hence, in the analysis of archæological remains—implements, weapons, ornaments, temples, tombs, houses, idols, &c.—we have now the means of gaining some information regarding the intellectual and social condition of man during his past career on the globe.

The specialisation of the human hand is one of the most

remarkable phenomena of organic evolution. Its efficiency as a prehensile and manipulative organ is due, primarily, to the freedom of the movements of the arm, the refinement of digital palpation, and the facility with which the thumb can be opposed to the other fingers so as to form a clasp or hook. But before the full import of this great engine of human civilisation can be appreciated, there is another element to be considered—viz., the objective tool or instrument which the hand grasps, without which the manipulative function of the latter would be shorn of half its value. The relation between the hand and the instrument is such that it may be plausibly asked whether the hand was adapted for the instrument, or the instrument for the hand. But however this may be, in their conjoined functional capacity the arm often becomes a handle, and the hand itself a mere pliant means of fixing the implement. The supplementary adjuncts to this special use of the hand are ingeniously adapted for a great variety of purposes. The various mechanical processes—cutting, sawing, scraping, boring, hammering, &c.—are all effected by appropriate tools, such as the knife, axe, chisel, scraper, &c. The mechanical efficiency of some of these implements is increased by the further interposition of an artificial handle of wood or some other material, as in the case of the ordinary axe—an adjustment which simply increases the leverage by adding to the length of the human arm; or, as in the case of the knife, which merely enables the hand to grasp it more firmly. In all hafted tools the hand-grasping, which was originally applied to the tool itself, is thus replaced by some sort of contrivance for binding the handle and it together; in which case the hand-grasping is more advantageously transferred to the handle. In the selection of materials for the manufacture of tools, as well as in the methods and contrivances by which

they are adjusted, it must be acknowledged that prehistoric man has exercised an almost faultless judgment, as they invariably disclose a pre-eminent fitness for the special purpose for which they were intended.

When prehistoric man first entered the romantic glens and forests of North Britain, he was a skilled craftsman, and his life-drama had already been moulded on the fundamental principles of modern civilisation. As a thoughtful interpreter of the laws of nature, and a skilful manipulator of the economic materials around him, he appears to have been little inferior to his more refined descendants of the present day, although, of course, it cannot be maintained that his actual amount of knowledge was as great. But the difference is one of degree, and not of kind.

In this and the following chapter I shall treat of some of the archæological remains of the prehistoric period independently of the chronological element, except in so far as they may be defined by the sequence of the so-called three Ages of Stone, Bronze, and Iron. In regard to this doctrine, it is essential to have clear notions from the outset, as, whatever its critical and archæological value may be, it is undoubtedly applicable to Scotland. For its invention and application to prehistoric researches we are indebted to Scandinavian savants. Struck with the elegance and beauty of the stone implements, so profusely scattered over the land, they seized the idea—hitherto never seriously considered, though occasionally mooted, by writers in other countries—that there was a time when people were entirely ignorant of the use of metals, and had to depend exclusively on such tools as could be manufactured of stone, horn, wood, &c., in the prosecution of their social industries and requirements. To this idea was linked another, which also seemed to be well founded—viz., that their earliest metal

objects were made of a compound of copper and tin known as bronze. Iron was not known in the country till several centuries afterwards ; but when it did become known, its superior qualities for cutting purposes gave it a preference over the former metal.

With these remarks I proceed to inquire into the nature of the culture and civilisation of the early inhabitants of Scotland, so far as this may be deduced from the character and technic of the stray remains of their handiworks which, in defiance of the gnawing tooth of time, have survived to the present day. For convenience of description, and to prevent undue discursiveness, the subject will be treated under the three following heads : (1) The economic or raw materials ; (2) The workshop and its tools ; (3) The manner in which their handicraft products were applied to the exigencies of social and domestic life.

I. THE RAW MATERIALS.

The economic materials utilised by the Stone Age people in the manufacture of such articles as were indispensable to their simple mode of life consisted of different kinds of stones and minerals ; horns, bones, teeth, shells, and skins of animals ; wood-bark, reeds, and the prepared fibres of plants. Flint, on account of its hardness and peculiarity of flaking when struck with a smart blow, was chiefly used for cutting implements ; but in Scotland, where the raw material is only sparingly found as nodules among travelled gravels, this industry was necessarily restricted to the manufacture of the smaller objects, such as knives, arrow-points, scrapers, borers, &c.,—the larger implements and tools being made of the more common stones found in the neighbourhood.

Although no prehistoric implements of jade or nephrite

have been found in Scotland, the problems associated with their origin and prevalence throughout Central Europe are of so much importance, from an ethnological point of view, that, even in this sketch, some notice of them is desirable. Independent of the lake-dwelling finds, the number of jade axes known in Europe may be roughly estimated at 200, about the half of which have been found in graves of the Stone Age in France, especially the dolmens of Brittany. Of the remaining half about eighty are from Western Germany, and the rest from various localities in Italy, Austria, and Greece. Seeing that jade could not be found *in situ* in Europe, the favourite theory for the origin of these implements was that they were imported by the Neolithic people in their westward journey from Asia. The discovery of a large number of celts and chisels in the Swiss lake-dwellings has reopened the question as to the origin of jade implements. The stations in Lake Constance have alone yielded over 1000 specimens—that of Maurach being the richest. In the latter station 349 tolerably well made and 141 badly made implements have been found, besides 154 chips and sawn portions varying from the size of a finger-nail to a few square inches. This proves that the lake-dwellers were in possession of the raw material; but, notwithstanding the most careful search, not a particle of jade has been yet found *in situ* in any part of Switzerland.

Jade, as known in Europe, may be classified into three varieties—nephrite, jadeite, and chloromelanite. From careful examination by Fischer, Meyer, and others, it appears that nephrite was greatly in excess of jadeite in the settlements of Lake Constance and its neighbourhood; but on moving westwards this inequality became gradually altered, till in France it was entirely reversed. Chloromelanite, on the other hand, though much rarer than either of the other

two varieties, seems to have been more evenly distributed. Roundly speaking, we find in the whole of Europe from 300 to 400 worked objects of jadeite, 200 of chloromelanite, and as many as twice these numbers combined of nephrite.

A few isolated portions of jade have been found in Germany and Styria; and it is said that the mineral in small quantities has been detected *in situ* in the rocks of Silesia. A few chips have also been observed in the prehistoric caves of Mentone. Some thirteen small axes and chisels of green jade, and one of white jade, are recorded by Schliemann as having been found in the prehistoric cities of Troy.¹ During a recent visit to Vancouver, Mr Hill Tout showed me in his private collection several polished masses of jade, as large as a man's head, which had been found in glacial *débris* some distance up the Frazer valley; also, a few small axes made of this material, as well as portions that had been sawn off, evidently in the course of working the mineral, which had been found on an old inhabited site in the same neighbourhood. Specimens of differently coloured jades may be seen in the Natural History Museum of Kensington from China, New Zealand, New Caledonia, India, &c. One large water-worn mass, weighing 1156 lb., is from Battugol, Irkutsk, Asiatic Russia. Further references to the distribution of jade, together with a fuller notice of jade implements in Europe, will be found in 'The Lake-Dwellings of Europe,' p. 505, and 'Ilios,' p. 240.

The beautiful flakes and knives of obsidian found among the relics of the ancient Peruvians and Mexicans, as well as those which may still be seen in use among New Zealanders, American Indians, and other semi-civilised races prove how suitable this mineral is for cutting purposes. Though found *in situ* in several volcanic districts in Europe,

¹ Ilios, p. 573.

implements made of it do not figure largely among prehistoric collections, probably owing to its rarity. No objects of obsidian have been found in Scotland, to my knowledge; and in the Continental museums their occurrence is rare. I have noted, however, a few dozen flakes in the Museum Ponti, on the Isola Virginia, from the "palafittes" of Lake Varese. Others have been collected on the sites of some primitive habitations in Hungary.¹ The late Herr Fiala has recorded a few flakes and a beautifully worked arrow-point from Debelobrdo and Sobunar, near Sarajevo.² One knife is among the objects found on a lake-dwelling in the Attersee.³ Dr Schliemann has noted the occurrence of knives and arrow-heads in several of his excavations, as many as thirty-five beautifully formed arrow-points having been found in the fourth sepulchre at Mycenæ.⁴ Nuclei of obsidian have also been found in Greece.⁵

Jet and its inferior varieties—brown or cannel coal and bituminous shales—were manufactured by the prehistoric inhabitants of Britain into a variety of ornaments, such as rings, pendants, necklaces, buttons, &c. According to Pliny,⁶ *gagates* (now corrupted into jet) takes its name from Gages, the name of a river in Lycia, from the banks of which this substance was obtained. Bede, in his description of Britain (book i. chap. i.), states that "it has much and excellent jet, which is black and sparkling, glittering at the fire, and when heated, drives away serpents." The principal modern source of jet in this country is the vicinity of Whitby,

¹ Cat. de l'Exposition Préhistorique, Budapest, pp. 19, 24, 28, 34, 44, 86.

² Wissenschaft. Mitt. aus Bosnien und der Hercegovina, vol. i. p. 48, and vol. iv. pp. 53, 54.

³ Lake-Dwellings of Europe, p. 163.

⁴ Mycenæ and Tiryns, pp. 158, 272; Ilios, pp. 247, 445.

⁵ Perrot et Chipiez, Histoire de l'Art dans l'Antiquité, vol. vi. p. 127.

⁶ Hist. Nat., xxxvi. 34.

in Yorkshire, where it is found mixed with beds of lignite in the Upper Lias. It is also largely found in France (Aude) and in Spain (Asturias), where it gives employment to a number of artisans, who manufacture it into beads, crosses, and other trinkets used in Roman Catholic countries.

Jet, like amber, is electrical when rubbed, and hence it is called *black amber* by the German amber-diggers. Articles made of jet, or of the inferior shales, were more abundantly used in prehistoric times in Scotland than those made of amber, probably because the raw material was more readily procured. Being easily worked, and capable of taking on a high polish, it admirably suited the requirements of the age. Its highest development to ornamental purposes appears to have been during the Bronze Age, as many of the plates, which formed the component parts of necklaces, are ornamented with designs which are considered characteristic of that period.

Amber, a fossil gum derived from an extinct coniferous tree, was an important substance in the prehistoric civilisation of Europe on account of its attractive appearance, and the facility with which it could be manufactured into ornaments. The Greeks and Romans set a high value on it, and used it as beads, pendants, and brooches. Pliny devotes a long chapter (book xxxvii. chap. 11) to an account of it and "the many falsehoods that have been told about it." Homer refers to it in the line—

"The gold necklace hung with bits of amber."¹

Although doubtfully indigenous to Britain, pieces of amber are said to have been occasionally found washed up on its eastern shores, as at Buchan in Aberdeenshire, Queensferry on the Firth of Forth, and along the coasts of Norfolk, Essex,

¹ *Odyssey*, xv. 460.

and Sussex. Reference to the occurrence of amber in lignite beds in the counties of Londonderry and Tyrone, Ireland, is given by Mr G. Coffey.¹ It has also been found in small quantities on the shores of Norway, Sweden, Sicily, and the Adriatic. But the chief source of its supply, both in ancient and modern times, is the south shore of the Baltic, especially between Königsberg and Memel, and the east coast of the island of Rügen. Its use in the British Isles during pre-historic times was almost exclusively confined to the manufacture of beads and pendants, a few examples of which have been recorded from English barrows of the Bronze Age² and some ancient graves in Scotland.³ But during the Stone Age in Eastern Prussia it was put to more multifarious uses, not only beads and necklaces, but also buttons, studs, pendants, and rudely-formed human figures, having been found in the graves of that district.⁴ Ornaments of amber have been found in the Scottish and Irish crannogs, the lake-dwellings of Switzerland, the Terremare of Italy, and more especially among remains of the early Iron Age of South-Eastern Europe. The cemeteries of Glasinac and Jezerine, in Bosnia, Santa Lucia, at the head of the Adriatic Gulf, and Hallstatt in Austria, have yielded large numbers of beads and brooch-pendants of imported amber.

The granites, quartzites, porphyries, serpentines, greenstones, felstones, diorites, clay-slates, and indurated sandstones, of which the larger stone implements and weapons were usually made, are to a greater or less extent readily procurable in Scotland, either *in situ* or among ice-travelled *débris*.

¹ Origins of Prehist. Ornament, p. 66.

² British Barrows, p. 55.

³ Proc. Soc. A. Scot., vol. xxvi. p. 186.

⁴ See 'Der Bernsteinschmuck der Steinzeit,' by Richard Klebs, Königsberg, 1882; also 'L'Ambra nella Storia e nella Geologia,' by A. Stoppani, Milano, 1886.

The other substances made use of in the prehistoric workshop call for no special remarks. There appears to have been no lack of deer-horn in any part of Scotland ; and of course bones, teeth, shells, skins, &c., were to be had everywhere. Many of the organic materials are, however, so liable to decomposition that most of the articles made of them have long ago crumbled into dust. It is, consequently, very rare to find woollen fabrics, skins, bast, &c., in burials, or on any of the inhabited sites, except the lake-dwellings. The fine mud and peaty deposits of the latter afforded the most favourable conditions for preserving such fragile objects as, from time to time, dropped into them from the hands of their occupiers. But these, and other remains of this kind, will be discussed later on under the category of worked objects.

II. THE WORKSHOP AND ITS TOOLS.

In describing the methods practised by prehistoric workmen in the stone industries of the period, we have sometimes not only to wander outside the Scottish area for archæological evidence, but also to be guided, to some extent, by the manner in which analogous objects have been manufactured in recent times by races who may still be regarded as living under a Stone-Age civilisation. Sir John Evans, in his usual exhaustive manner, has collected a mass of valuable information from both these sources.¹ He has, moreover, shown by practical experiments with his own hands that the simple appliances contained in a "kit of tools," such as can be proved to have been in the possession of the Stone-Age people, were capable of producing, in skilled hands, the effects assigned to them. As regards the fine chipping of flint, he has demonstrated that it could be produced both by skilfully directed blows of a stone hammer,

¹ Ancient Stone Implements, &c., chap. ii.

and by the application of steady pressure with a suitable implement made of some hard material, as the tyne of a reindeer horn. He admits, however, that, notwithstanding all his ingenious methods, there remains a residuum of manipulative skill to the credit of the Stone-Age operator which still baffles modern ingenuity. "I may, therefore, at once confess," he writes, "that though by the use of stag's horn the ordinary surface-chipping characteristic of ancient implements may be obtained, yet the method of producing the even fluting, like ripple-marks, by detaching parallel splinters uniform in size, and extending almost across the surface of a lance- or arrow-head, is at present a mystery to me, as is also the method by which the delicate ornamentation on the handles of Danish flint daggers was produced." ¹

For a long time it was maintained by many antiquaries that round holes could not be bored through hard stones without the use of metallic instruments. But the discoveries on the sites of lake-dwellings have entirely disproved this assertion, as it is now conclusively shown that both the sawing and boring of all manner of stones could have been effected by properly adjusted instruments made of wood or horn, with the addition of a little sand applied in the same way as the modern lapidary uses emery. The late Dr Keller, experimenting with a thin wooden board and dry sand, proved that, by these means alone, he could saw through the hardest stone. Similarly with a wooden tube, or a piece of hollow horn, put into rotatory motion in alternate directions by means of a string bow, like the fire-drill of modern savages, he could bore perfectly round holes in stones. Soft wood was found to be more suitable than hard, as it took up more of the particles of sand into its tissues, thus acting like fine teeth in grinding the stone. That tubes of some kind were used

¹ Ancient Stone Implements, &c., chap. ii. p. 38.

for boring by the lake-dwellers is proved by the finding of hundreds of the cylindrical cores, which remained as refuse after the perforation had been completed. In the Archæological Museum of Lausanne I saw a tray full of these cores exhibited in one of the cases; and in the Museum at Zurich there may be seen a portion of a stone hammer, with the core still in its place, which had evidently been broken before the perforation was completed.¹ This interesting relic was found on the station of Bauschânze. Another flat stone, just showing the commencement of a tubular perforation, may be seen in the Laibach Museum among the relics from one of the neighbouring lake-dwellings. Similar partially bored holes still retaining the cores may also be seen in the Museum of Stockholm and elsewhere. But it was not an essential part of the process of boring that the perforator should be a hollow tube, as a solid piece of wood, horn, or stone, could be used in the same way. Indeed, according to the evolutionary law of progress, I should say that the latter method preceded the former. In several instances I have seen evidence that the sawing or boring had been preceded by little pick marks, as if intended to guide the instrument in the initiatory stages of the operation.

Many of the Scottish specimens of perforated stone implements show that the boring had been performed from both sides, the two holes meeting near the middle, where on section they are seen to diminish in width (fig. 40). Such perforations would be readily accounted for by the rotatory motion of a cylindrical piece of wood, or a stone pestle, the funnel shape of the aperture being due to the gradual wasting of the borer by friction. Hollow tubes do not appear to have been used for boring holes in Scotland, or indeed within the British Isles, as, so far as my knowledge goes, no

¹ See Lake-Dwellings of Europe, fig. 184, No. 6.

such cores have been found among the antiquarian relics hitherto collected in these countries. I have seen one specimen, found in Scotland, in which the operation had just been begun, and it consisted of a conical depression on

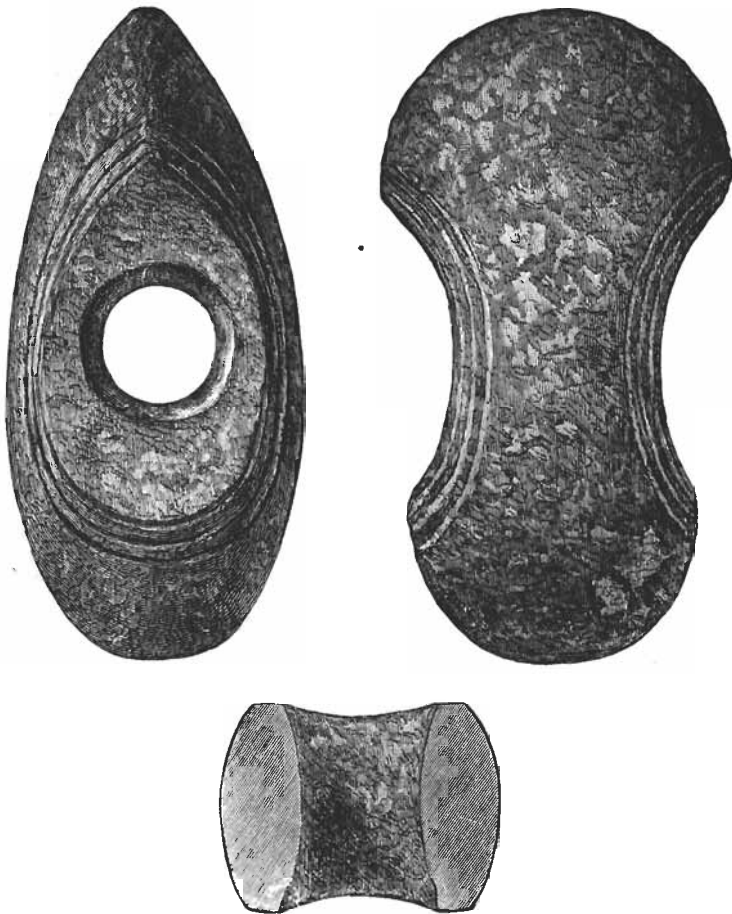


Fig. 40.—Axe-hammer found under an inverted urn on Chapelton Farm, West Kilbride (3).

each side, apparently picked out with some sharp tool. Perhaps this first stage would be followed up by grinding with a stick and sand.

In the manufacture of flint implements from the raw material the operator proceeded to work the nodule from one of two points of view, according to the class of imple-

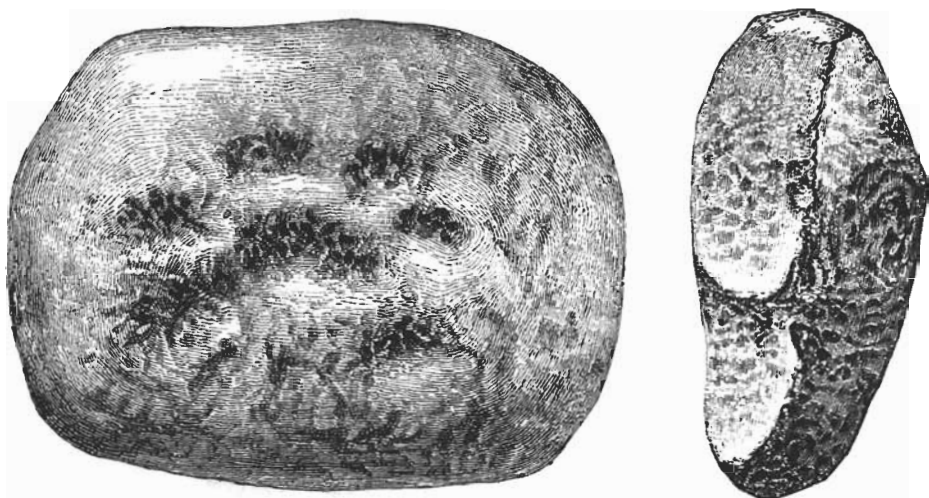
ment required. To procure the flakes intended to serve as the groundwork of the smaller worked objects, such as knives, arrow-points, scrapers, &c., all his ingenuity was directed to the production of the suitable form of flake; and having exhausted the nodule's capacity in this respect, the remaining core was thrown away as useless. But if the operator's intention was to secure a large implement, say an axe or chisel, his attention was exclusively confined to reducing the nodule to the required shape, without any regard to the resulting flakes and splinters which, in this case, became waste products. The tools used in these operations were stone-anvils, hammer-stones of various sizes, and fabricators or flaking-tools made of flint, or perhaps of horn or bone.

Anvils have been found in Scotland in various localities, but more especially on the site of the flint factory at Skelmuir, in Aberdeenshire, where no less than nine specimens are known to have been found.¹ They are generally made of quartzite, often from water-worn pebbles, and show a number of small worked depressions on one or both surfaces (fig. 41). Two anvil-stones from this factory, which were presented to the National Museum, in 1897, by Mr John Rae, are thus described by Dr Anderson: "They are water-worn quartzose boulders, about 8 inches by 6 inches, and $2\frac{1}{2}$ inches in thickness, strongly marked on both faces with a central pitted depression, surrounded by six or seven similar but smaller depressions, apparently produced by the wear resulting from the process of breaking flints upon them with hammer-stones, which are also abundantly found on the same site, amidst great quantities of splintered flint nodules."² One of these anvils and a hammer-stone from the same locality are represented on figs. 41 and 42.

¹ Proc. Soc. A. Scot., vol. xiv. p. 314; vol. xvi. p. 13.

² Ibid., vol. xxi. p. 135.

Five other specimens purchased for the Museum are thus described :¹ “ Five anvil-stones of quartzite, found at Skelmuir, Aberdeenshire—viz., (1) with nine hollows on one face and six on the other ; (2) with four hollows on each face ; (3) with two hollows on one face and one on the other, and grooved on each side for a handle ; (4) with three hollows on one face and two on the other, and the sides worn by use



Figs. 41, 42.—Stone anvil and hammer-stone from Skelmuir, Aberdeenshire (about $\frac{1}{3}$).

as a hammer-stone ; (5) with a deep circular smoothed hollow on one face.”

The stone hammers associated with the *débris* of flint factories are generally oblong quartzite pebbles showing markings of usage at one or both ends. Those found throughout the country, in fields or among the remains of human dwellings, vary greatly in size and configuration. They are often flat pebbles of a circular or oval shape, with marginal markings. Sometimes they present slight hollows on both faces, which go under the name of finger-marks (fig. 43). When perforated, so as to be used with a wooden handle,

¹ Proc. Soc. A. Scot., vol. xxiv. p. 8.

they display careful workmanship, with a symmetrical surface, often highly polished, and sometimes ornamented as shown in a remarkable specimen found at Corwen, in North Wales, and figured in the Proceedings of the Society of Antiquaries of Scotland, vol. vi. p. 43. But neither stone perforated hammers nor hammer-stones are peculiar to the Stone Age, as they are, especially the latter, abundantly found in the crannogs.

The so-called fabricators, or flaking tools, are made of flint, and worked into long narrow chisel-like objects with an

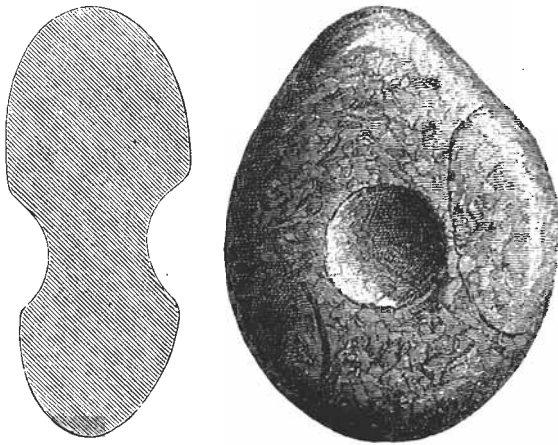


Fig. 43.—*Hammer-stone, with circular depression on both surfaces, found on the farm of Balcraig, Ayrshire ($\frac{1}{2}$).*

approach to a ridge on one or both surfaces, thus presenting a triangular or lozenge-shaped section across the middle. They are 4 to 5 inches in length, with rounded, or bluntly pointed, extremities. Such tools are by no means common in Scotland. Two have been found in Kincardineshire;¹ one in the chambered cairn of Unstan in Orkney (fig. 44), associated with some beautifully worked flint arrow-heads and knives;² one from Strathspey;³ three from Aberdeenshire;⁴

¹ Proc. Soc. A. Scot., vol. xi. p. 25.

² Ibid., vol. xix. p. 351.

³ Ibid., vol. xxiii. p. 18.

⁴ Ibid., vol. xxvii. p. 11.

and one from Roxburghshire.¹ Similar implements have been found in England, especially in districts, such as Yorkshire, where flint is abundant; also in Scandinavia there are analogous forms which, though not recognised as flaking tools, could hardly have been used for any other purpose. I have not observed them elsewhere in Europe, but perhaps the tynes of deer-horns might have been used instead.

Another tool is the borer, or drill, used for making small perforations, such as the eye of a bone needle. Its characteristic feature is a sharp point worked on the tip of a flake (figs. 45 and 46). Such instruments are of great antiquity, as they were used in Palæolithic times both in England (Kent's cavern) and on the Continent (the reindeer caves of France and the rock-shelter of the Schweizersbild). They are found among Neolithic remains all over Europe, though by no means numerous. Only three or four specimens have been found in Scotland—viz., one on the Culbin Sands,² one in Roxburghshire,³ and the two here figured.⁴

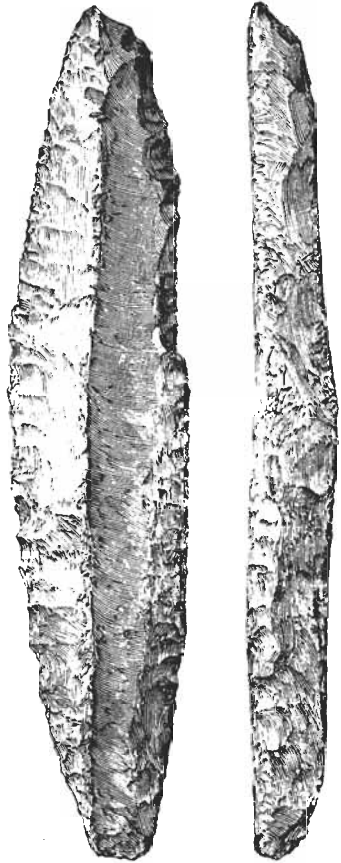


Fig. 44. — *Fabricator of flint found in the chambered cairn of Unstan, Orkney* (†).

¹ Proc. Soc. A. Scot., vol. xxviii. p. 338.

² Ibid., vol. xi. p. 546.

³ Ibid., vol. xxviii. p. 338.

⁴ Col. Ayr and Gal. Arch. Association, vol. i. pp. 23, 62.

tools of the workshop and other utilitarian implements, it may be as well to postpone further remarks on the mechanical skill of their manufacturers till after we have looked into the



Fig. 45.—*Flint drill found in the parish of Galston, Ayrshire* (‡).

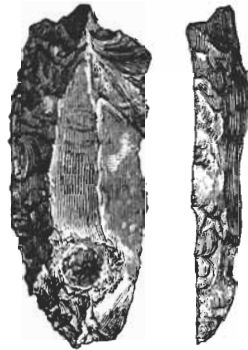


Fig. 46.—*Flint drill, Tows, Old Luce, Wig-townshire* (‡).

contents of the whole armoury with which Neolithic man fought the general battle of life.

III. IMPLEMENTS, WEAPONS, AND ORNAMENTS.

To analyse and classify the multifarious relics of the Stone Age people collected on Scottish soil, in accordance with their specific forms and purposes, would greatly exceed the limits and scope of this work. I must, therefore, confine my remarks to a brief general survey of their structural features and functional uses in the social economy. The objects which thus fall to be noticed may be conveniently and simply classified as implements, weapons, and articles of apparel and ornament—comprising axes, adzes, chisels, hammers, knives, saws, gouges, scrapers, grinding-stones, &c.; spear- and arrow-heads, daggers, sling-stones, &c.; spindle whorls, loom weights, smoothers, cloth, buttons, beads, rings, &c.

1. *Axes, Chisels, and Hammers.*

Axes may be divided into two groups, according as they have or have not a haft-hole. The former are rarely made of flint, even in countries where this material is abundant,

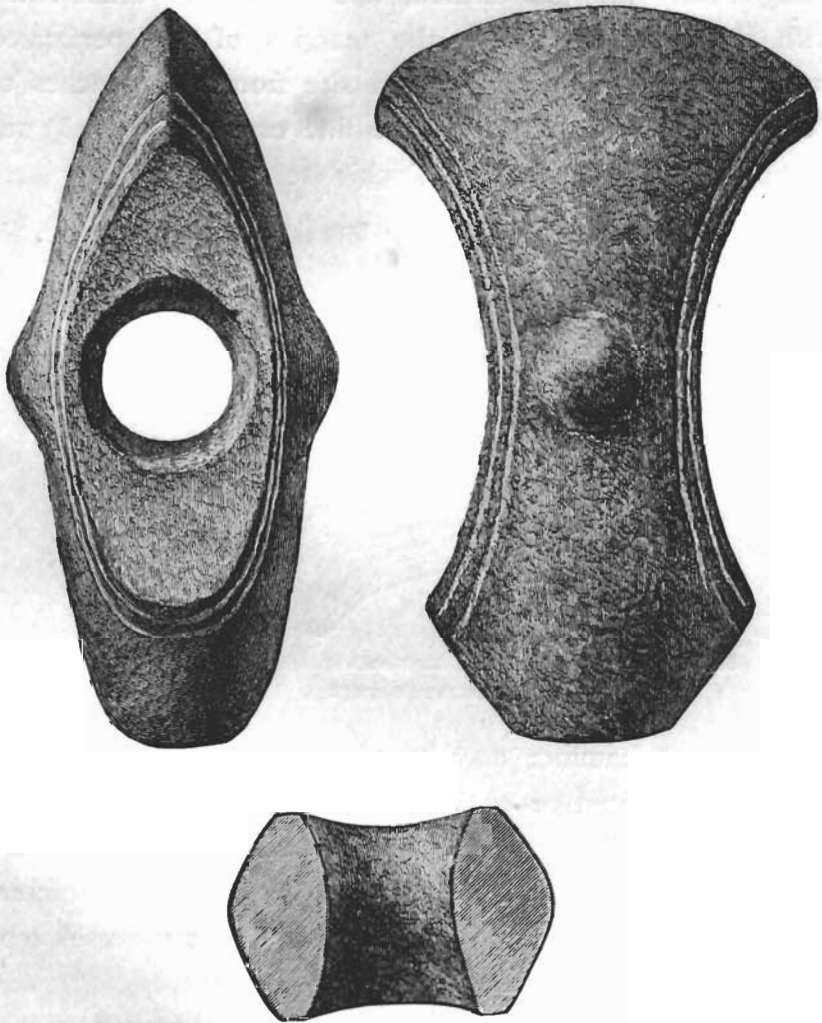


Fig. 47.—Axe-hammer found in a field near Ardrossan, Ayrshire (3).

owing to the difficulty of perforating such a hard substance. They generally present one cutting edge running parallel to the axis of the handle, the other being blunt; and hence

they are sometimes called axe-hammers. Some, however, have both ends brought to a cutting edge; while, on the other hand, implements of similar types have both ends blunt, in which case they fall into the category of stone hammers. All the axes in this group are worked with care, being nearly always polished, and sometimes ornamented with linear grooves along the margins of the perforated surfaces (fig. 47). They vary in size from a few inches to 10 or 11 inches in length. One fine example (fig. 48) was dug up in the stone circle of Crichtie (see p. 316).

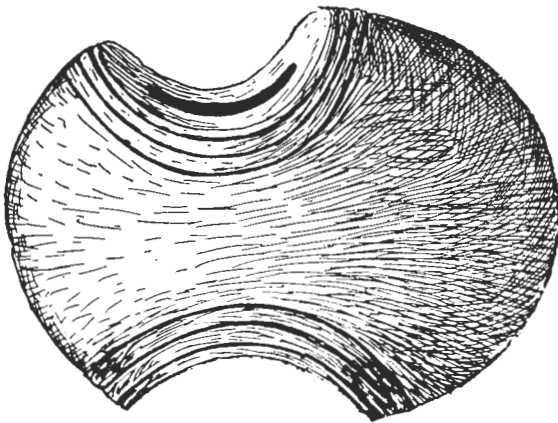


Fig. 48.—*Axe-hammer found in the stone circle of Crichtie, Aberdeenshire (4 inches in length).*

The stone hammer may be of any shape, but usually it is of an elongated or oval shape, with the perforation near, or in, the middle. The beautifully polished specimen here represented (fig. 49) was found, in 1873, under a sepulchral cairn, and associated with an urn of the food-vessel type (fig. 50).¹

The typical form of the unperforated axe, or celt, is that of a wedge with one end brought to a cutting edge, and the other bluntly pointed or more or less truncated (fig. 51). Specimens having both ends adapted for cutting are, how-

¹ Proc. Soc. A. Scot., vol. xvii. p. 453.

ever, occasionally met with. As a rule they have polished surfaces, with the exception of those made of flint, which are ground only at the cutting edge, though, even among these, some specimens may be seen which are beautifully polished all over. The members of this group vary so much in composition, finish, and dimensions that no two, among several hundreds in the National Museum, are exactly alike; but yet many of them have so many points of resemblance that certain types are recognised as peculiar to special areas



Fig. 49.—Stone hammer found with an urn in a cairn at Glenhead, near Doune ($\frac{1}{2}$).



Fig. 50.—Urn found in a cairn at Glenhead ($4\frac{1}{4}$ inches high).

—a fact no doubt due to fashion in local influences and customs. It is marvellous to what precision experts have carried the art of assorting these implements according to their *provenances*. In Scandinavia, owing to the abundance of flint in certain localities, we find specimens of very large dimensions made of this material, some being beautifully chipped and others finely polished.

In the Scottish National collection there are a few specimens which may be characterised as adzes, notably one from

Ferny Brae, parish of Slains, Aberdeenshire. It is made of grey flint, "finely polished and of unique form, being triangular in section across the middle, and expanding slightly

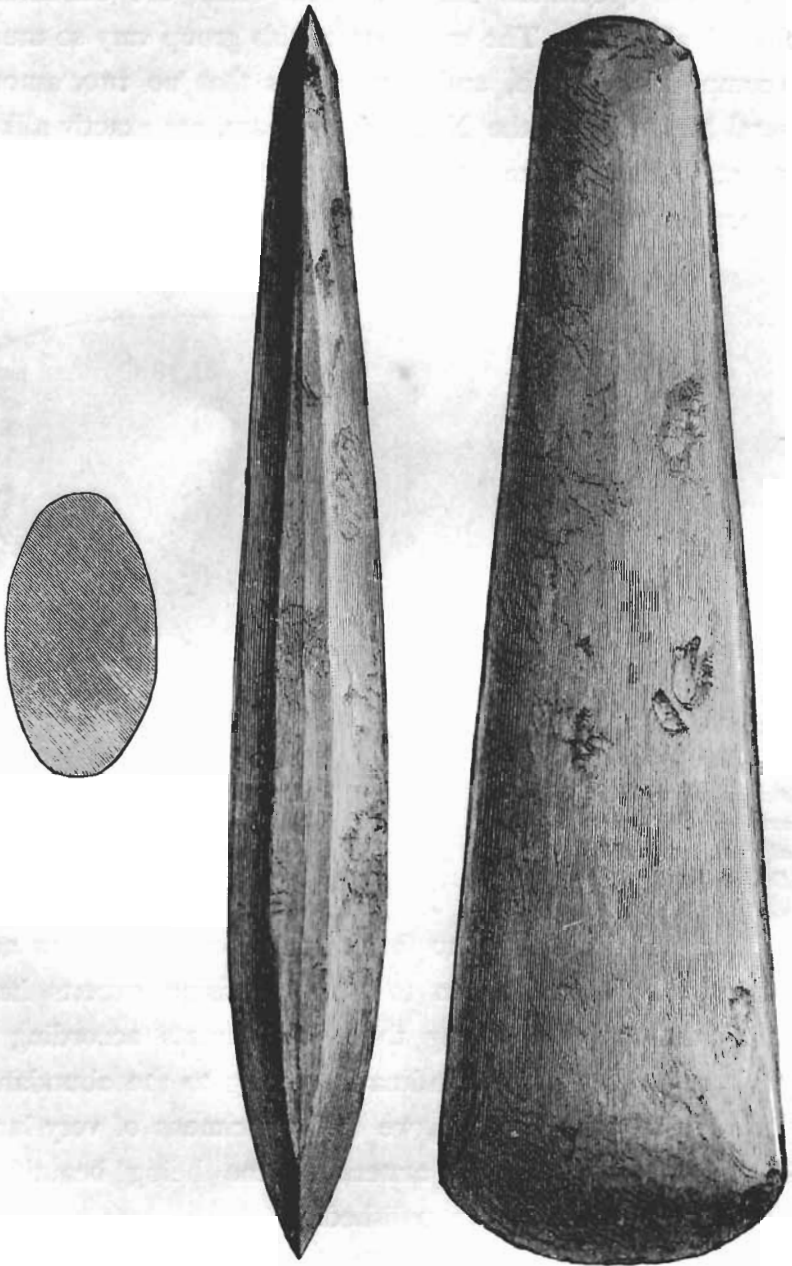


Fig. 51.—Stone axe found while cutting a drain on the farm of Brownhill, Tarbolton ($\frac{1}{2}$).

towards the two extremities. It is finished to a curved adze-like edge at both ends" (fig. 52).¹ A few chisels are also to be noted, their characteristics being a short cutting edge and a long slender body.

Besides stone, bone and deer-horn have been utilised for making various kinds of implements, such as hammers, chisels, spatulæ, picks, &c., numerous specimens of which have been recorded from crannogs, caves, kitchen-middens, brochs, &c. They are not often found in graves, being in such positions liable to decay. Canon Greenwell, however, has met with a few horn implements in the Yorkshire barrows, two of which, a perforated hammer and a pick, are engraved as figs. 33 and 34 of his 'British Barrows.' Among the industrial remains from the Continental lake-dwellings, the Terremare of Italy, and the reindeer caves of France and Switzerland, implements of this class are very common. Picks of deer-horn were used by the prehistoric people of Britain in extracting flint from chalk pits, as at Grime's Graves near Brandon.²

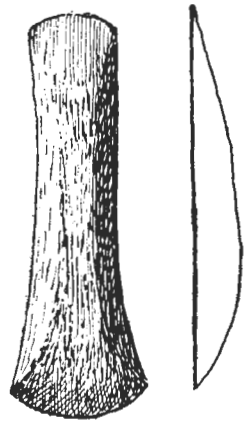


Fig. 52.—Polished celt of grey flint found at Ferney Brae, Slains, Aberdeenshire (7 inches in length).

The process of grinding and polishing stone implements appears to have been accomplished by the manual labour of rubbing them, either upon a fixed block of sandstone or with a portable hone. Specimens of these grinding-stones have been occasionally met with in Scotland, as shown in the accompanying illustrations (figs. 53 and 54); but in Denmark and Sweden large slabs, worn into elongated hollows

¹ Proc. Soc. A. Scot., vol. x. p. 598.

² Journ. Eth. Soc., N.S., vol. ii. p. 419.

and grooves by the friction of the implements, are of frequent occurrence.

With regard to the methods of hafting the unperforated axes and chisels, we have, since the discovery of the Swiss

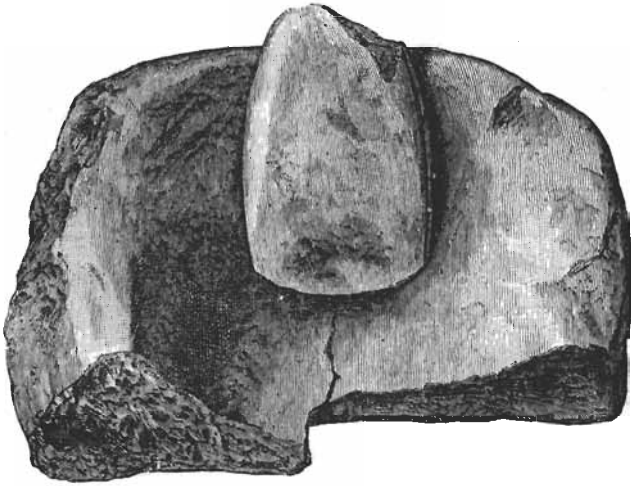


Fig. 53.—*Whetstone with stone axe found near the sandhills in Stoneykirk, Wigtownshire ($\frac{1}{2}$).*

lake-dwellings, most satisfactory evidence as to how this was done. Remains of the actual handles have been very rarely found in Scotland—only two instances of the kind

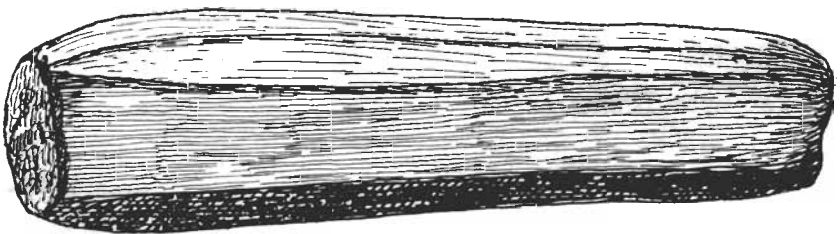


Fig. 54.—*Polygonal grinding-stone of quartzite found while excavating a drain on Lambertton Moor, Berwickshire ($\frac{1}{4}$).*

being known to me. One, consisting of a simple wooden handle with a hole into which the celt was inserted, was found by a man digging peats in the Solway Moss, at a depth of 6 feet (fig. 55, No. 1). The other, found in a peat-

bog in the island of Bute, and preserved in the Chapelhill Museum, Rothesay, was attached, with some sort of pitch, to a wooden handle now greatly decayed.

Among the relics from the Swiss lake-dwellings are numerous

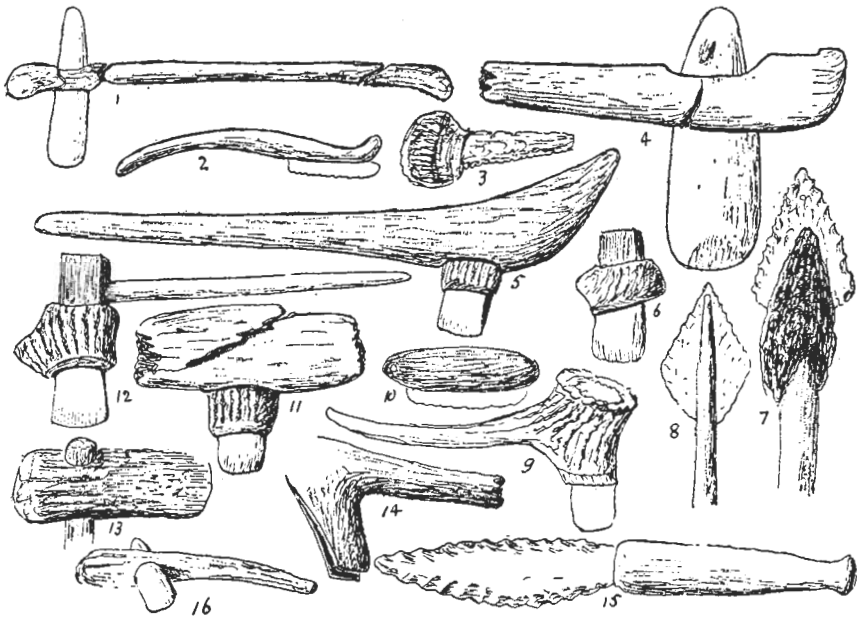


Fig. 55.—*Various methods of mounting stone implements.*

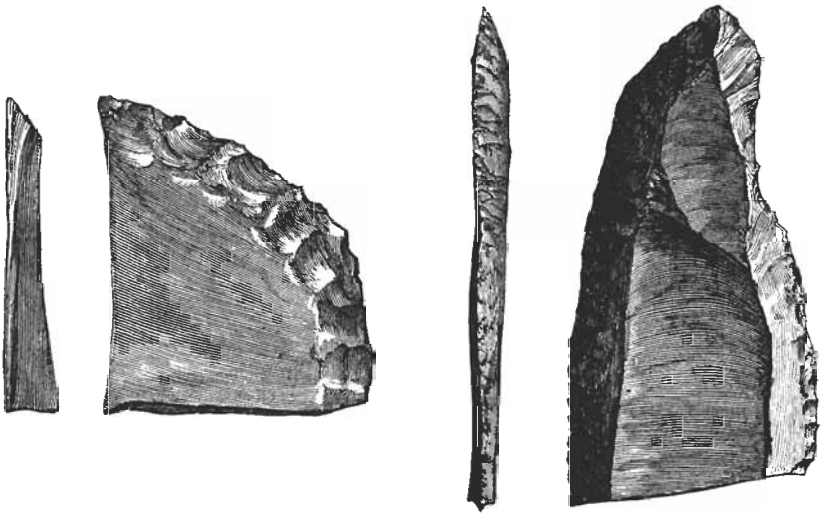
1, Stone axe from Solway Moss (Proc. Soc. A. Lond., vol. iv. p. 112); 4 and 16, 'Ancient Stone Implements, &c.' figs. 92 and 93; 8, Arrow-head still in shaft from Fyvie (Proc. Soc. A. Scot., vol. xi. p. 509); all the rest from 'Lake-Dwellings of Europe.'

wooden objects, including the handles and horn fixtures for mounting stone axes. Specimens of a few of these are shown in the accompanying sketches (fig. 55).

2. *Knives, Saws, and Scrapers.*

A flint flake, when suitably formed, is well adapted for cutting and scraping by a kind of sliding pressure, but when much used in this manner the edge becomes quickly blunted, and hence it was necessary to work up the flake by second-

ary chipping. Sometimes this was done by grinding instead of chipping, but this variety of knife is much rarer in Scotland than the ordinary worked flakes. A few specimens of these trimmed flakes are represented in figs. 56-58. Those with ground edges and chipped surfaces, though few in number, have been recorded from such widely-separated districts as Caithness, Argyll, Aberdeen, Lanark, and Berwick. A very fine specimen of a ground-edged knife was found on the farm of Butterlaw,¹ near Coldstream, and measures 4 inches



Figs. 56, 57.—*Trimmed knives from Torrs, Old Luce, Wigtownshire* ($\frac{1}{2}$).

in length and $2\frac{1}{2}$ inches in breadth, but only $\frac{1}{4}$ inch in thickness (fig. 59).

Canon Greenwell has figured a flint knife, with regard to which he writes as follows: "Amongst the bones was deposited a flint knife, unburnt, $2\frac{7}{8}$ inches long and $\frac{7}{8}$ inch wide, by far the most beautiful specimen I have yet met with; it is very delicately flaked over the whole of the convex surface, the edges being serrated with the greatest skill and regularity. It is another example of those implements which,

¹ Proc. Soc. A. Scot., vol. xxviii. p. 324.

when associated with interments after cremation, have been usually found to be themselves unburnt.”¹

Originally the knife-flake and the saw were one and the same, but their specialisation into separate tools dates as far back as Palæolithic times, as we find saws among the relics of the reindeer caves of France and the rock-shelter of the Schweizersbild in Switzerland.² In the earlier archæ-



Fig. 58.—Trimmed flake, Mid Torrs, Old Luce ($\frac{1}{4}$).



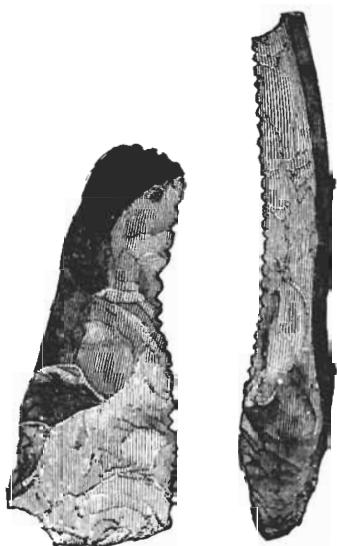
Fig. 59.—Ground-edged knife of flint found at Butterlaw ($\frac{2}{3}$).

ological works the term “saw” is indiscriminately applied to a knife-flake accidentally chipped by usage, as well as to one intentionally trimmed. The special characteristic of a saw is a cutting edge, with teeth so regularly formed that its function involves the necessity of a to-and-fro motion. Hence the knife described by Canon Greenwell in the above quotation might be regarded as a saw. True saws, though widely

¹ British Barrows, p. 285.

² Neue Denkschriften der allg. schw. Gesel., vol. xxxv., Pl. xi.

distributed over Europe, are not abundantly to be seen in archæological museums. They have been found on the sites of lake-dwellings and other primitive habitations, and also in graves, but most frequently as stray objects in the surface soil. The flint saws in the Scottish National Museum (figs. 60-63) have been collected chiefly on the subsoil of the sand-dunes of Glenluce, Culbin, and Golspie. Their number now amounts to upwards of 160. They are usually made of flakes, but sometimes of chips, carefully trimmed so as to



Figs. 60, 61.—*Flint saws from Glenluce* (†).

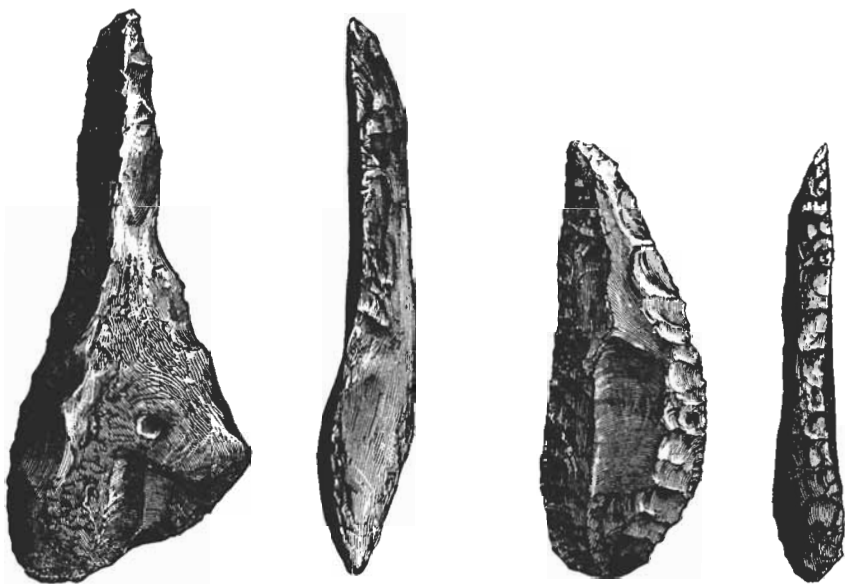


Figs. 62, 63.—*Flint saws from Culbin Sands* (†).

present a series of regularly serrated teeth. Some are triangular on section and only one of the edges is serrated. Others, again, are serrated on both edges. The teeth in all the specimens found in Scotland are minute and fashioned with the utmost care and regularity. Along the edge of one specimen from Glenluce—a long, narrow, thickish flake—I counted thirty-five teeth over a length of $1\frac{3}{4}$ inch; and along this edge there was to be seen a narrow band of glistening polish, scarcely broader than the length of the

teeth. This feature has been observed on many of these saws without regard to their *provenance*.

Formerly it was a current opinion among archæologists that flint saws were not to be found in Ireland. That this opinion is erroneous is proved by Mr Knowles, who writes to me that he possesses numerous examples picked up among the *débris* of kitchen-middens on the sandhills. He states that in addition to flakes, "so serrated at the edge that a person at once comes to the conclusion that they had been



Figs. 64, 65.—Pointed flint scrapers, Torrs, Old Luce ($\frac{1}{2}$).

prepared for use as saws," there is another class of implements largely found in Ireland called "hollow scrapers," many of which must be regarded as true saws, as the teeth are regular and well defined. Mr Knowles has, recently, more particularly described these implements in a paper on "Irish Flint Saws" to the Royal Society of Antiquaries of Ireland (vol. iv., 5th series, p. 341). For further notices of saws and their distribution in Europe I must refer my readers to 'Prehistoric Problems,' chap. viii.

Among the remains of the ancient stone industry in this country the implement most largely represented is that known as the scraper, or "thumb flint" (figs. 64-67). It generally consists of a flake having the thick end worked into a semicircular edge slanting to its flat face, while the body or "neck" may be held between the fingers. But sometimes there is little or no neck, and the implement



Fig. 66.—*Slender scraper, Torrs, Old Luce* ($\frac{1}{3}$).

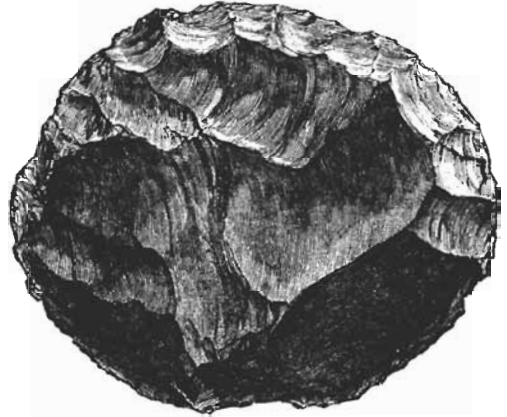


Fig. 67.—*Horse-shoe scraper from the Crannog of Lochspouts, Ayrshire* ($\frac{1}{3}$).

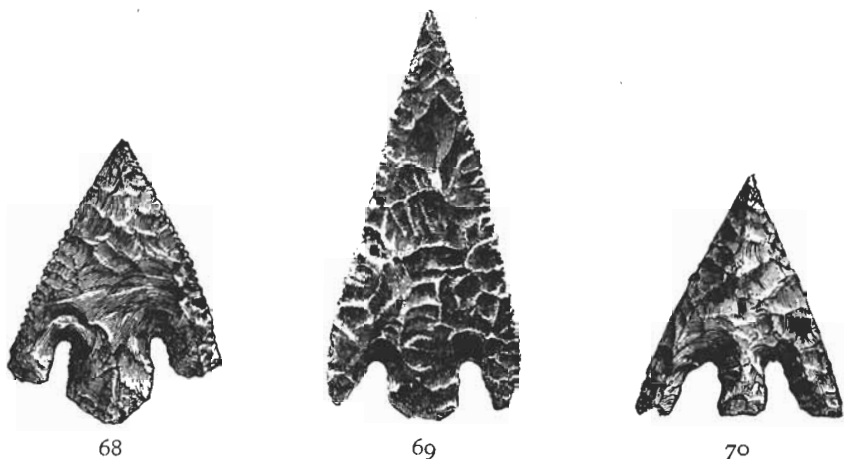
may be of a discoidal, circular, or horse-shoe shape; in which case it was necessary to have it mounted in some kind of handle to make it effective for any mechanical purpose. Some have a concave edge, and are known as "hollow scrapers"—a type of implement hitherto more frequently found in Ireland than in Scotland. The instruments used for boring have, of course, a sharp point, but otherwise they may be regarded as scrapers.

3. Weapons.

Arrows, spears, and javelins, being intended for piercing the tissues of the body (man or beast), naturally resemble each other in having a sharp point. Otherwise, they differ

only in size and in the manner in which they are used. But whatever be the specific weapon,—arrow, spear, dagger, or javelin,—its efficiency demanded that the tip should be made of a harder substance than wood. For this purpose the best material was flint, although bone and horn were also used—especially for short hand-daggers, like those found in the lake-dwelling stations of Laibach, Mondsee, and others.

Arrow-points may be divided into tanged (figs. 68-70) and



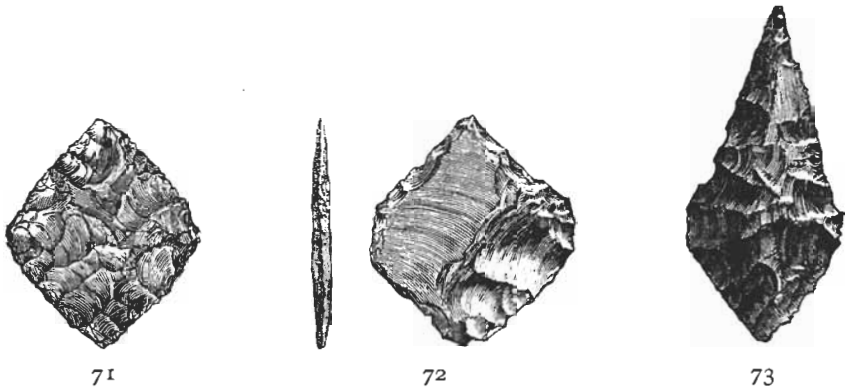
Figs. 68, 69, 70.—*Tanged arrow-points of flint*: 68 and 70 from *Torrs, Old Luce, Wigtownshire*; and 69 from *Lanfane, Ayrshire* (†).

untanged (figs. 71-74), the latter being further subdivided according as they resemble a leaf, a lozenge, or a triangle—a division which is also applicable to spear-heads. The workmanship on some of those objects displays marvellous manipulation, especially in the execution of what is known as ripple-flaking.

Having secured the tip, the warrior or sportsman had to consider how it could be best attached to the shaft or handle. This was generally effected in the case of the arrow by inserting the lower end of the flint into a slit in the wood, and then tying it with a string. Among the lake-dwellers a kind of

asphalt was used to keep the tip firmly in its position. These methods are illustrated in fig. 55, Nos. 7 and 8.

It is perhaps unnecessary to say that the presence of



Figs. 71, 72, 73.—Lozenge- and leaf-shaped arrow-heads, Old Luce, Wigtownshire (†).

arrow-points implies the other necessary equipments of the archer—viz., the bow, the arrow-shaft, the quiver, and the bracer. Of the actual remains of the three former articles



Fig. 74.—Triangular flint arrow-head, High Torrs, Wigtownshire (†).

almost nothing has survived in this country to the present day, owing, no doubt, to their decay. But in the Swiss lake-dwellings several specimens of the bow have been found—as, for example, one from the station of Nidau in Lake Biene, and another from Robenhausen, both being about 5 feet in length. The latter is made of yew, and shows the notch at both ends for the string. The bracer, supposed to be for protecting the wrist of the archer, being made of stone, and therefore not liable to decay, has been found in several localities in this country—generally in graves (figs. 75 and 76).

In Scotland, spear-heads, whether made of flint or of any other material, do not figure largely among its prehistoric relics. The few objects that may be so classified differ from the arrow-heads only in being a little larger, seldom exceeding 3 inches in length (fig. 77). In England we meet with a few large lanceolate, or leaf-shaped, flakes with elaborate workmanship, which, according to Sir John Evans, might have been used as daggers;¹ and in the Swiss lake-dwellings similar blades were either inserted into wooden handles, or had the butt-end covered over with twisted withes so as to afford a better grasp.² No specimens of the beautifully formed daggers, having the blade and handle made of one piece of flint like those of the Scandinavian archæological area, have been found within the British Isles.

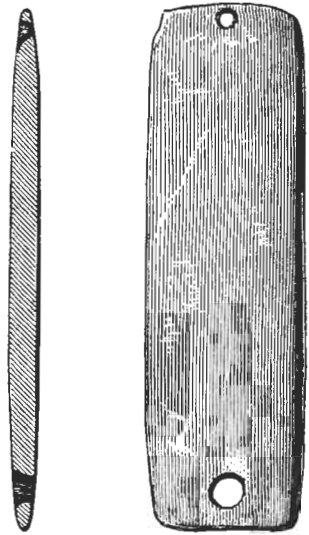


Fig. 75.—*Bracer of stone found at Mid Torrs, Old Luce* ($\frac{1}{4}$).

Barbed harpoons of an early type have already been noticed

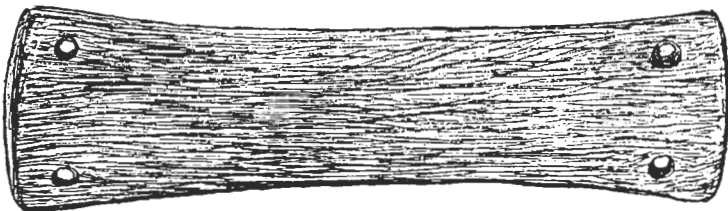


Fig. 76.—*Polished bracer of felsite found with an urn at Fyrish, Evanton, Ross-shire* ($\frac{2}{3}$).

in the description of the MacArthur cave and rock-shelter at Oban, as also the perforated deer-horn chisels and picks

¹ Ancient Stone Implements (figs. 264, 265).

² Lake-Dwellings of Europe, fig. 8, Nos. 2 and 28.

associated with the stranded whales in the Carse of Stirling. Sharp-pointed objects made of bone and horn, some of which may be regarded as daggers, have also been found in graves in this country, and more especially among crannog remains.

Among weapons may be noticed the so-called sling-stone, which may be a smooth pebble from the brook, or a flint nodule roughly chipped into a lenticular, discoidal, or globular

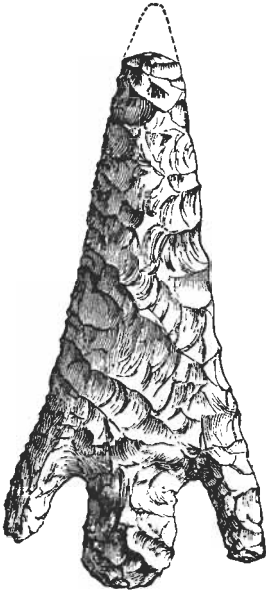


Fig. 77.—*Javelin-head,*
Machermore, Old
Luce ($\frac{2}{3}$).

shape. In the Wolds of Yorkshire these prepared flint nodules may be picked up in great numbers on ploughed fields, and elsewhere, as stray relics. It is, however, difficult to believe that all the objects so characterised were really used as sling-stones. The primary apparatus for projectiles was the hand itself, without the intervention of any mechanical appliances; and I cannot help thinking that many of the larger pebbles, so frequently found on ancient inhabited sites, were used in this manner.

Hundreds of ovate pellets of clay, generally not larger than a pigeon's egg, burnt and unburnt, have been found on the site of the lake-village of Glastonbury, which are regarded as sling-bolts, or perhaps fire-balls. Similar clay pellets have been recently dug up in considerable numbers on the site of Ardoch Camp, associated with Roman pottery and other Roman remains.

The remarkable series of ornamental stone balls found in Scotland—and only in Scotland—and supposed to have been attached to thongs and used as flail-like weapons, may here be noticed, though it is probable that they belong to a later period of Scottish civilisation than that now under

review. They were first critically examined and described by Dr J. Alexander Smith,¹ but since then their number has greatly increased. They vary in size from 1 inch to about 3½ inches in diameter, and have their surfaces divided into four, six, or more symmetrical discs, or, sometimes, projecting knobs. The discs are generally ornamented by incised spirals, concentric circles, check patterns, &c. Dr Joseph Anderson thus refers to their probable use: "In all their varieties of form, these objects present certain features which are sug-



Fig. 78.—Stone ball ornamented with incised patterns found in digging a drain in the Glas Hill, Towie, Aberdeenshire ($\frac{2}{3}$).

gestive of a possible use as weapons. Their ornate character, their speciality of form, which renders them capable of being swung by thongs or bound to the end of a handle, and the fact that one example is pierced by a hole, are indications in this direction. Although there is no conclusive evidence of the fact, it is at least conceivable that they may have been mounted as mace-heads similar to those metal mace-heads with pyramidal projections which are found occasionally among the relics of the Iron Age, and con-

¹ Proc. Soc. A. Scot., vol. xi. p. 29.

tinued in use in the early Middle Ages, and similar, at least in appearance, to the mace-heads shown in the hands of unmounted men in the Bayeux Tapestry.”¹ Some of these balls (fig. 78) are decorated with spiral ornamentation, which resembles that on metal work of the Bronze Age in Scandinavia and in the Danubian valley.

4. *Clothing and Ornaments.*

We have no knowledge of any phase of humanity in which the love of personal adornment does not play an important part in the life of the individual. The savage of the present day, who paints or tattoos his body and adorns it with shells, feathers, teeth, and trinkets made of the more gaudy materials at his disposal, may be accepted as typical of the Stone-Age men of Europe. Their ornaments consisted chiefly of beads, pendants, rings, bracelets, necklaces, &c., made of jet, amber, bone, horn, teeth, &c. Few, however, of such relics have been found in Scotland that can be identified as belonging to the Stone Age. Buttons made of jet are not uncommon among the contents of ancient graves. They are generally conical on the upper surface, and flat beneath, with a curved or V-shaped tunnel, both ends opening on the under surface, as shown in fig. 79. On the 12th December 1898, three jet buttons, varying in size from $\frac{3}{4}$ inch to $1\frac{1}{4}$ inch in diameter, but of the usual conical form and perforated underneath, were exhibited at the Society of Antiquaries of Scotland as having been found in a cist with a cinerary urn at Keith Marischal, East Lothian. One found in a cist on Law Hill, Dundee,² is quadrilateral in shape, with linear ornamentation on the back (fig. 80). Another, hemi-

¹ Scotland in Pagan Times, p. 170.

² Proc. Soc. A. Scot., vol. xxiv. p. 10.

spherical in shape, is from Mid - Torrs, Glenluce.¹ Three made of cannel coal, and found in a tumulus near Rothbury Northumberland, are described as circular, two inches in diameter, slightly conical on one surface and with the usual

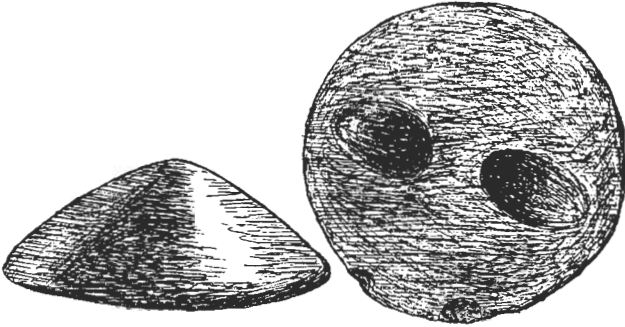


Fig. 79.—*Jet button, upper and under surfaces, found on Crawford Moor, Lanarkshire* ($\frac{2}{3}$).

perforation on the other. Canon Greenwell has figured a number from the Yorkshire barrows, some of them being highly ornamented. Buttons of bone have also been found

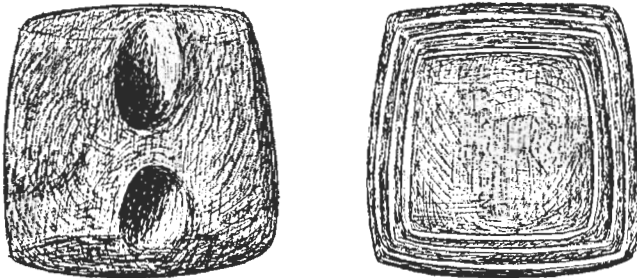


Fig. 80.—*Back and front view of a jet button found in a cist at Law Hill, Dundee* ($\frac{2}{3}$).

occasionally — one with two holes being from an urn at Murthly, Perthshire.

Of the more perishable works of the earliest inhabitants of Scotland very little, if anything, has reached our day. Of the spinning industry the spindle-whorl alone remains as evidence,

¹ Proc. Soc. A. Scot., vol. xxx. p. 5.

but, as it has also been used in all subsequent ages, even up to the present time, it possesses no chronological value. Fragments of woollen cloth, along with a skeleton, were found by a man cutting peats in a bog at Birsay, in Orkney. The body, that of a female, was in a sitting position, the top of the skull being 2 feet below the surface of the peat. "The portions of woollen fabric are of two or three different varieties of texture, the largest portions woven of thick and coarsely-spun yarn. The pieces are much patched, so much so as to suggest the dress of a vagrant rather than that of a person careful of appearances." ¹

Portions of woollen cloth of four or five different textures are said to have been found in a cist at Greenigoe, parish of Orphir, Orkney, along with two beads, one of amber and the other of an opaque vitreous paste.²

A complete woollen hood, with a wide fringe,³ found in a moss in the parish of St Andrews, Orkney, is preserved in the National Museum; also fragments of cloth and a leather shoe said to have been found associated with human skeletons in a moss at Culrain, Ross-shire.⁴

Canon Greenwell has occasionally recorded the finding of remains of woollen and leather garments in British barrows, as, for example, in a coffin made of a hollow oak trunk, found in a barrow at Scale House, Craven. For a notice of this and similar tree-coffins in England and Denmark I would refer my readers to 'British Barrows,' p. 377.

Sir Daniel Wilson,⁵ in describing a garment procured by Dr Samuel Hibbert from some labourers who had found it, on the chance exposure of a stone cist, while excavating for railway work near Micklegate Bar, York, about the year 1838,

¹ Proc. Soc. A. Scot., vol. xvi. p. 12.

² Ibid., vol. xxiii. p. 123.

³ Ibid., vol. xiv. p. 81.

⁴ Ibid., pp. 91, 92.

⁵ Prehistoric Annals, vol. i. p. 475.

thus writes: "This valuable relic—now in the Scottish Museum—appears to be a sleeve, or covering for the leg; and somewhat resembles the hose worn by south-country Scottish farmers, drawn over their ordinary dress as part of their riding-gear. It has been knitted; a process which doubtless preceded the art of weaving, probably by many centuries. The fabric is still strong, and, in careful keeping, may long suffice to illustrate the domestic manufactures of the ancient Briton. This is one of the examples to which reference has been made in a former chapter, as showing the source to which it is conceived the ornamental designs on early British pottery may be traceable; though the resemblance is less striking here than in some more imperfect specimens of such products of the primitive knitting-needle or loom. The accompanying woodcut (fig. 81), representing a portion of the knitted fabric, will enable the reader who is familiar with the style of ornamentation on the pottery of the tumuli to judge for himself how far this idea is justified by the correspondence traceable between them."



Fig. 81.—*Portion of knitted work found in a cist near Micklegate Bar, York.*

A human body, the mummy of which is now preserved in Dublin, was found in a bog 9 or 10 feet beneath the surface. "When first exhumed," writes Sir W. Wilde,¹ "the body was perfectly fresh, and enclosed in a dress not unlike

¹ *Beauties of the Boyne*, p. 237.

that in the description given of Gurth in 'Ivanhoe,' consisting of a tunic of cow-hide, apparently tanned, but with some remains of hair still preserved on the side worn next the skin. This dress is joined in the most accurate and beautiful manner, exhibiting an extraordinary perfection in the art of sewing. The hair on the head, which is both long and fine, is of a dark-brown colour, and the skull is compressed in a remarkable manner, owing to a portion of the earthy matter having been removed by the acid of the bog."

But for a more complete picture of the culture and civilisation of Neolithic man we must investigate the relics of the lake-dwellings of the Stone Age of Europe. In the station of Robenhausen we meet with a variety of woollen cloths, yarn, bast ropes, &c., associated with spindle-whorls, loom-weights, and other objects used in spinning and weaving. In the Neolithic stations of Butmir, in Bosnia,¹ and Laibach, in Styria,² as well as in other localities throughout Europe, human figurines have been found which are generally regarded as idols, thus showing that their inhabitants were guided to some extent by supernatural influences.

¹ Rambles and Studies in Bosnia, p. 98, Pl. xiii.

² Lake-Dwellings of Europe, p. 532, fig. 195.