NOTICE OF A REMARKABLE FIND OF BRONZE SWORDS AND OTHER BRONZE ARTICLES IN EDINBURGH; WITH NOTES ON BRONZE SWORDS FOUND IN SCOTLAND. By JOSEPH ANDERSON, Assistant Secretary and Keeper of the Museum.

The discovery of bronze swords in the city of Edinburgh which forms the subject of the present notice is of peculiar interest, inasmuch as no similar instance of such a number of bronze swords and other articles found together has ever occurred in Scotland, if we except the equally remarkable discovery in the Loch of Duddingstone in 1780, which formed the first of the long list of donations to the Museum. From the extensive nature of these two deposits, and from the fact that a third was found on the slope of Arthur's Seat overlooking the Loch, when the Queen's Drive was formed in 1846, it is reasonable to conclude that this locality was the seat of an active industry or traffic in the Bronze Age.

It is therefore peculiarly unfortunate that a full description of the circumstances of the latest discovery cannot now be obtained. It occurred shortly before my coming to Edinburgh in 1869, and, owing to the death of my predecessor, Mr Maculloch, any notice that he may have had of it has not been recorded. In the absence of more definite information, the following statement, obtained by Mr Carfrae from an eye-witness of the discovery, is fortunately available:—

The bronze swords were found in excavating the foundations of the block which is now Nos. 7 and 8 Grosvenor Crescent, belonging to the late Mr Matheson of H.M. Board of Works. The number of the swords is said to have been about 14 or 15, and they are described as much covered

^{1 &}quot;Sculptured Stones of Scotland," vol. i. plate lxiv.

with verdigris, and some presenting remains of the scabbard and hilt. One is said to have found its way into the possession of a labourer, and is lost,

but the rest were saved from a similar fate by the son of the contractor, Mr Waddell.

It is also fortunate that some of the swords and other objects found with them have passed into the possession of a gentleman of such scientific spirit as Dr Paterson of Bridge of Allan, Corr. Mem. S.A. Scot., who responded so courteously to my request that he should exhibit them to the Society as to leave them in the Museum until it should be convenient for me to examine and describe them. A similar request, preferred by Mr Carfrae to the gentleman in whose possession the remainder of the swords were that are now recoverable, was met with an equally courteous compliance; and I am now able to exhibit four of the swords and three of the articles found with them.

They are as follows:—

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1. Bronze sword (fig. 1), having the blade, handle, and pommel of one casting; the pommel hollow, and retaining its core of clay. The form of the sword is shown in the engraving. It measures 20 inches in length, $1\frac{1}{4}$ inch across the blade in its narrowest part between the handle and the swelling of the blade, where it is 1½ inch in width. The handle-plates are 4 inches in length to the insertion in the pommel, which is 2 inches in diameter and 11 inch Edinburgh (20 inches in length). The grip of the handle is § inch thick and an inch in in height.

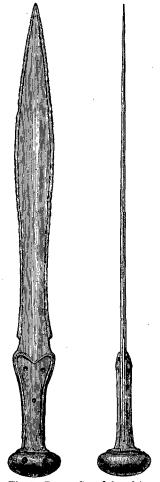
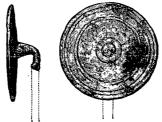


Fig. 1. Bronze Sword found in X

width at the centre, widening to 17 inch at the insertion of the blade, which has the usual nick on both sides where it joins the handle. I am indebted to Mr John Evans for the use of the woodcut of this sword, prepared for his forthcoming work on the Bronze Age.

- 2. Sword with flat handle-plate pierced for six rivets. It is $24\frac{1}{4}$ inches in length, wanting probably a quarter of an inch at the point. The blade is $1\frac{3}{8}$ inch across at its narrowest part below the handle, and $1\frac{7}{8}$ inch at its widest part.
 - 3. Sword with flat handle-plate, 22 inches in length, wanting portions of the point and of the handle-plate.



- 4. Sword with flat handle-plate, pierced for three rivets, 20 inches in length, but wanting a considerable portion of the point.
- 5. Ring of bronze, 3 inches diameter, formed of a wire of an inch in thickness.
- Fig. 2. Head of Bronze Pin (actual size). 6. Flat circular head of a bronze Pin (fig. 2), with portion of the bent stalk of the pin attached to the centre of the head by being inserted through it and riveted. face of the flat disc is ornamented with engraved concentric circles.





Figs. 3 and 4. Obverse and reverse of Bronze Mounting (actual size).

7. Hollow circular Mounting of a Belt (or similar object) 11 inch diameter, with two loops for attachment underneath, as shown in figs. 3 and 4.

Nos. 1, 2, 5, 6, and 7 are exhibited by Dr Paterson, Bridge of Allan, and Nos. 3 and 4 by Mr Waddell, contractor. It will be observed that No. 1 of the swords differs from all the others, in having the handle cast of bronze in one piece with the blade. The handle is hollow, and furnished with a rounded pommel, which is broken at one side, and shows that the core of hardened clay on which it was cast is still retained in it.1 But the handle of this bronze sword has a special interest, because it reveals two curious circumstances connected with the process of its formation. You will observe that it is pierced by holes, which at first sight suggest the rivet holes on the handle-plates of the common variety of bronze sword. But there are no rivets in them, and they could never have been intended for this purpose, because not only do they not pass through, but they are not opposite each other. My explanation of their purpose is, that when the core was placed in the mould it was necessary that it should be supported in its true position, suspended exactly into the centre of the hollow mould, so that an equal thickness of the metal might be run all Now this could not be done by any method surer or more convenient than by wooden pins passing through the sides of the mould into the core from opposite sides, and these pins would produce corresponding holes in the metal.

Again, on examining the form of the handle, it will be seen that it has been cast in a matrix modelled from a sword which had the grip made up of two convex plates attached on either side of the handle-plate, and their ends covered by a hollow pommel. In other words, it is a reproduction entirely in bronze of such a sword as the Tarves one ² had been when the grip was still furnished with its convex handle-mountings of bone, wood, or horn.

Only six examples of this peculiar form of sword, with rounded, hollow

¹ This method of casting is curiously exemplified in Denmark by the discovery of several bronze battleaxes, in which the bulk of the implement is a core of clay, covered by a very thin coating of bronze.

² See the account and figure of the Tarves sword in Mr Franks's "Horæ Ferales," p. 161 and pl. ix.

pommel in bronze, are known to me, of which five are British and one is foreign. The British examples are—

- 1. The present specimen found in Edinburgh.
- 2. A sword figured by Pennant, and found in Skye.1
- 3. A sword found at Tarves, Aberdeenshire, now in the British Museum.²
- 4. A sword found in the River Cherwell, and now in the Museum at Oxford.³
 - 5. A sword in the Museum at Alnwick.

The only foreign example known to me is a sword found under a large stone at Njurunda, Medelpad, Sweden.⁴

With respect to the manufacture of bronze swords, there is no doubt that, like the celts, daggers, spear-heads, and other instruments of the same metal, many of them were made in the localities in which they are found. The moulds for celts and spear-heads neatly cut in stone that have been found in various parts of Scotland, and as far north as Ross-shire, are sufficient evidence of the prevalence of the practice of casting such implements throughout the country. Although no sword moulds have been found in Scotland, we have in the Museum casts of the two halves of a stone mould for a rapier-shaped sword found at Henwick near Chudleigh, in Devonshire.

As will be seen by examining the handle-plates of the swords found in Edinburgh, the grip was constructed by attaching handle-pieces of bone or hard wood on either side of the handle-plate. The remains of these are still to be seen on some of the specimens. In Ireland two examples of bronze swords, having the bone handle-pieces of the grip still attached to the handle-plates, have been found since 1865. The first of these was found in a bog in the county of Monaghan in 1865.⁵ A portion of the bone handle was submitted to Professor Owen, who pronounced it "mammalian,

¹ "Tour in Scotland" (1772), 2d edit., Lond. (1776), vol. ii. p. 333, and pl. xliv.

² Figured in "Horæ Ferales," pl. ix.

³ Figured in Evans's "Petit Album de l'Age du Bronze," Lond., 1876, pl. xiv. fig. 5.

⁴ Figured in Montelius's "Antiquites Suedoises," fig. 157.

⁵ Figured in the "Kilkenny Journal" for January 1868.

and probably cetacean." It is preserved in the collection of Mr Day. Another was found in 1871 in draining a meadow near the Blackwater, county Armagh, and is preserved in the collection of Mr Young of Monaghan. It is of the usual form, 20 inches in length, and the handle-pieces of the grip on either side of the bronze handle-plate are nearly entire. They seem to be of deer-horn, and are attached by rivets of bronze.

The leaf-shaped sword is the most characteristic weapon of the Bronze Age. The form is peculiar to that time and material, for although the earliest iron swords retained the form, they were mere copies of the type then generally in use in bronze. It is a singularly graceful weapon, and the way in which the edge was formed by the sudden thinning of the metal exhibits an admirable adaptation of its peculiar qualities to the end in view. The metal is so soft that to have kept the edge sharp by grinding would have speedily reduced the weight and bulk of the blade. The ingenious contrivance of suddenly thinning the metal, and hardening the thin margin by hammering, shows that the artificers knew what was the weak point in the adaptation of the material to their purpose, and how to provide against it.

It will be observed that all the Scottish swords, without exception, have a peculiar nick on both sides of the blade where this narrow thinned edge runs out, within about an inch of the handle-plates. This peculiarity is common to the bronze swords of France and to the earliest iron swords of the tumuli. It belongs, therefore, to the later period of the Bronze Age.

It is not easy to estimate the comparative number of bronze swords recorded in different countries, owing to the difficulty of determining the precise distinction between swords and daggers. I give the numbers as I find them:—Denmark, 590 swords; Sweden, 484 swords and daggers;

¹ It is engraved in the "Journal of the Historical and Archæological Association of Ireland," vol. ii. (4th series), p. 257.

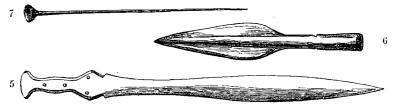
² A rapier-shaped sword, without handle plate, but with a haft of whalebone, was found in 1864 in a bog in Tyrone, and is in the possession of Mr Crawford of Trillick. A bronze dagger, hafted with oak, is figured along with this specimen in the same volume of the journal above cited, pp. 196, 197.

France, 386 swords; Switzerland; 60 swords; Ireland, 282 swords and daggers. In Scotland the number recorded, so far as I can make out, is under 40, of which there are 22 in the Museum.

The following are the details of the several specimens and of the circumstances in which they were found, so far as known:—

Caithness.—One sword, now in the Museum, 26 inches in length, with flat handle-plate pierced for rivets. It was exhibited at a meeting of the Society in 1855, by Mr C. Lawson, and subsequently presented to the Museum by the owner, George Sutherland, Esq. of Forse. It was found in a moss in the parish of Latheron, not far from Forse.

Inverness-shire.—Five swords, three found in Skye and two in Uist. One of those found in Skye has been already mentioned as figured by Pennant. He describes this sword as in the possession of Col. Macleod of Talisker, 22 inches in length of blade; handle, including a round hollow pommel, $5\frac{1}{2}$; the handle plate is of the usual form, and four rivet holes are seen under the pommel. The second is described as a sword of bronze, perfect, about 2 feet long, found in the moss of Lyndell near Loch Grishernish. It was seen by Mr Gregory, Secretary to the Society of Antiquaries of Scotland in 1832, and was then in the possession of Mr Macdonald of Balranald, in North Uist. The third was found in a moss on the north side of the point of Sleat, between the farms of Gillean and



Figs. 5, 6, 7. Bronze Sword, Spear-head, and Pin found in Skye.

Ach-na-cloich, and is described in a paper read to the Society in 1858 by Dr John Alexander Smith.² It is of the usual form, with flat handle-

¹ See "Arch. Scot.," vol. iv. p. 365.

² "Proceedings," vol. iii. p. 101.

plate, pierced for four rivets, and is $22\frac{1}{2}$ inches in length and $1\frac{2}{4}$ in greatest width of blade. Two bronze spear-heads, $7\frac{3}{4}$ inches long, of the form characterised by the absence of segmental openings in the blade and of loops on the socket, were found with the sword. A bronze pin, $10\frac{1}{8}$ inches in length, with a cup-shaped head $\frac{7}{8}$ inch diameter and $\frac{1}{2}$ inch deep, was also found with them. Some remains of oaken boards, found along with the bronzes, were supposed to have formed a box in which the articles had been placed. This conjecture rests upon the statement of the man who found them, and the "boards" do not appear to have been seen by any one but himself. This sword and the spear-heads and pin were in the possession of Lord Macdonald at Armadale Castle, when seen by Dr Smith. Two bronze swords were found at Jochdar, in the north-west end of South Uist, in 1865. They were discovered in cutting peats at a depth of 10 feet under the surface of the moss, lying on the hard subsoil. When first found they were "in their sheaths," which were covered with leather.\(^1\) One of the

¹ This is the only instance of bronze swords being found in leather sheaths in Scot-The remarkable interment at Ribe, in Jutland, in Denmark, is the only other instance known to me. The tumulus was about 150 feet in diameter, and 18 feet high. In it were three graves, containing coffins rudely hollowed out of oak-tree trunks. The one first found was not carefully examined. The second was a child's, and contained only an amber bead and a bronze bracelet. The third coffin was 9 feet 8 inches long, and measured internally 7½ feet long by 20 inches wide. It contained the remains of a man, with his arms and clothing in a most perfect state of preservation. The dress was entirely of woollen fabric, made with great skill and elegance. It consisted of a kilt fastened at the waist by a long band, which went thrice round and hung down in front; a pair of woollen leggings, and shoes of untanned hide. A neatly-made cloak of semicircular shape was fastened round the neck, and a closefitting cap of woollen knitted-work was on the head. This cap is thickly covered with short loose threads on the outer surface, each thread ending in a knot. A large plaid with fringed ends was cut in two, and half laid underneath the head for a pillow, while the other half was spread over the body. At the right hand was a box of bark similar to a lady's bonnet-box, in which was a smaller box of similar material, and in it were a conical cap of woollen cloth, 7 inches high, a bronze comb, and a bronze razor-shaped knife. At the left side lay a bronze sword, 27 inches in length, in a wooden sheath covered with leather. Over the whole an ox-hide had been wrapped when the body was deposited in the coffin. These articles are preserved in the Museum at Copenhagen, where I had the pleasure of inspecting them.

swords was 24 inches long, $1\frac{5}{8}$ inch wide at the widest part of the blade, and $1\frac{1}{4}$ inch at the narrowest part near the handle. The other is in the Museum, having been presented in December 1865, by John Gordon, Esq. of Cluny. It is 27 inches in length. They both showed the remains of handles of wood or bone, attached by rivets to the handle-plates, when found; but these, like the remains of the sheaths, were crumbled to dust by the rude handling of the finders. These swords were described in a communication to the Society by Captain F. W. L. Thomas, R.N., in June 1865.²

Aberdeenshire.—Four swords, one of which has been already noticed as the sword with rounded hollow pommel found at Ythsie, Tarves, with



Fig. 8. Sheath-end in length).

two others now in the British Museum. The fourth was found at Methlick, near Schivas House, and presented to the Society's Museum in 1834 by A. T. Irvine, Esq. It is now only 18 inches long, but has been broken, and the two parts dovetailed into each other.

Kincardineshire.—One sword, found in the moss of Cowie, near Stonehaven, and presented to the Museum in 1812 by George Silver. It is broken, but still measures 23 inches in length.

For farshire.—Five swords. Of these, one found in a bog at Eastertown, Stracathro, was presented to the Museum in 1838 by Rev. Thomas Guthrie, D.D. broken across the handle, and is 13 inches long.

Four swords were found at Cauldhame, near Brechin, A sheath-end of bronze (fig. 8) and a bronze spear-head, which is described as one of the largest and finest examples hitherto discovered in Scotland, were of Bronze (5% in. found with them.3 A number of these short bronze sheath ends for leaf-shaped swords have been found in

England, and one from the Thames has the sword still fixed in it.

^{1 &}quot;Proceedings," vol. vi. p. 271. It is there erroneously described as 39 inches in length.

² "Proceedings," vol. vi. p. 252.

³ *Ibid.*, vol i. p. 181.

Specimens have also been found at Dorchester, Stogursey in Somerset, Guilsfield, Montgomeryshire, and other places. Three instances of their occurrence in Scotland are recorded, viz., at Cauldhame, Forfarshire, and Gogar, Mid-Lothian, and at Tarves, Aberdeenshire. Two of the four swords found at Cauldhame, and the scabbard-tip of bronze, were presented to the Museum in December 1853 by the Queen's Remembrancer. One, which is broken across the handle-plate, is $21\frac{1}{2}$ inches in length, the other is 24 inches in length. The scabbard-tip measures $5\frac{7}{8}$ inches in length, $1\frac{5}{8}$ inch in breadth at the upper part, and $\frac{1}{2}$ an inch at the lower end, and the opening is $\frac{5}{8}$ inch wide in the middle.

Perthshire.—Two swords. One found in the Tay near Elcho, parish of Rhynd, Perthshire, is 25 inches long, but broken at the point. It was presented in December 1865 by Mr David Bennet.² The second, also found in the Tay near Perth, is 29 inches long, and is thus the largest Scottish bronze sword known. It is perfect, and like the other sword found in the Tay, it has a peculiar form of the handle-plate and a peculiarly shaped ending of the pommel, which do not occur on any other swords in the collection.

Stirlingshire.—One sword. A portion of a bronze sword said to have been found in a cairn at Ballagan, Stirlingshire, was presented to the Museum in 1788 by John Erskine of Alva. It is 6¼ inches in length, thicker and narrower than the swords usually found in Scotland, and covered with a greenish-brown patina.

Mid-Lothian.—Four remarkable finds of bronze swords have occurred in Mid-Lothian. The first in the order of time was that in Duddingstone Loch. The portion of it which was given to the Museum consisted of twenty pieces of the blades and nine of the handles of bronze swords, twenty-three pieces of spear-heads, the ring of a bronze caldron, and a mass of pieces of swords and spears "run together by fire." The find is thus described by Sir Alexander Dick of Prestonfield, in a letter to the Earl of Buchan, then Vice-President of the Society of Antiquaries of Scotland, of date January 16, 1781:—"In the third year of my pro-

^{1 &}quot;Proceedings," vol. i. p. 225.

² *Ibid.*, vol. vi. p. 271.

gress in dragging successfully great quantities of marl, now and then, in the middle of the lake, I met with large fragments of deers' horns of an uncommon magnitude. As my operations were proceeding northward, about one hundred and fifty yards from the verge of the lake next the King's Park, the people employed in dredging in places deeper than usual got into a bed of shell marl from 5 to 7 feet deep, from which they brought up in the collecting leather bag a very weighty substance, which when it was examined as it was thrown into the marl-boat, was a heap of swords, spears, and other lumps of brass mixed with the purest of the shell marl. Some of the lumps of brass seemed as if half melted; and my conjecture is that there had been upon the side of the hill near the lake some manufactory for brass arms of the several kinds for which there was a demand.

Some of these specimens that were most entire were retained at Prestonfield, some were given to Sir Walter Scott,² others were presented to King George III., and the remainder formed the first donation to the Museum of the Society of Antiquaries of Scotland, and are now exhibited in one of the central floor cases.

The conjecture hazarded by Sir Alexander Dick, that there must have been a manufactory of bronze weapons on the side of the hill above the loch, was apparently verified in 1846, when forming the Queen's Drive along the side of the hill opposite the part of the Loch in which these bronze relics were found, by the discovery of two bronze swords in a bed of charcoal, probably the remains of the fires of an open air foundry, where old and worn-out swords and spear-heads were melted and recast. This seems to have been a common practice in the Bronze Age, and several collections of broken and unserviceable instruments of bronze, among which were moulds and cores for recasting, and tools for finishing the new implements, have been found in various places in Britain, perhaps the most remarkable of which is that found at Harty, in the Isle of Wight, described by Mr Evans, who had the good fortune to secure the collection. The

^{1 &}quot;MS. Letter Book of the Soc. Antiq. Scot.," vol. i. 1780-81, p. 43.

² Figured in the Abbotsford edition of the "Waverley Novels," vol. ii. p. 103.

two swords thus found on Arthur's Seat are now in the Museum, having been presented by the Queen's Remembrancer in 1846. They are both entire, one measuring $26\frac{1}{2}$ inches, and the other 24 inches in length.

In digging a gravel pit at Gogar House, parish of Corstorphine, in 1811, a bronze sword (No. 1 of fig. 9) and scabbard-point (No. 2 of fig. 9), a

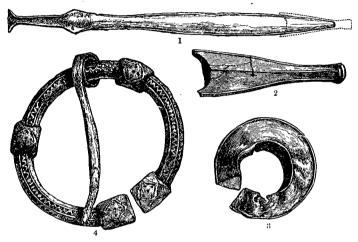


Fig. 9. No. 1, Bronze Sword; No. 2, Scabbard-tip; No. 3, Penannular Gold Ring; No. 4, Bronze Buckle. All found at Gogar.

penannular gold ring of peculiar form (No. 3 of fig. 9), and a bronze buckle (No. 4 of fig. 9) were found. They were exhibited to the Society in May 1865, and in January 1866 they were presented to the Museum by Mrs Bell, Forth Street, through J. M. Balfour Esq., W.S., a Fellow of the Society. As these articles were found upwards of fifty years before they were presented to the Museum, it was impossible to obtain precise information regarding the association of the objects beyond the general fact that they were found in the same gravel pit. The gold penannular ring is of a type which is rare in Britain, and so far as I can

^{1 &}quot;Proceedings," vol. vi. p. 311.

remember, does not occur in Scandinavia. There are four specimens in the Museum of the Irish Academy in Dublin. Only two are known to have been found in Scotland, and both are in our Museum. One of these is the Gogar specimen, the other was found with two large penannular rings in a moss in the West Highlands in 1856, and presented by P. Denny, Esq., Dumbarton.

The bronze fibula or buckle is also of peculiar type. I know nothing like it, either in form or ornamentation, that can with any certainty be referred to the Bronze Age proper. But it quite certainly resembles a class of fibulæ usually associated with remains of the Iron Age, and chiefly with Anglo-Saxon and Scandinavian interments. One such is figured by Akerman. It was found near Rugby, Warwickshire, and is described as of a form frequently met with in Anglo-Saxon interments. A similar fibula found in Norway is figured in the Foreninger for Norske Mindesmackers Bevaring for 1878.

The fourth discovery of bronze swords in Mid-Lothian was that which is described at the commencement of this paper.

Ayrshire.—At Kilkerran, in 1846, a number of fragments of bronze swords were found with several celts and the handle of a bronze caldron. Two of these fragments, two celts, and the bandle of the caldron were presented to the Museum by Sir James Dalrymple Ferguson.

Argyllshire.—Three bronze swords were found in the island of Shuna in 1875, one of which was presented to the Museum in February of that year by Mr Robert Thomson, Shuna, Corr. Mem. S.A. Scot.² It measures 21 inches in length, but wants part of the handle-plate. The other two were given by Mr Thomson to the Museums of Glasgow and St Andrews respectively. They were found in digging a ditch through peaty soil, within a short distance of each other, all sticking vertically in the peat with the points downward, as if they had been designedly thrust in and not casually lost. In the case of the find of weapons, consisting of three spear-heads and two bronze swords, near Thurston Farm, Whittingham,

¹ Akerman's "Pagan Saxondom," pl. xviii. fig. 4.

² "Proceedings," vol. xi. p. 121.

Northumberland, they were also found sticking in the moss with the points downwards, in a circle about 2 feet below the surface.¹

Berwickshire.—One sword, found with a bronze spear-head in 1854 in . Corsbie Moss. They were found in the peat within a foot or two of the surface by two men engaged in digging a drain. The sword had, when found, apparently a scabbard of metal, which fell to pieces and was lost.²

Kirkcudbrightshire.—In June 1873, a bronze sword (fig. 10), found many years previously in Carlinwark Loch, was presented to the Museum



Fig. 10.

- 1. Sword found in Carlinwark Loch (201 inches in length).
- 2. Representation of markings on the blade (actual size).

by D. A. Gordon, Esq. of Greenlaw.³ It measures 20½ inches in length, although a portion of the blade is wanting at the point. The flat handle-plate is pierced with five rivet holes, and on one side of the blade, for a space of 3 inches, there is a marginal marking of minute parallel lines crossing other lines running nearly parallel to the edge, as shown in the accompanying woodcut. This is the only instance of markings of this peculiar character which I have seen on a bronze weapon, and I have judged it advisable to give this faithful representation of them, reserving in the meantime all questions as to their origin.

^{1 &}quot;Proceedings of the Society of Antiquaries of London," 1870-73, p. 429.

² Ibid., 1854, p. 121. ³ "Proceedings," vol. x. pp. 261 and 286.